

| May/June - 2018 |

# vegetables

australia



| STEPHANIE CORRIGAN - YOUNG GROWER PROFILE | HORT FRONTIERS - BUILDING GREENER CITIES |  
| NEW R&D PROJECT - BOOSTING BENEFICIAL INSECTS ON VEGETABLE FARMS |



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## EDITORIAL

There's always plenty to see at a Trade Show, and the upcoming event at Hort Connections 2018 is no exception.

Sponsored by Fresh Markets Australia in partnership with the Central Markets Association of Australia, this year's Trade Show has a record number of exhibitors locked in from 18-20 June at the Brisbane Convention Centre, where delegates can forge new connections and learn more about cutting-edge products and services.

You can meet some of the AUSVEG team at our booth throughout the Trade Show, including AUSVEG CEO James Whiteside and our new National Manager – Public Affairs Tyson Cattle. This is a perfect opportunity for growers to raise any advocacy issues that AUSVEG can assist with and discuss the barriers that are affecting your ability to run a productive and profitable business.

There is also plenty on offer from the R&D project coordinators within our Science and Extension department, with National Tomato Potato Psyllid Coordinator Alan Nankivell on-hand to provide an overview of the latest developments in the surveillance and future management of this destructive pest.

Andrew Shaw will be available to update growers on the redeveloped EnviroVeg project and the ways to achieve environmental best practice and certification through Freshcare Environmental, while Lisa Brassington and Nikita Chawla will discuss a newly-launched project focusing on pest surveillance. Callum Fletcher and Madeleine Quirk will also share information

on implementing robust biosecurity practices on-farm, while Patrick Arratia will be available to discuss agrichemical needs and priorities in the vegetable industry.

Shaun Lindhe and Jarrod Strauch from our communications team will also be based at the booth for the duration of the Trade Show, providing a point of contact for information on our communications materials and InfoVeg resources. You can also sign-up to receive our magazines, e-newsletter and other industry updates.

Finally, if you have ever wondered what it would be like to star on the cover of this magazine or our sister publication *Potatoes Australia*, there will be a chance to test the waters at the AUSVEG booth, so make sure you stop by to check it out.

With only a few weeks left until Hort Connections 2018, we recommend having a look at the floor plan for the Trade Show, which can be accessed at [hortconnections.com.au/exhibitors](http://hortconnections.com.au/exhibitors). For more information on what's coming up at Hort Connections, turn to page 30. We look forward to seeing you there!

### VISIT THE TRADE SHOW AT HORT CONNECTIONS 2018

Monday 18 June: 6:30pm to 9:00pm.

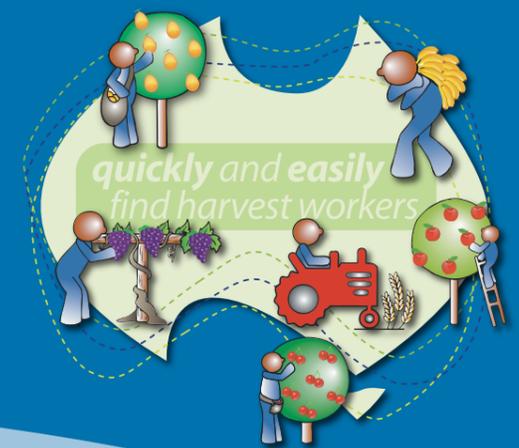
Tuesday 19 June: 10:40am to 6:00pm  
(Happy Hour from 5:00pm).

Wednesday 20 June: 10:40am to 3:00pm.

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*Vegetables Australia* is the most widely distributed magazine in horticulture.



It's not too late for growers to register for Hort Connections 2018, the premier event in Australia's horticulture industry, which will be hosted by AUSVEG and the Produce Marketing Association Australia-New Zealand at the Brisbane Convention Centre from 18-20 June.

This event has been tailored specifically to benefit growers across every sector of the horticulture industry.

A highlight for vegetable growers in particular is the annual Global Innovations in Horticulture Seminar, a strategic levy investment under the Hort Innovation Vegetable Fund. The seminar will be held on Wednesday 20 June and will provide a platform for speakers from Australia, the United States and Europe to discuss how global farming technologies can help transform a grower's business into an efficient, sustainable and profitable operation.

This year's seminar will feature a robotics panel including Professor Salah Sukkarieh from the Australian Centre for Field Robotics at the University of Sydney, Dr Peyman Moghadam from CSIRO Data61 and Jesse Reader, Agriculture Sector Specialist at Bosch Australia. The panel will be chaired by Wageningen University agrobotics specialist Erik Pekkeriet. With extensive knowledge of the research, development and commercialisation of field robotic systems, these panel members are sure to facilitate a robust discussion with the audience.

I strongly encourage growers to sign up for the Global Innovations in Horticulture Seminar, and levy-paying vegetable growers can also apply for funding to cover the costs of flights and accommodation to attend the seminar.

While we are looking forward to hosting international researchers and industry members in Australia, there is inherent value in growers travelling overseas to learn about new technologies and production processes in vegetable growing areas. This year, AUSVEG has already organised four successful Industry Leadership and Development Missions to New Zealand, the United States and Europe for Australian vegetable growers, including young growers and women in horticulture.

Looking ahead, AUSVEG and Apple and Pear Australia Limited have joined forces to lead a grower tour to the International Horticultural Congress in Istanbul, Turkey from 12-16 August. The Congress is held every four years and is set to offer an insight into the latest horticultural information and technology from around the world as well as local technical tours, where delegates can learn more about Turkey's horticulture industry.

I have attended international grower tours in the past and cannot stress the value they hold for participants, not only in terms of building knowledge but also in strengthening networks with other growers and international industry members. A once-in-a-lifetime experience for many, these international missions provide an avenue to expand your thinking and build sustainable relationships that will help to shape the future of the Australian vegetable industry.



Bill Bulmer

Bill Bulmer  
Chairman  
AUSVEG



James Whiteside

James Whiteside  
CEO  
AUSVEG

Recent Global Trade Atlas data suggests that the Australian vegetable industry is on track to reach its target of AUD\$315 million in fresh vegetable exports by 2020.

The target is aligned with the *Vegetable Industry Export Market Development Strategy 2020*, developed by Hort Innovation and AUSVEG to provide a pathway that will ultimately see vegetable exports increase by 40 per cent within four years.

Total fresh vegetable exports grew to a value of AUD\$252 million in 2017, an increase of 61 per cent in value over the past five years, at an average growth rate of 10 per cent per year, with our top markets being Singapore, the United Arab Emirates, Japan, Malaysia and Hong Kong. Carrots continued to be the best performing vegetable export in 2017, increasing to 110,000 tonnes at a value of AUD\$91 million. A lot of work is also being undertaken by AUSVEG and Hort Innovation to increase market access into more countries, which have tremendous potential to continue our consistent growth in fresh vegetable exports.

Through the AUSVEG Vegetable Industry Export Development program, we are working with growers to ensure they have the skills and knowhow to build their capabilities in export so they can capitalise on an increasing demand for fresh, Australian-grown vegetable produce.

One of the ways in which we do this is through facilitating the opportunity for export-ready vegetable growers to exhibit their produce as part of Hort Innovation's Taste Australia initiative, which promotes premium local produce to international markets. This occurred recently at Food & Hotel Asia 2018 in Singapore, the most comprehensive international food and hospitality trade show in the region.

I had the pleasure of attending this world-class event held from 24-27 April, alongside 13 levy-paying vegetable growers who displayed their produce at the trade show as part of an AUSVEG-led export development project. I was very impressed with the quality of produce on display as well as the initiative of growers who are taking the next step to expand their businesses and connect with key buyers in the Asia-Pacific.

On another note, after months of hard work and planning, Hort Connections 2018 is almost here. Hosted by AUSVEG and the Produce Marketing Association Australia-New Zealand from 18-20 June at the Brisbane Convention Centre, this three-day convention is set to be another successful event for the Australian horticulture industry.

We will be hosting a range of presentations from researchers, growers and industry members at the AUSVEG booth during the Trade Show. There will also be an opportunity to meet the AUSVEG team, and I strongly encourage any growers at the Trade Show to stop by and say hello, learn about our projects and raise any issues affecting our industry.

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# LETTUCE

## FACTS & DATA

**1** For the year ending June 2017, Australia produced 128,031 tonnes of head lettuce with a wholesale value of \$180.5 million. *Source: Australian Horticulture Statistics Handbook 2016/17.*

**2** Veggycation® states that one serve of lettuce provides 10 per cent of the Recommended Dietary Intake of water, folate, niacin and vitamin C.

**3** The Better Health Channel reports that the ancient Egyptians first used lettuce seed around 6,000 years ago to produce oil. Paintings and other images of lettuce have been found in ancient Egyptian tombs.

**4** *Project Harvest: Vegetable consumption in restaurants* (VG12078) reported that 17 per

cent of respondents to the 2014 study were dissatisfied with lettuce. The main reason was that too much of it is served (30 per cent).

**5** Harvest to Home found that in the 52 weeks ending 24 March 2018, 83 per cent of households purchased lettuce, at an average of 8.6 buying occasions per year. The average spend per shop in the time period was \$2.47.

**6** The majority of consumers eat lettuce raw, and served with tomatoes (87 per cent), capsicum (53 per cent) and cucumbers (52 per cent). *Source: Project Harvest Wave 42.*

**7** Seven per cent of consumers used lettuce when cooking a new recipe, according to *Project Harvest Wave 38* findings.

Additionally, lettuce consumption continues to be the most popular during lunch and dinner.

**8** Lettuce was originally viewed as a medicine and eaten after a heavy lunch to enable one to sleep off the experience. The white sap in lettuce contains compounds that can cause sleepiness – however this is also linked with bitterness and many modern varieties have been bred for reduced sap. *Source: Veggycation®*

**9** According to Veggycation®, lettuce can be divided into head lettuce, which is sometimes called iceberg, crisphead or standard lettuce. Leafy lettuce is loose leaf and has no heart. Other lettuce greens include endive, frisee and a host of salad greens.



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L-R: Donna Lucas and Clinton Muller from RM Consulting Group.

## VEGETABLE BIZCHECK OFFERS OPPORTUNITIES FOR GROWER-FOCUSED BENCHMARKING

A two-year pilot project that aims to develop a comprehensive benchmarking tool for Australian vegetable growers began in December 2017. Facilitated by RM Consulting Group, it will ultimately allow growers to compare their business processes and performance with typical industry figures and best practices from similar businesses.

Victoria's new vegetable business benchmarking project is well underway and will demonstrate the benefits of undertaking benchmarking to growers. Participants will easily identify business strengths and weaknesses, enabling them to make management decisions to optimise profit.

This project will pilot the RM Consulting Group (RMCG) BizCheck benchmarking approach across Victoria. The learnings from the pilot project delivered in Victoria will be used to understand the requirements for developing a benchmarking system that could be used in other states.

### PROJECT BACKGROUND

Vegetable growers have identified that increasing farm productivity and reducing costs are an industry priority. Despite a plethora of information available to growers about farm management, the diversity of vegetable industries and the lack of consistent farm information systems can make it challenging for growers to find what is relevant to them, and which practices or processes to implement (and how).

The benchmarking project will allow growers to connect the dots between their own business, and identify activities, practices or innovations that may be potential opportunities for their business.

*Vegetable business benchmarking – VIC (VG17000)* is a strategic levy investment under the Hort Innovation Vegetable Fund.

Vegetable farms were, and will continue to be, surveyed by the Australian Bureau of Agricultural and Resource Economics and Sciences regarding farm financial performance (Project VG15077), with the outputs from this work providing high level oversight into the national performance of the vegetable industry. This activity is distinguished from the new VG17000 project, which aims to provide actionable insights at the farm level for participating growers.

### IDENTIFYING BUSINESS STRENGTHS AND WEAKNESSES

There are two main aspects to the information that will be produced for growers who participate in the benchmarking project. The first is comparative business analysis, which analyses whole farm physical and financial performance and compares business data to typical industry figures. The other factor is benchmarking, which focuses on individual vegetable lines as well as the processes used on-farm.

Participating growers will have access to tools and support from the project that will allow them to know and understand their business productivity and profit drivers. Participants will be able to easily see where the opportunities are for their business, enabling them to make management decisions to optimise profit.

The benchmarking approach is designed so that data collection is straightforward and efficient – data collection will be gathered through a short meeting on the farm. Each participant will then receive a customised, concise report and support is available from the project team to interpret and discuss the findings.

All data will remain strictly confidential and individual businesses will not be identifiable in group or industry reports.

Project Manager and RMCG Senior Consultant Donna Lucas said that generating the numbers is not the main focus of this project.

"Interpreting the data and understanding 'why' is key to effective benchmarking. The focus is on using the results to make management decisions," she said.

### A POTENTIALLY SCALABLE SYSTEM

The project will also identify the demand for, and requirements of, a vegetable benchmarking system that can be scaled to other states as required.

The project will generate information that enables the industry to understand how it is performing as a whole. It will also generate information that enables:

- Increased access to relevant information for vegetable growers.
- Increased access to data and information to inform targeted research and development (R&D).
- Increased awareness and understanding of key profit drivers for vegetable production systems.

### INFO

For further information or to express interest in participating in the project, please contact Donna Lucas from RMCG at [donna@rmcg.com.au](mailto:donna@rmcg.com.au) or 0459 047 478.

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

Project Number: VG17000



Ladybeetles can build up on weeds beside a field. This amber spotted ladybeetle was attacking carrot aphid in weeds beside a brassica field. Carrot aphid is not a pest of brassicas but the ladybeetle could readily move into the crop and attack cabbage or green peach aphid.

## BOOSTING BENEFICIAL INSECTS ON VEGETABLE FARMS

A new levy-funded project involving research and horticultural industry groups is now underway, with a focus on promoting beneficial insects in vegetable crops. *Vegetables Australia* shares an update on what the project will involve, how it will work with growers and what it aims to achieve over the next three years.

Parts of the Australian horticulture industry have embraced the use of beneficial insects to control crop pests, but this has mostly been in the form of purchasing large numbers of beneficials for on-farm release. While this 'clean and green' approach is effective, it tends to be more costly than using insecticides. But what if there was a way to get beneficials working for you in your crops and controlling pests, virtually for free?

Internationally, farmers are exploiting recent research that shows what types of vegetation are useful as 'breeding grounds' for beneficial insects, mites and spiders, and from which the beneficials can be attracted into crops. Other farmers are manipulating the vegetation within and around crop fields to encourage beneficials to 'move-in' and act as guardians, ready to attack pests as soon as they arrive.

This form of biological control based on habitat management tends to be inexpensive because it avoids the need for growers to purchase beneficials and can be more effective than spraying insecticides. An example is the use of strips of flowering crops like sesame in the borders of Asian rice fields. This simple approach has proven so effective at boosting beneficials and suppressing pests that farmers are able to reduce insecticide use by two thirds, while grain yields have increased by five per cent. An overall 7.5 per cent economic advantage of this innovative approach has led to its adoption across wide areas of East Asia.

This project by the Graham Centre for Agricultural Innovation

and led by Geoff Gurr at Charles Sturt University, including researchers from The University of Queensland, New South Wales Department of Primary Industries and IPM Technologies, is now developing equivalent approaches for Australian vegetable growers. The teams are working with carrot, sweet corn, capsicum, bean and brassica growers across Australia for this levy-funded project to determine what types of habitat management are best suited to local conditions.

The project *Field and landscape management to support beneficial arthropods for IPM on vegetable farms (VG16062)* is a strategic levy investment under the Hort Innovation Vegetable Fund.

### USING HABITAT MANAGEMENT ON-FARM

Natural pest suppression can be achieved by managing vegetation around the farm to harbour and support beneficial insects. An easy way to plan this is to remember that the key things beneficials need are: Shelter, Nectar, Alternative prey and Pollen (also known as 'SNAP').

**Shelter** can be provided by bushland or riparian strips and is especially important during periods of extreme weather (hot or cold) or as refuge when spraying is necessary in crops. **Nectar** can be provided by sowing narrow strips of plants in field margins; potentially these can be a secondary crop. **Alternative prey** are important to feed beneficials during periods when there are no →



Caterpillar parasitoid.



Ladybeetle larvae. All images courtesy of S. Rizvi, CSU.

# NEED DRIP TAPE?

What you pick now determines what you pick later...

pests present and can be provided by strategies such as a strip of wheat beside the crop. The wheat can support cereal aphids that do not constitute a risk to vegetable crops but are great tucker for beneficials such as ladybeetles and lacewings. Finally, pollen is a protein-rich food that is especially important for hoverflies and, unless they are able to access this from patches of shrubs or herbaceous vegetation, they cannot reproduce.

While promoting beneficials using these 'SNAP' resources is potentially straightforward, there is a need for careful research. It is crucial to avoid using certain types of vegetation that might encourage pests.

An obvious example is that a cabbage grower will need to avoid brassica-family weeds that can support pest build-up. The research being conducted in this new project will also work closely with growers to identify habitat management strategies that are cheap and practical to adopt, and don't occupy too much valuable crop-growing area.

Other strategies to be considered include sequential planting so that beneficials can progressively move across a field from older to younger sections of crop, and mixing areas of crop species so that one provides SNAP resources to the second. Lucerne is potentially useful as a companion to vegetables because it supports many beneficials, but very few vegetable pests use it.

## HABITAT MANAGEMENT IN OVERSEAS VEGETABLES

Around the world there has been a groundswell of interest in the use of habitat management strategies to promote biological control of vegetable pests. In California, lettuce farmers plant strips of nectar-rich alyssum plants to encourage hoverflies, which provide control of currant lettuce aphids.

Elsewhere, lucerne stands near crops have been used to provide shelter to beneficial insects and also lure mirid bugs and other pests away from protected crops. In many studies, a mix of natural vegetation, shrubs and trees near fields provide shelter and food to beneficial insects. In Japan, many okra growers now use sorghum strips to provide alternative prey in the form of aphids to beneficials.

## NEXT STEPS

The research team is currently working with vegetable growers in New South Wales, Victoria, Queensland, Western Australia, South Australia and Tasmania, gathering information on the best options for habitat management. Starting later in 2018, the researchers will be conducting on-farm evaluations of the most promising approaches. In 2019, the team will move into promoting the superior forms of habitat management for each crop type and region.

Early results show evidence of 'edge effects', such that the abundance of pests and beneficials in vegetable fields is strongly affected by the nature of the neighbouring vegetation. This is promising. Encouraging vegetation that encourages beneficials, and removing or managing vegetation that supports pests, can deliver major benefits to growers. Surveys will continue to add information to the evidence base so that crop- and region-specific guidelines can be developed and promoted.

The research team will also be interviewing growers to better understand their needs and how current pest management strategies can be complemented by habitat management tools. This will ensure that the future guidelines are practical and easy to use.

## KEY BENEFICIAL INSECTS IN AUSTRALIAN VEGETABLES

Ladybeetles, lacewings and hoverflies will be familiar to many growers, but remember that the larvae ('grubs') look very different to the adults. It's worth becoming familiar with their appearance as they are voracious predators of pests such as aphids and small caterpillars.

The adults of all these beneficials feed on nectar and pollen, so providing flowering strips can be a powerful way of attracting them to your fields. The presence of these beneficials can keep aphid numbers from exploding in a crop – for instance, the common spotted ladybeetle can eat up to 2,400 aphids in its lifetime.

One particular aphid parasitoid *Aphidius colemani* lays its eggs inside the aphids including the green peach and cabbage aphid. A parasitised aphid (mummy) will have a darker colour and look balloon-like.

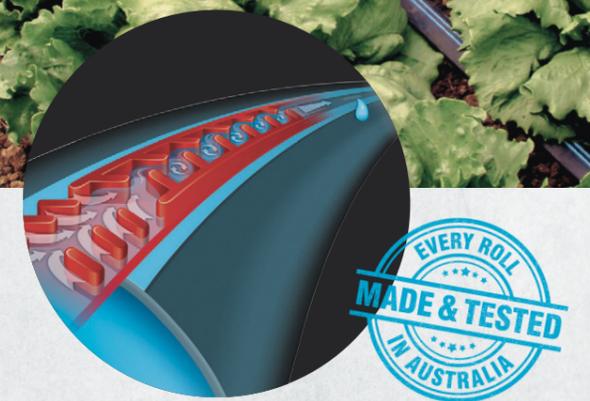
There are also a range of caterpillar parasitoids that will parasitise eggs (*Trichogramma*), larvae or pupae (*Diagama*).

Australian studies have shown that by using Integrated Pest Management (IPM), beneficial insects can kill 70 per cent of pests in the field and leave a marketable crop with no yield loss.

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## INFO R&D

This article was supplied by Geoff Gurr, Anne Johnson, Olivia Reynolds, Jianhau Mo, Syed Rizvi, Ahsanul Haque, Mike Furlong, Jessica Page, Scott Munro and Terry Osbourne. For more information, please contact Geoff Gurr at ggurr@csu.edu.au or 02 6365 7551.

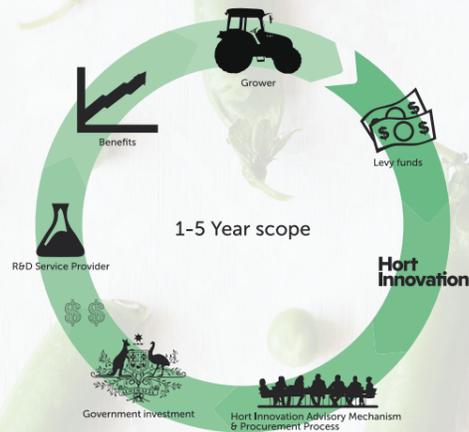
This project has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16062



# 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.

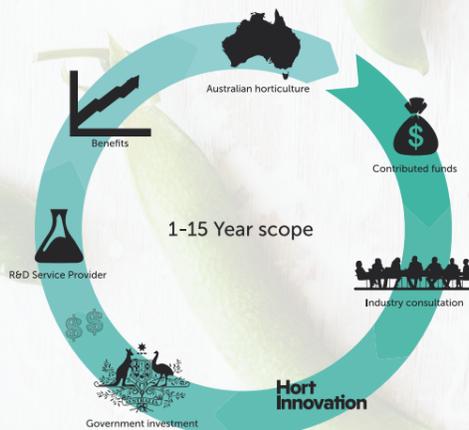
## HOW IS LEVY MONEY INVESTED?

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](http://horticulture.com.au/grower-focus/vegetable).

## HORT FRONTIERS



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](http://horticulture.com.au/hort-frontiers).

## HOW CAN GROWERS GET INVOLVED?

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

Ideas can be submitted directly to Hort Innovation through the online Concept Proposal Form at [horticulture.com.au/concept-proposal-form](http://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](http://horticulture.com.au)



## MEET YOUNG GROWER STEPHANIE CORRIGAN

I really enjoy the fact that we are providing such an essential service. Helping to feed the nation is pretty cool... My absolute favourite aspect of the industry is that I get to work both in the office and outside in the paddocks. Nothing beats being outside with nature. →



## FINESSING THE PERFECT VEGETABLE PRODUCT



**NAME:** Stephanie Corrigan  
**AGE:** 28  
**LOCATION:** Clyde, Victoria  
**WORKS:** Corrigans Produce Farms  
**GROWS:** Celery, celeriac, cos lettuce, leeks, kale, silverbeet, pak choy, onions

### HOW DID YOU FIRST BECOME INVOLVED IN THE VEGETABLE INDUSTRY?

My family has been farming for five generations. The farms have always been run by men until my mother Deborah Corrigan started working on-farm. She encouraged me to work in the family business and I am now the sixth generation.

### WHAT DOES YOUR ROLE AS MANAGER AT CORRIGANS PRODUCE FARMS INVOLVE, AND WHAT ARE YOUR RESPONSIBILITIES?

I am, and have been, involved in many aspects of the farm. These include marketing, crop trials and monitoring, logistics, sales, staff management, planting management and some quality assurance (QA) work. It is important that I understand all aspects to farming.

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

I really enjoy the fact that we are providing such an essential service. Helping to feed the nation is pretty cool. I also enjoy that there are always new and different things to do working on the farm, which keeps me enthused. With jobs that are boring or repetitious, I can lose focus quickly.

My absolute favourite aspect of the industry is that I get to work both in the office and outside in the paddocks. Nothing beats being outside with nature.

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

Like all things, there are always challenges that we need to face. They seem to change and sometimes multiply in the blink of an eye. But one challenge that currently comes to mind is finding and training efficient/effective employees. A lot of the younger generation have some sort of university background and have moved away from farming. I think there is a considerable number of young people who do not want to go to university and instead want to enter the workforce. Unfortunately, I feel like there is not a sufficient pathway for this group of people to see farming as a career.

In terms of training employees we overcome this by persistence, ongoing monitoring and creating different systems.

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

Growing up on the farm, I've had the opportunity to learn from family and senior employees. Most of what I know is learnt from my mother Deborah and my uncle, Darren Corrigan.

### YOU ATTENDED THE WOMEN'S INDUSTRY LEADERSHIP AND DEVELOPMENT MISSION WITH AUSVEG IN SEPTEMBER 2017. WHAT WERE THE HIGHLIGHTS OF THIS MISSION?

Having a backstage pass to the Asian fruit and veg industry was a massive highlight for me. We export to Asia, so getting to understand the consumer expectations and how their operations work has really helped me to picture where our produce will

slot into their market. We are currently exporting four different varieties of kale, celery, celeriac and silverbeet. Kale is very popular as an export line and we are getting really good feedback on our new kale – Finesse – which is exciting.

### IS THERE ANYTHING THAT YOU ARE PLANNING TO INCORPORATE ONTO THE FARM AS A RESULT OF ATTENDING THE TOUR?

Asia's packing sizes are small, so we have had to review our current sizing and what would be appropriate and appealing to export customers.

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

Innovation, marketing and technology.

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

We invested in an automatic leek harvester and leek washer. This has given us a huge edge in the leek market due to the efficiencies and savings of labour.

One of the issues that a lot of farmers and seed reps have is locating different varieties and trials of vegetables out in the paddock. When you plant hundreds of thousands of plants every week in different areas, it is easy not to mark these areas correctly, or at all. We love to trial new varieties, so it's important that you are able to find them.

You never know when you will find a new and exciting variety! By trialling that's how I found our new variety of kale – "Finesse."  
 All our planting staff now follow my labelling system.

### HOW DOES YOUR WEBSITE AND SOCIAL MEDIA ASSIST YOUR BUSINESS?

We do have a website, however we find we have way more interest in our Corrigans Farm Facebook page. Facebook is

so interactive; it's a great way to reach out to our customers to show who we are, what we do and let them know what we have growing. We use it to promote any new lines we have. We are also active on Instagram and have over 2,600 followers.

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

There are opportunities for growth in the Australian vegetable industry, however there are many obstacles we face. You would think with farming it would be the usual things like weather, loss of valuable farmland to urban encroachment, labour issues and pressure for low prices. It is all those things and more. On our farm we constantly seem to battle some new non-farming issues that keep coming up and taking valuable time away from farming. I believe that as farmers, we are largely ignored by governments and left to look after ourselves. This is fine; we have always done it. My fear is that if we are constantly thrown new obstacles, farmers will simply say it's too hard and leave the farming industry.

### WHERE DO YOU SEE YOURSELF IN FIVE YEARS?

Still on the farm. There is nothing else that I would want to do. Hopefully I would have had a few successful business endeavours that aid the business and its profitability.

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

Honestly, I do not know the answer to this – I just know it's a problem. Whenever I tell anyone outside of the industry that I'm a farmer, they are in disbelief but also very curious and excited to hear what sort of things I get up to. This is usually followed by the question of 'how does someone get into the farming industry?' I've heard this question so many times! The stereotype of a farmer is an old man in overalls, and most young people are stuck with this image. If we could re-invent the stereotype somehow, I believe the younger generation would consider a future in the industry.



Photography by Luka Kauzlaric.



Stephen Richards (right) from Farm Waste Recovery (FWR), welcomes Haifa Australia Managing Director Trevor Dennis and the company to FWR's stewardship program and recycling of fertiliser packaging.

## FERTILISER BUSINESSES COMMIT TO REDUCING PLASTIC WASTE

Responsible recycling of plastic fertiliser packaging is on the radar for many Australian fertiliser suppliers, and the Farm Waste Recovery stewardship program is assisting to collect these bags and ensure that they are disposed of appropriately.

Used fertiliser packaging has become a burden on the landscape and at landfill sites throughout Australia. To combat this issue, the Farm Waste Recovery (FWR) program commenced in September 2015 to efficiently manage packaging waste disposal for manufacturers, industry operators, producers and associations, as well as local councils.

Haifa Australia, one of the major suppliers of water soluble nutrients to the country's horticulture industries, has signed up to the program for the collection and recycling of fertiliser packaging and is encouraging other suppliers and commodity groups to jump on board.

The FWR stewardship program effectively helps companies to protect their brand and reputation, as well as maintain a strong commitment to the environment and their corporate and social responsibilities. The program sorts and collects manufacturer's bags for those involved in its stewardship program. Bags collected in south-eastern Australia are then processed in Geelong, while those collected in northern and Western Australia, where there are no local facilities, are processed in Asia.

By June 2016, FWR recovered more than 300 tonnes of plastic. In June 2017, this increased to more than 1,000 tonnes and so far this year, 1,700 tonnes have been recovered. FWR is targeting the collection of 600,000 bulk fertiliser bags this season, which would equate to 2,000 tonnes of plastic – enough to make 10,000 park benches.

### A NATION-WIDE CHALLENGE

FWR CEO Stephen Richards said bags were not manufactured in Australia, and across all industries 10 million bulk bags were imported every year, amounting to 33,000 tonnes of plastic. Most of the bags had either gone into landfill or were disposed of inappropriately.

"In some areas, we are now collecting 80 per cent of the bulk fertiliser bags that are sold," Stephen said.

Haifa Australia is one of the first specialty fertiliser suppliers to join other major companies in the FWR stewardship program and recycling of fertiliser packaging, including Impact Fertilisers and Incitec Pivot Fertilisers, which were involved in an initial successful trial of the program.

Haifa is a major supplier of potassium nitrate and has

had success in Australia with its Multi-K potassium nitrate, Poly-Feed soluble nitrogen, phosphorus and potassium formulas, and more recently, its specialist Multicote controlled release nutrition products. It distributes in all states through the country's major horticultural suppliers and pastoral houses.

### PROGRAM BENEFITS

Haifa Australia Managing Director Trevor Dennis said the company was pleased to sign up to the FWR stewardship program and recycling of fertiliser packaging to protect its brands and, importantly, the environment.

"The recycling program will help to reduce landfill and also create Australian jobs," Trevor said.

In his role as a board member of Fertilizer Australia, Trevor recently convened a meeting with other specialty fertiliser companies, encouraging them to join the program and help address the issue of mounting fertiliser packaging in landfill. He also recently met with almond company Select Harvests Operations Manager Jason Robinson. The almond industry is showing strong interest in the program and there is potential for large commodity groups like the almond sector to have their own FWR collection sites.

Stephen said he was thrilled Haifa had joined FWR and was looking to seize the benefits of the program for the horticulture industry.

"We are hoping to expand to as many organisations as possible and we are looking to work strongly with commodity groups for the benefit of their members," he said.

### INFO

For more information, please visit [haifa-group.com](http://haifa-group.com) or [farmwasterecovery.com](http://farmwasterecovery.com).



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Adult melon thrips. Image courtesy of J. Guyot INRA Pointe-à-Pitre, Bugwood.org.

## MELON THRIPS UNDER THE MICROSCOPE

In this edition of *The Front Line*, AUSVEG Biosecurity Officer Madeleine Quirk interviews Dr Siva Subramaniam – a Senior Entomologist based at Bowen Horticulture Research Station for the Department of Agriculture and Fisheries, Queensland – about the biology, ecology, distribution and management of melon thrips.

### REDUCING THE RISK THROUGH RESTRICTED AREAS FOR INTERSTATE MARKET ACCESS

There are two Restricted Areas for melon thrips in Queensland: north Queensland, which extends from Cooktown south to Bowen; and south-east Queensland, which extends from Seventeen Seventy south to the Gold Coast. Both Restricted Areas extend around a 100 kilometre radius from points of melon thrips detection.

South Australia, Western Australia and the Northern Territory restrict entry of known melon thrips hosts coming from within Queensland Restricted Areas. However, produce can be moved freely within the state.

In the Northern Territory, restrictions apply for various produce travelling south from Darwin past the Adelaide River. Visit [interstatequarantine.org.au](http://interstatequarantine.org.au) for more information.

Over the past 20 years, Dr Siva Subramaniam has been working on insect pest management research and extension activities in vegetable crops. One such insect is melon thrips (*Thrips palmi*). Melon thrips are plant pests that affect a number of vegetable crops and although they have restricted distributions in Australia, it is important that their spread is limited.

### WHAT ARE MELON THRIPS?

Melon thrips are small, cigar-shaped insects which are yellow-orange in colouration. Adult melon thrips are about 1-1.5 millimetres in length and have two pairs of feather-like wings with black hairs along the fringe, which resemble a black line running along the back of the body. Juveniles are smaller (0.8-1mm) and are paler in colour and wingless.

### A WIDESPREAD AND CLIMATICALLY ADAPTED PEST

Melon thrips appear to have originated in southern Asia but are now widely distributed throughout South East Asia, Japan, Florida, the Pacific region, many Caribbean islands and now, some parts of Australia.

"In Queensland, melon thrips populations have established in Bundaberg and Lockyer Valley production regions," Dr Subramaniam said.

Melon thrips have been in Australia for more than 28 years. They were first recorded in the Darwin area of the Northern Territory in 1989 and Queensland in 1993, and have since been found in various parts of Queensland. They were also detected in the Ord River Irrigation Area (ORIA) of Western Australia in 2001.

Dr Subramaniam noted the pest's climatic preferences.

"Melon thrips are widely established in tropical and sub-tropical environments. However, they may have the potential to spread further to temperate regions," he said.

### HOST RANGE AND DAMAGE

According to Dr Subramaniam, melon thrips can feed on over 100 plant species, representing over 30 families. The pest attacks a wide variety of crops including green beans, capsicum, chilli, cucumber, eggplant, melons, pumpkin, squash and

zucchini. Dr Subramaniam also outlined the severe physical damage that the thrips can inflict on these host crops.

"Melon thrips cause damage to commercial crops both as a direct result of feeding and from their ability to vector tospoviruses. The pest has a rasping and sucking mouthpart and damages plant surface tissues with the mouthpart during feeding," he said.

Melon thrips can transmit capsicum chlorosis virus (CaCV) and they are also an efficient vector of tospoviruses in the watermelon silver mottle virus or serogroup IV tospoviruses, of which CaCV is a member. This group of tospoviruses are widespread throughout India and the wider Asian region.

However, the damage varies between low and high levels of infestation.

"In heavy infestations, plants show silvered or bronzed patches on the foliage, stunting of young leaves and terminals, with scarred or deformed fruits. At low levels of infestations, the symptoms are not clearly noticeable in the field," Dr Subramaniam said.

### ECONOMIC LOSSES FOR VEGETABLE GROWERS

Populations of melon thrips have established in south-east Queensland production areas where high numbers occur from March to July.

Economic losses are often reported in capsicum, chilli, cucumber and eggplant. In commercial crops, market losses tend to occur due to blemishes caused by thrips on the fruit surface. In the Bowen-Burdekin production regions, there are no records of the establishment of melon thrips.

However, growers continue to implement management practices to control other thrips (including western flower thrips and tomato thrips).

### MANAGING THE PEST IN INFESTED REGIONS

To Dr Subramaniam's knowledge, the control of melon thrips should be based on a well-designed integrated management program for both indoor and field vegetable crops.

"This program should include regular monitoring for making appropriate decisions and implementation of best farm practices; biological and chemical controls and efficient spray application methods," he suggested.

Visual inspection and sticky traps are also key to the control of melon thrips.

"Adult thrips may be found on the leaves, flowers and fruits. During visual monitoring for the presence of thrips, attention must be paid to silvery feeding scars on the leaf surfaces. The blue or yellow sticky traps are generally used for monitoring thrips activity," Dr Subramaniam said.

### INFO R&D

For more information on pest management strategies, visit [daf.gov.au](http://daf.gov.au).

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 Biosecurity Officer Madeleine Quirk on 03 9882 0277 or [madeleine.quirk@ausveg.com.au](mailto:madeleine.quirk@ausveg.com.au). The Vegetable and Potato Biosecurity Program is funded by the Plant Health Levy.



## 'MOCK' SURVEILLANCE PREPARES GROWERS FOR POTENTIAL ARRIVAL OF VEGETABLE LEAFMINER

A new levy-funded project focusing on the vegetable leafminer (*Liriomyza sativae*), which commenced in 2017, was established in recognition of the impact that the pest could have on the vegetable and nursery industries if it was found in Australian production regions.

The project, *RD&E program for control, eradication and preparedness for Vegetable Leafminer (MT16004)* is a strategic levy investment under the Hort Innovation Nursery and Garden Fund and Vegetable Fund.

In March 2018, representatives from Cesar, the University of Melbourne and AUSVEG conducted a mock surveillance activity with growers from south-eastern Victoria. This first-of-its-kind trial aimed to assess the amount of effort necessary to spot vegetable leafminer damage in a row of spinach.

The activity reiterated the importance of implementing on-farm biosecurity best practice to reduce the spread of plant pests and diseases. All involved in the surveillance exercise were required to wear protective boot covers to avoid spreading organic matter from their shoes to the field. The biosecurity kit also contained gloves and hand sanitiser.

Farm biosecurity planning has a direct benefit on plant production and plant health, which means higher value produce and reduced input costs. Please contact AUSVEG Biosecurity Coordinator Callum Fletcher or Biosecurity Officer Madeleine Quirk on 03 9882 0277 for more information about farm biosecurity planning.

### INFO R&D

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

Project Number: MT16004

Hort  
Innovation



Automated machinery using high-pressure water jets to harvest cos lettuce in Yuma, Arizona.



Blueberry growers Lisa and David Hill (far right) met with participants at Southern Hill Farms in Clermont, Florida.

## AUSSIE GROWERS GET A TASTE OF THE STATES, FROM EAST TO WEST

Earlier this year, a group of Australian vegetable growers attended a two-week industry leadership and development mission to the United States, where they visited growing operations, researchers and agribusinesses in Arizona, California and Florida. Dimi Kyriakou shares some highlights from the tour.

The biggest vegetable growing regions of the United States were the destinations of choice for a group of nine Australian vegetable growers who travelled to Arizona, California and Florida as part of the 2018 USA Industry Leadership and Development Mission from 3-17 February.

The two-week tour, led by AUSVEG, allowed participants to develop their networks and compare horticultural production on the east and west coasts of America, providing a clearer insight into industry nuances, production practices, new technologies and issues facing growers in the United States.

The project *2018 U.S.A. Industry Leadership and Development Mission* (VG15702) is a strategic levy investment under the Hort Innovation Vegetable Fund.

### SEVEN MISSION HIGHLIGHTS

- 1. Duncan Family Farms – Buckeye, Arizona:** The mission kicked off with a visit to Duncan Family Farms, which produces more than 8,000 acres of certified organic baby lettuce, and green kale, beets, chard and herbs near Phoenix, Arizona. Participants toured the operation, which creates its own compost to maintain a quality product and limit potential food safety issues, as well as divert local green waste that would otherwise go to landfill. The farm has also introduced falconry, using a team of trained falcons to intimidate and chase nuisance birds away from the crops without harming them.
- 2. Automated Harvesting Company – Yuma, Arizona:** As Yuma buzzed towards the end of its leafy green production season, the group visited the Automated Harvesting Company, a division of Taylor Farms. This meeting showcased the potential of technology on-farm, as growers watched automated machinery use high-pressure water jets to harvest cos lettuce – at that stage it was harvesting 12 acres per day – which was then transported to a working platform on the machine where it was packed by hand. This system was developed to create a better environment for workers and improve productivity.
- 3. The Growers Company – Yuma, Arizona:** While in Yuma, participants met with farm labour contractor The Growers Company, which manages and provides transport for around 40 harvest crews, consisting of around 25 workers each. Given the current labour shortage in America, the majority of these workers are sourced from Mexico as they are skilled, efficient and hard-working, with many crossing the border early in the morning for work and returning late in the evening. At the end of Yuma's growing season, The Growers Company transports its machinery north to the Salinas Valley for summer production.

- 4. Southern Hill Farms and Billy Long Packing House – central Florida:** Blueberry production was a highlight for many participants during their visit to Florida. The group visited Southern Hill Farms, which has successfully introduced an agritourism component to the business, creating a winery-style experience for visitors to harvest blueberries as part of its 'U-Pick' program. Participants also toured the Billy Long Packing House, which packs and markets blueberries for several local growers. Its point of difference is that it uses four marketers under one packing house to deal directly with retailers.
- 5. Taylor Farms – Salinas, California:** Taylor Farms is one of the largest producers and processors of salad and vegetables in the United States, with a 16-day shelf life for its products. Participants were fortunate to receive a behind-the-scenes tour of its salad processing facility in Salinas, which receives nearly 16,000 tonnes of product every week. The visit highlighted the unimaginable scale of the salad processing facilities required to meet consumer demand in the United States.
- 6. Bayer Biologics – Sacramento, California:** In California's state capital, participants visited the global headquarters of Bayer Crop Science, a division of Bayer Biologics, which is dedicated to innovative biological pest management solutions. Growers were given an overview of the product Serenade Prime, developed from beneficial bacteria, and toured the biologics production facility. Participants also met with scientists to discuss their key on-farm challenges and areas where crop chemistry can assist the Australian vegetable industry.

- 7. World Ag Expo – Tulare, California:** With 1,480 exhibitors and around 2.6 million square feet of exhibitor space, there was plenty to see at the world's largest annual agricultural expo. With anything and everything relating to agriculture on display, growers enjoyed the opportunity to meet with farm equipment manufacturers and in some cases, order products that are difficult to source in Australia. Strong networks were developed within the group as well as the growers, researchers and agribusinesses that participants met while in the United States. Upon their return, participants will continue to disseminate the learnings and knowledge gained from the tour with the wider Australian vegetable industry.

### INFO R&D

AUSVEG would like to thank those who gave their valuable time to meet with the delegation, particularly Western Growers, Imperial Valley Vegetable Growers and Florida Fruit and Vegetable Growers for their assistance in organising farm visits and stakeholder meetings. A full project report will be made available on the InfoVeg website in the coming weeks at [ausveg.com.au/infoveg](http://ausveg.com.au/infoveg).

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

Project Number: VG15702



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## SUPPORTING FARM BUSINESSES IN FAIR EMPLOYMENT PRACTICES

The Fair Farms Initiative fosters good employment practices across the Australian horticulture industry to ensure that workers are treated fairly while they are employed in fruit or vegetable farms and pack houses. Facilitated by Growcom, the initiative is now in its second year.

Growcom's Fair Farms Initiative supports growers with the tools and knowledge to ensure their employment systems comply fully with workplace relations laws – and demonstrate this to customers and the wider community.

Fair Farms delivers grower workshops, provides informative articles for industry magazines, and is progressing a market recognition scheme for fair employers. A national award to celebrate and showcase employment excellence in the industry is also planned, commencing in 2019.

### ARE YOU ACROSS YOUR LEGAL REQUIREMENTS AS AN EMPLOYER?

Fair Farms workshops provide growers with a comprehensive overview of their legal requirements as employers and how to put this into practice in their farm business. Past participants have consistently rated the sessions as a nine or 10 out of 10.

During March and April, Horticulture Workplace Relations Specialist Donna Mogg delivered a number of 'Getting Fair Work Compliant on farm' workshops in the Northern Territory and Victoria. Another round of workshops will be delivered in Western Australia between 21-25 May.

The interactive sessions help grower-employers understand their legal obligations and level of compliance, and provide an opportunity to discuss specific risks and solutions.

The workshops also look at practical ways to manage employment issues that commonly arise in fruit or vegetable businesses such as applying a robust induction process, encouraging workplace safety, ensuring fairness and equity in all staff dealings, and how to avoid unfair dismissal claims.

For details of the Fair Farms workshops in Western Australia, contact vegetablesWA Operations Manager Rebecca Blackman on 08 9486 7515 or email [rebecca.blackman@vegetableswa.com.au](mailto:rebecca.blackman@vegetableswa.com.au).

### INDUSTRY STAKEHOLDERS HELP SHAPE FAIR FARMS MARKET RECOGNITION SCHEME

An important element of the initiative is the development of a mechanism for fresh produce production and packing businesses to demonstrate to their customers that their employment practices are fair and comply with Australia's Fair Work laws.

The Fair Farms team is working closely with industry stakeholders to build a practical market recognition scheme for fair employers.

The development of the scheme is timely. There is an increasing

global public focus on ethical supply chains and 'modern slavery'. In Australia, there has been significant media coverage of underpayment, exploitation or mistreatment of workers on farms and food packing or processing facilities. Social media also provides a forum for current and past farm workers to share their experiences.

Australian retailers have responded by adopting responsible or ethical sourcing policies and are considering how these will be implemented with their fresh produce suppliers.

We are liaising with Coles, Woolworths and ALDI to ensure the proposed Fair Farms market recognition scheme clearly aligns with their requirements. The retailers have indicated their willingness to collaborate with industry towards the development and piloting of the Fair Farms scheme as a means for fresh produce suppliers to demonstrate their sound employment practices.

Currently, the Code of Practice for the scheme is being finalised. Growcom's Hort360 Workplace Relations module, which addresses Australia's Fair Work laws and relevant Awards, provides the foundation for the Code. Further elements to address priority matters identified within retailers' policy statements will also be included.

Mechanisms for verifying on-farm practices are also being developed. The scheme will incorporate self-assessment options through to independent verification and certification through Freshcare. Businesses can select the option that best suits their own needs and the requirements of their customers.

The entry stage of the scheme is an online self-assessment of the business' workplace relations practices, generating a report of the business' level of compliance with the Code. If the report recommends further training, options will include individual business consultation, group training or customised sessions for growers who work with major suppliers. Training will be delivered through Growcom and a network of approved trainers.

The scheme will be piloted with a number of farm businesses to ensure it delivers fairness for workers, assurance to customers and the community, and a practical process for growers.

To find out more, see the Fair Farms team at the Hort Connections Trade Show at the Brisbane Convention Centre from 18-20 June.

#### INFO

To register your interest in a Fair Farms workshop or Hort360 workplace relations risk assessment for your business, contact Rebecca Myers at Growcom on 07 3620 3844 or [rmyers@growcom.com.au](mailto:rmyers@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.



Sam Turner  
Relationship Manager  
Hort Innovation

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

Sam is keen to chat with you. He is your link to the latest R&D developments and how these can help your business grow. It's easy to request a phone call – just go to the 'Contact Me' form at [horticulture.com.au/contact-me](http://horticulture.com.au/contact-me). Alternatively, call 02 8295 2300 or email [membership@horticulture.com.au](mailto:membership@horticulture.com.au) and let us know you would like Sam to call you.

[horticulture.com.au](http://horticulture.com.au)

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Gary and Angela Spotswood with their son Daniel.



Photography by Fiona Lake

## INNOVATION AND AUTOMATION: THE WAY OF THE FUTURE FOR ORGANIC VEG GROWER

Third-generation farmer Gary Spotswood is full of ideas and his passion for the land is unwavering. Gary runs a mixed farm in far-north Queensland, which includes a seasonal organic vegetable growing operation. He spoke to Michelle De'Lisle about his journey to becoming certified organic, the challenges it presents and his philosophy on soil health.

Gary Spotswood is a big thinker – always thinking of ways to add value to his growing operation and integrate practices that benefit all facets of the farm, whether it be sugar cane, cattle or organic vegetables.

A third-generation farmer, Gary and his wife Angela run Mt Alma Fresh Organics, located in the Burdekin Shire town of Inkerman, 80km south-east of Townsville in northern Queensland. The pair own 430 hectares of land that produces organic beef, organic vegetables (including zucchini, seedless watermelon, chillies and pumpkin), mango and organic sugar, as well sugar cane under conventional farming.

After dabbling in vegetables for over 15 years, Gary and Angela decided to increase their production in 2010 and Mt Alma Fresh Organics became fully certified as an organic vegetable grower in 2015.

### FOLLOWING AN ORGANIC PATH

The decision to move to organic farming practices was influenced by a friend of Gary and Angela's, Wayne Shields from Peninsula Fresh Organics in Victoria.

"We looked at a way of value-adding what we're doing here. Instead of getting a bigger farm, we diversified by having a few different lines of organic and it all flowed on with soil health, and all the other benefits," Gary says.

The business would have been certified earlier, but Gary says that as farmers and not fans of paperwork, they took a while to submit their application to become an organic growing operation.

Once they did, it was a three-year process: the first year was pre-certification, followed by two years of conversion before produce was accepted into the supermarket chains.

Now, Mt Alma undergoes stringent chemical-residue testing of its soils along with annual audits for three organisations – Australian Certified Organic, the United States Department of Agriculture and Freshcare.

Being an organic vegetable grower does present its challenges, particularly in northern Queensland, as Gary explains.

"In the north, we actually do find our window for organic vegetable growing is a lot smaller than the conventional system," he says.

"We have a lot more tools in the toolbox, but if you have a chemical system you can prolong the season later or earlier. With an organic system, we get to grow more within our seasonal window and don't try to push the boundaries; but as we improve the soil health, the crop becomes healthier and stronger in its own regard."

Mt Alma's organic vegetable growing season begins in mid-May until October. This is followed by mangoes at the end of the year.

Given Mt Alma Fresh Organics is an integrated farm, Gary believes in having 100 per cent ground cover. If there is bare ground, a legume crop or a multi-species crop is planted.

"We use the cattle on part of our certified organic land to do the organic mulching. We bring them through high density grazing on our land, and that's an easy way of composting," he says.

"We also buy-in chicken manure pellets, and blood and bone pellets – in a horticulture system, it's a very fast season and it's

very hungry. We can't produce enough inputs on-farm as of yet, so you still have to supplement the soil."

Another key to healthy soil is organic carbon, Gary says.

"If we increase our organic carbon in our soil by one per cent, we'd actually store 144,000 litres of water per hectare more in our soil that doesn't runoff," he says.

"That's plant-available water, so I look at our focus on the holistic part of it now – and that is to increase organic carbon in our soil. By doing that, we store more water; we reclaim more nutrients; and we use less electricity to pump water. It's a win-win. Our main focus on anything we do is to improve organic carbon – whether we're organic or conventional – and how we can utilise everything in our system."

Gary sees soil health as "the next frontier for everyone".

"If we focus on soil health, we'll improve a lot of our supply chain issues. That gives us suitable, better quality fruit and vegetables, a longer shelf life through soil health and improving a better mineral balance using natural inputs – and that's probably on the organic side that I push a bit more."

### GROWER ON A MISSION

Gary's mind was opened to the rest of the world in February when he attended the Berlin Fruit Logistica trade show as part of the 2018 *European Industry Leadership and Development Mission* (VG15701), a strategic levy investment under the Hort Innovation Vegetable Fund.

"You can see the way the industry is heading in the robotic department; for example robotic weeders – new technology in the way of combating weeds and beneficials. We found it very interesting."

As a result, Gary is considering trialling a robotic weeder to help reduce labour costs.

"We've got to start automating things. I've found that the highly technical side in Europe seems a lot more advanced. We're only trialling things out here that they've been using for the last five years or so, and it seems common practice in Europe," he says.

Additionally, Gary found great benefit in the networking opportunities presented on the mission.

"There were growers from Victoria to South Australia and

Brisbane – all at different stages of growth. It was quite good; there was three organic growers on the tour and four conventional, so we had quite a good discussion," he says.

"I think that's probably more important (networking within Australia) because we're still a small industry; we can leverage between ourselves to create those export markets. We need that supply chain to grow all the way from north Queensland to Victoria to meet a year-round supply."

### PRIDE OF PLACE

Gary's family has been farming in the Burdekin region for almost 100 years, and it is this rich history that he is most proud of.

There have been numerous changes to the business landscape, and the demand for organic vegetables is growing. To maintain that steady supply, Mt Alma Fresh Organics employs workers from the Solomon Islands through the Seasonal Workers Programme. Each year, these workers return to Australia to assist Gary and Angela.

"We've found that the seasonal workers are here for six months and we can train them to our practices. We know that they can come back every year and they're used to the system," Gary says.

The future of the farm and who will take over as the next generation is currently unclear. Gary and Angela's 19-year-old son, Daniel, is currently completing a Certificate III in Horticulture and Agriculture. While a takeover has been discussed, there is no pressure on Daniel, or on Gary and Angela's daughters Chloe and Rochelle, who are both working in other industries interstate, to follow in their father's footsteps.

Gary notes that today's farmers don't just have to be driving tractors, as there are now so many diverse roles needed in the industry – from drone pilots to quality assurance to robot weeder programmers.

"It's available for anyone and if no one wants it just yet, so be it. It's still going to be here as part of their family history, that is certainly clear," Gary says.

"I feel we're losing that in the shape of family farms; we've got to bring them back into flavour again. Family farms are the most economical ones that can keep surviving compared to a corporate operation."



Growers discuss water availability in Stanthorpe, Queensland.

## EXTENSION SPOTLIGHT ON SOUTHERN QUEENSLAND AND GIPPSLAND

In this edition, Southern Queensland Industry Development Officer Pat Salter and his Gippsland counterpart Shayne Hyman provide an update of R&D workshops in their regions, and future events occurring through the National Vegetable Extension Network (VegNET). VegNET is a strategic levy investment under the Hort Innovation Vegetable Fund.

### SOUTHERN QUEENSLAND

As we roll into 2018, the Southern Queensland region of VegNET is focusing on facilitating a number of training/workshops from current levy-funded research and development projects, which are designed to continually broaden and strengthen the vegetable industry.

With the delivery of the young grower tour in 2017, we are still seeing a significant amount of collaboration with the next generation of growers – not only within their own growing regions but also branching out into other areas. In March 2018, the Stanthorpe region extended an invitation to the growers of the Fassifern and the Lockyer Valley to attend farm tours across the region. This experience provided an insight into the different farming practices between the regions and addressed the limitations that the growers face in Stanthorpe.

Under the VegNET project, the Lockyer Valley Growers Inc. is investing time in facilitating the delivery of best-known practice training programs to all horticultural growers within the region. This initiative is driven by growers directly due to their hunger to expand their knowledge and remain current with the latest research. In collaboration with Hort Innovation and the VegPRO project, the industry can assist with the delivery of a flexible training calendar for the region.

### FUTURE EVENTS IN THE REGION IN MAY AND JULY

- Industry workshop for Logan growers, focusing on building resilience within their businesses and bouncing back after a significant weather event. This workshop is being supported by Growcom, Rural Solutions Queensland and other industry partners and will be held in May 2018.
- Lockyer Valley Growers' barbecue is scheduled for 16 May 2018.
- Chemical handling training for the Stanthorpe region and VegInnovation 2018 Regional Roadshow for the Lockyer Valley is scheduled for July 2018. Both of these events are being delivered under VegPRO.

For more information on future events in the region, please contact Industry Development Officer – Southern Queensland Pat Salter on 0456 956 340 or email [ido@lockyervalleygrowers.com.au](mailto:ido@lockyervalleygrowers.com.au).

### GIPPSLAND

Vegetable growers across Gippsland, from Phillip Island's hydroponic producers through to those growing murrong

around Mallacoota and every other grower in between – are warmly invited to get involved in Gippsland's 'year of training' for the vegetable industry. VegNET Gippsland is working side-by-side with VegPRO, the vegetable industry's national training initiative, to deliver the first class training that growers have been asking for at no cost. This training will be funded by the vegetable research and development levy and contributions from the Australian Government.

March and April saw the Horticulture Code of Conduct Information Sessions run in Lindenow and Maffra while Irrigation Basic Skills Training was held on-farm at Newry, and a HARPS Awareness Session for growers across Victoria was staged at the Melbourne Markets in Epping.

### More to come in May and June

- Communication by influencing and negotiating over two full days – Thursday 31 May and Thursday 7 June at Sale (venue TBC).
- Chemical handling for southern Gippsland at Wonthaggi (venue TBC) over two full days – Tuesday 5 June and Wednesday 6 June.
- Postharvest Management of Vegetables for eastern Gippsland at Lindenow (venue TBC) and for southern Gippsland on Wednesday 4 July (location TBC).

Also, don't forget all the learning that takes place at Hort Connections 2018 in Brisbane from 18-20 June!

### FURTHER TRAINING OPPORTUNITIES

July and August won't disappoint with the rollout of training in process mapping in eastern and southern Gippsland, chemical handling in Lindenow, pest and disease in baby leaf vegetables, and the much sought-after VegInnovations workshop in Sale.

The second Gippsland Women in Horticulture Advance will be held in the Latrobe Valley on Thursday 23 August.

It's time to mark the dates in your mobile calendar, work planner or personal diary, then watch out for details on how to register in VegNET Gippsland's monthly eNews. You can also call Industry Development Officer Shayne Hyman on 0417 330 081 or send an email to [shayne.hyman@eastgippslandfoodcluster.com.au](mailto:shayne.hyman@eastgippslandfoodcluster.com.au) to subscribe to the newsletter to find out more information.

### 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](mailto:adam.goldwater@ahr.com.au).

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

Project Number: VG15049



Growers pictured observing a capsicum crop at Kirra Pines in Queensland.



Capsicums in a packing shed in Queensland.



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# FOUR WEEKS TO GO!

## THREE DAY CONFERENCE

Hort Connections 2018 will bring together presentations from expert thought leaders, a busy social program as well as an expansive Trade Show across three days, from Monday 18 June to Wednesday 20 June.

Keynote speakers at the event include National Farmers' Federation President **Fiona Simson**, who will discuss the importance of a unified voice in Australian agriculture. Global futurist **Chris Riddell** from the United Kingdom will present delegates with his insights on emerging trends from around the world while **Drew Yancey** from the United States will discuss efficiencies in the fresh produce and cold chain industry.

## RECORD NUMBER OF DELEGATES

Over 3,000 local and international delegates are expected to attend Hort Connections 2018 at the Brisbane Convention Centre. Located in the heart of South Bank and its cultural precinct, the convention centre can be accessed via public transport, with bus, ferry and train options available.

## ONE THEME

For the first time, a theme has been incorporated into Hort Connections. This will dissect two key horticulture industry issues – **Doubling productivity and halving waste by 2030**.

In keeping with the theme, local and international speakers have been carefully selected for the event. These highly engaging presenters will cover an expansive range of topics to suit all areas of the horticulture sector, including improving profitability and sustainability through improved water and resource use efficiency; developing new tools and approaches to managing pollination in production ecosystems; and a focus on greater use of fruit and vegetables as healthy and functional ingredients in a range of food products.

## 19 INDUSTRY PARTNERS

Once again, AUSVEG has partnered with the Produce Marketing Association Australia-New Zealand (PMA A-NZ) to host Hort Connections 2018.

There are six major partners of this event: Hort Innovation, Bayer, Syngenta, CHEP, Corteva Agriscience™ Agriculture Division of DowDuPont™ and Woolworths. In addition, nine industry co-hosts have joined Hort Connections 2018, including Growcom, Onions Australia, Australian Organic, Apple and Pear Australia Limited, Nursery and Garden Industry Australia, Protected Cropping Australia, United Fresh New Zealand Incorporated, 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.



**HORT CONNECTIONS** 18-20 June 2018  
Brisbane Convention Centre



## 300 TRADE SHOW BOOTHS

Held in conjunction with plenary sessions is the Hort Connections 2018 Trade Show. This year it will attract a record number of exhibitors, with almost 300 booths showcasing the latest on offer in industry technology, innovation and services. Don't miss the Trade Show Networking Hour, which will be held from 5-6pm on Tuesday 19 June.

## GLOBAL INNOVATIONS IN HORTICULTURE SEMINAR

Returning in 2018 is the Global Innovations in Horticulture Seminar. Speakers will include **Erik Pekkeriet**, a Senior Project Manager in Agro Food Robotics at Wageningen University and Research in the Netherlands and bioengineer **Nicolas Tsurakawa** from Urban Crop Solutions. **Sandon Adams** leads the Australian business for Oritain Global Limited and is passionate about adding value in Australia and agri supply chains. A global expert in the vegetable seed industry, **Kevin Walsh** from Monsanto Vegetable Seeds has extensive experience in connecting research projects to commercial field systems while **Dr Michael Manion** from Keon Research is an inventor, scientist and entrepreneur.

The Global Innovations in Horticulture Seminar will also feature a panel of three speakers who will discuss the gaps in the market slowing down the expansion of Australian agrobotics on a more commercial scale, as well as conversation around where there might be research gaps or speed bumps to progress.

Erik Pekkeriet will be leading the conversation with panel members including Professor **Salah Sukkarieh** from the Australian Centre for Field Robotics, who is an international expert in the research, development and commercialisation of field robotic systems. Bosch Australia Agriculture Sector Specialist **Jesse Reader** is an accomplished agronomist with 15 years' experience in horticulture, while **Dr Peyman Moghadam** is the AgTech Cluster Leader at the Autonomous Systems, CSIRO Data61 and leads the transition of innovative technologies into farms.

This seminar is funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

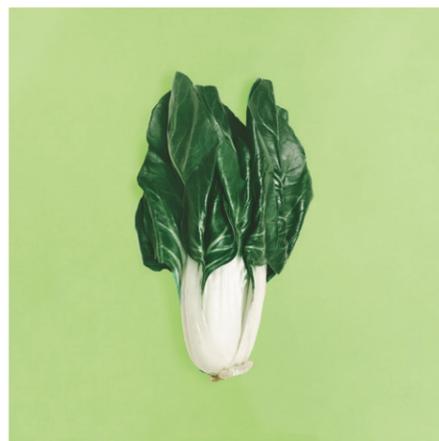
## A FRESH PERSPECTIVE ON WOMEN IN HORTICULTURE

All delegates are invited to a special series of events at Hort Connections on Wednesday 20 June to support diversity, inclusion and women in leadership.

Join the PMA A-NZ Fresh Perspectives – Effecting Change session from 1:30pm to 2:30pm for a peer-to-peer discussion on diversity, inclusion and leadership, and receive tangible tools to help effect positive change in your workplace.

The Women in Horticulture session will follow from 2:30pm to 3:30pm, where you can hear from three inspiring women about their work, their lives, and the crucial roles women perform in rural and regional communities around Australia. Speakers include **Rachael Robinson**, the youngest-ever person to lead an expedition to Davis Station in Antarctica, as well as ABC *Landline* host **Pip Courtney** and **Liza Dale-Hallett** from Museums Victoria, who will be speaking about the ground-breaking Invisible Farmer project.

Afterwards, delegates can enjoy a collaborative networking session in the lead-up to the capstone event of Hort Connections 2018: the National Awards for Excellence Gala Dinner.



# The biggest bird threatening your crops: the phoenix

Beware of phoenix operators

The Australian Taxation Office (ATO) and other law enforcement agencies are warning Australian growers about illegal phoenix companies.

The phrase is borrowed from mythology and describes a bird which erupts into flame when it dies, only to arise from the ashes. It's an apt description for a phoenix company which systematically accrues debts only to deliberately liquidate to avoid paying them. The company then sets up shop again under a new name—completely debt free.

Companies who engage in this behaviour do so to evade tax, debts to suppliers, clients, employers, and other businesses. This behaviour allows them to undercut honest competition and destroy livelihoods.

The practice has a profound effect on the local and national economy and is particularly prevalent in the labour hire industry. Since most growers use labour hire companies, this means they are exposed to the impact of illegal phoenix behaviour.

Phoenix companies aren't just about 'hiding a bit from the taxman'. They are often involved in exploitation of staff through underpayment of wages and super and pressuring employees to accept unsafe working practices.

The multi-agency Phoenix Taskforce, headed by the ATO, was formed to enable a whole-of-government approach to wiping out phoenix behaviour, by sharing information and strengthening connections to identify phoenix operators and take action against perpetrators.

It's not just employees and creditors who have to worry. Growers engaged with a phoenix operator to supply labour are at serious risk of being held liable for a phoenix operator's debts and could face civil and criminal sanctions.

The consequences include:

- fines of up to \$63,000 for individuals and \$315,000 for businesses;
- liability for an employee injured on your workplace where the labour hire company does not have insurance;
- liability for premiums the labour hire business has failed to pay; and
- liability for foreign workers breaching visa conditions - potentially resulting in up to five years' imprisonment.

There are plenty of signs which point to the possibility of dealing with a phoenix operator:

- they are able to significantly underquote compared to similar businesses;
- the company requests payment to a new company;
- the directors may have been involved with other liquidated entities; and

- the company directors and the name of the company may change, but staff, managers, and phone numbers remain the same.

These are some things growers should be doing to protect themselves, and their businesses from being caught up in this illegal behaviour:

- ask for proof the company is registered;
- checking if directors or the people in control have ever been bankrupt;
- keep records of all contract workers, as well as their visa details; and
- ask for proof of superannuation fund registration and copies of their WorkCover or Insurance Certificate of Currency.

If you suspect you are involved with a phoenix company, you can lodge a report through the Tax Evasion Reporting Form on the ATO's website or by visiting [ato.gov.au/phoenix](http://ato.gov.au/phoenix)

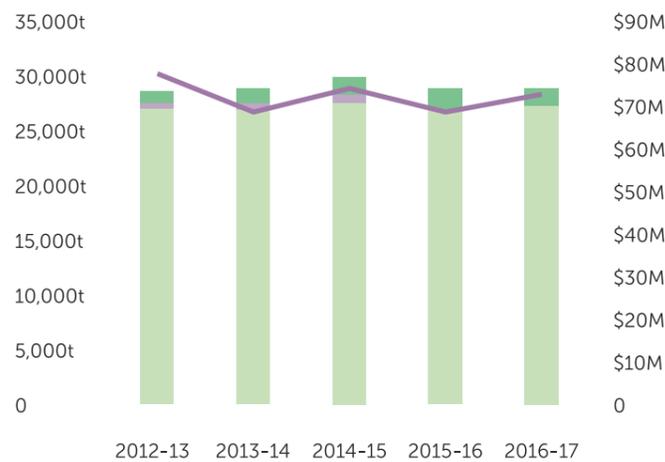


**Australian Government**  
**Australian Taxation Office**

You can also contact us on **13 28 66** or visit [ato.gov.au/reportevasion](http://ato.gov.au/reportevasion)

Report illegal phoenix behaviour  
[www.fairwork.gov.au/tipoff](http://www.fairwork.gov.au/tipoff)

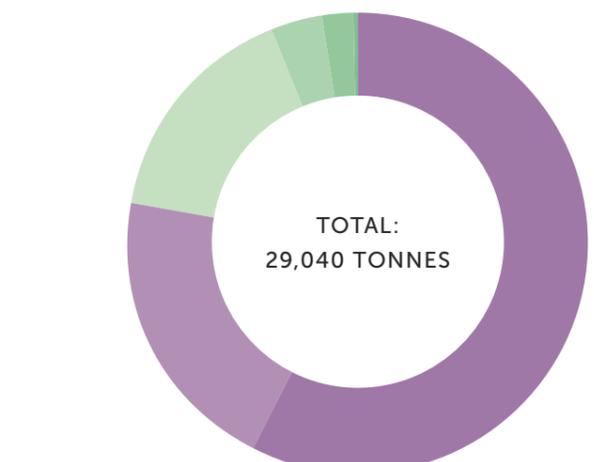
# VEGGIE STATS: GREEN BEANS



### GREEN BEANS PRODUCTION AND VALUE

- Australia produced over 29,000 tonnes of beans in 2016-17, consistent with previous years, with most of this supply going to the domestic fresh market.
- While Australia has historically produced some beans for processing, in recent years the proportion of domestic production going to processing has dropped to zero.

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



### PRODUCTION BY STATE 2016-17

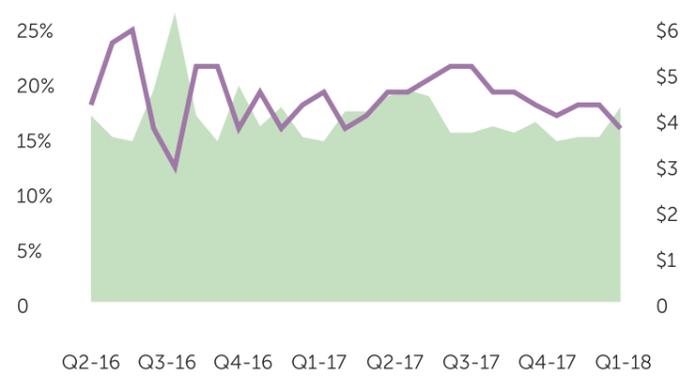
- Australia produced around \$78 million of fresh beans in 2016-17, up from around \$69 million in 2015-16.
- The majority of fresh beans in Australia are grown in Queensland, with most of the remaining production coming from Tasmania and Victoria.



### GREEN BEANS PRODUCTION AND VALUE

- For more insights into market performance and shopping behaviour for fresh vegetables, see the levy-funded Harvest to Home dashboard at [harvesttohome.net.au](http://harvesttohome.net.au).

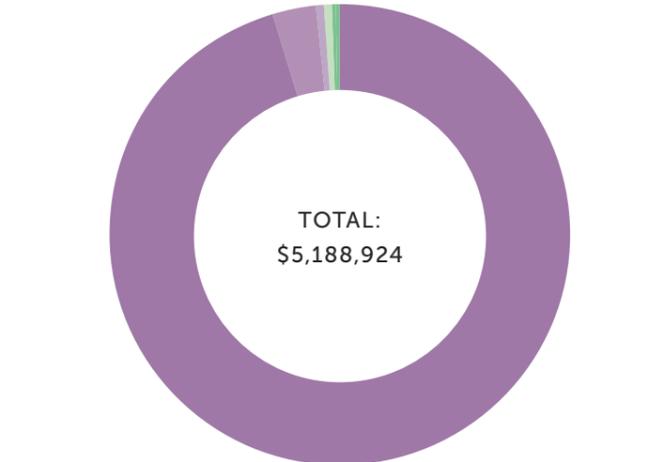
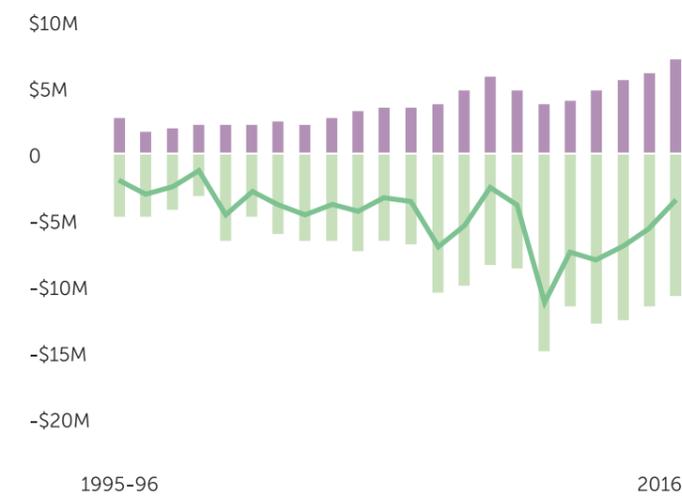
Source: Harvest to Home dashboard, Nielsen Australia, accessed May 2018



### GREEN BEANS TRADE BALANCE

- The vast majority of Australian fresh bean exports are sent to New Zealand, while frozen bean exports go primarily to Indonesia, with lesser amounts going to New Zealand, Papua New Guinea and Thailand.
- Australia's trade balance for fresh beans is positive, but the overall trade balance for fresh and frozen beans combined is negative due to heavy importing of frozen beans, which also impacts domestic production for processing.

Source: Global Trade Atlas, accessed April 2018



### KEY EXPORT MARKETS FOR FRESH GREEN BEANS 2016-17

- Exports of fresh and chilled beans earned nearly \$5.2 million in 2016-17. This comes after consistent year-on-year growth in recent years and is more than double the export value in 2007-08.

Source: Global Trade Atlas, accessed May 2018



At wedding ceremonies in Nicaragua, the bride and groom are given a bowl of beans for good luck.

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



Severe etch on a butternut pumpkin in North Queensland.

## PROJECT UPDATE: MANAGING BROWN ETCH IN PUMPKINS

Brown etch, or rust mark, is a major issue for pumpkin growers in Australia – and the cause of the disorder is largely unknown. Dr Jenny Ekman from Applied Horticultural Research provides an update on a strategic levy investment looking at this mysterious pumpkin problem and how to manage it.

Any grower of butternut pumpkins is likely to be familiar with brown etch, or rust mark. Although the developing brown areas are superficial and do not reduce eating quality, the appearance of etch makes the pumpkins unmarketable. At times etch has resulted in abandonment of whole crops, while losses of 10-20 per cent are not unusual.

Initially, brown etch usually develops in the field. It can appear as either a pattern of concentric brown rings, or as irregularly-shaped brown blotches spreading across the fruit.

Etch can also develop after harvest, so that a freshly packed, clean bin of pumpkins at the farm can be riddled with etch by the time it arrives at the wholesale markets. This etch is almost always blotchy. The greatest losses can occur at this stage of the supply chain, as affected bins need to be sorted and graded.

It has always been thought that etch was caused by a pathogen, although attempts to isolate the organism responsible have had varied results. Gummy stem blight (*Didymella bryoniae*) and various species of *Fusarium* have been isolated at times, but attempts to cause the same symptoms through re-inoculating the pathogen onto healthy fruit have had little success.

A current project is attempting to find the cause of brown etch as well as minimise its occurrence. *Improved management of pumpkin brown etch* (VG15064) is a strategic levy investment under the Hort Innovation Vegetable Fund.

### INCIDENCE OF ETCH (%) IN A PUMPKIN CROP IN NORTH QUEENSLAND LEADING UP UNTIL HARVEST



### PROJECT FINDINGS

One thing seems clear from the results recorded so far; brown etch is not a disease, but a physiological disorder.

Project team pathologist Dr Len Tesoriero has been attempting to isolate organisms from the etched areas of pumpkins.

"There is no consistency between the samples, and often we isolate no pathogens at all. In terms of the pathogens on or just under the fruit skins, there doesn't seem to be any difference between etched and non-etched pumpkins," Dr Tesoriero said.

"We have also tried inoculating pumpkins with *Fusarium* and gummy stem blight at different points during maturation. So far, none of these inoculations have increased etch compared to the untreated controls."

This result appears to be confirmed by microscopic examination of the affected skin. Sydney University researchers have been examining the lesions and have found that no fungal structures are visible, but the cells immediately under the surface layer appear twisted and pushed out of shape.

"This suggests that either they have been exposed to heightened turgor pressure, or that the structure of the cell walls is weak. Many are partially collapsed, which may explain the brown colour of etched areas," Sydney University Associate Professor Brian Jones explained.

Turgor pressure is pressure within the cell of a plant that is generated by the movement of water across cell walls. Turgor pressure pushes up against the cell wall, resulting in rigidity.

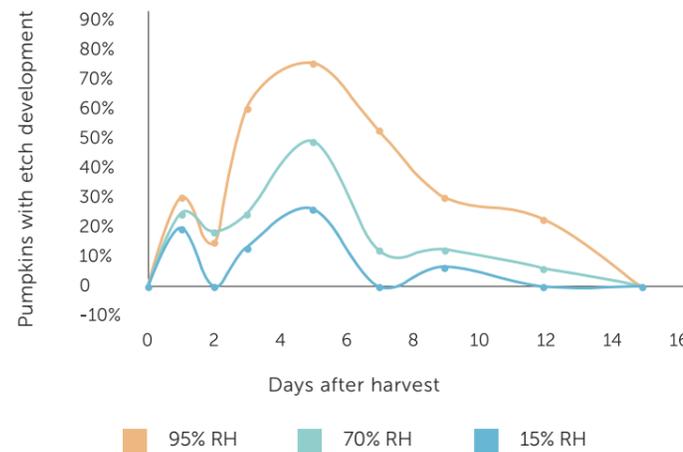
Field trials have demonstrated that there is a strong relationship between development of etch and high humidity. In more than 90 per cent of cases, etch originates at a contact point with the soil, vegetation or another pumpkin. Although occasionally found on green fruit, incidence generally increases as the crop approaches maturity. This suggests that etch may be a reaction triggered by turgor pressure stress.

### POST-HARVEST ISSUES

However, this still doesn't explain why etch appears post-harvest. When etched pumpkins were stored at 70-95 per cent relative humidity, the affected areas continued to spread on more than 70 per cent of fruit. Of those that appeared clean at harvest,

20-30 per cent developed etch during storage. This is consistent with observations of commercial shipments. Although only clean pumpkins were packed from one affected crop, 24 per cent of pumpkins were etched by the time the bins travelled from north Queensland to Sydney Markets.

### THE DEVELOPMENT OF ETCH (SPREAD OR NEW OCCURRENCE) POST-HARVEST ON PUMPKINS STORED AT 95%, 70% OR 15% RELATIVE HUMIDITY



Moreover, symptoms can continue to appear and grow for up to two weeks after harvest. This means that even delaying packing for a few days may not guarantee that bins remain etch-free.

These trials included the popular varieties "Jaqueline" and "Sunset QHI". Although the latter was bred for etch resistance, rates of both pre- and post-harvest etch development were similar in this case.

Storing under low relative humidity reduced etch development, although it was not eliminated. Post-harvest trials are now testing whether 'curing' pumpkins, as is done for onions, can reduce post-harvest incidence.

However, prevention is better than cure, so field trials are focusing on treatments that either increase the strength of cell walls and/or turn on natural plant defences. It may also be possible to determine which genes relate to etch susceptibility, with the long-term goal of producing a truly etch-proof butternut pumpkin.

### INFO R&D

For more information, please contact Dr Jenny Ekman on 0407 384 285 or jenny.ekman@ahr.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: VG15064



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Macquarie University Department of Biology Senior Lecturer Dr Linda Beaumont is involved in the 'Which Plant Where' project, as part of the Hort Frontiers Green Cities Fund.

## DRIVING GREEN URBAN SPACE TO DELIVER A HEALTHIER FUTURE

The Green Cities 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 Green Cities Fund Byron de Kock spoke to *Vegetables Australia* about the fund and how it can benefit not only vegetable growers, but society as a whole.

To complement traditional strategic levy investment, Hort Innovation has developed the Hort Frontiers strategic partnership initiative to deliver transformational investments that will benefit the wider horticulture industry.

The Hort Frontiers strategic partnership can invest funds from both the broader research and supply chain, and grower levy funds alongside contributions from the Australian Government. The diversity of investors may include organisations from along the value chain, non-horticulture commercial organisations, universities, public and private research institutes, and state government agencies. Horticulture levy funds may be invested in Hort Frontiers should the appropriate advice be received. While the individual goals of co-investment partners may differ, investment outcomes need to benefit all of horticulture to be considered.

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.

### GOING GREEN

As Australia's urban population increases, and the health benefits of green spaces becomes clearer, urban developers and governments are becoming increasingly interested in creating greener communities. However, the impact of green space in a range of environments needs further research. To address this, Hort Innovation has developed the Green Cities Fund to help uncover science-based answers to these questions and inform business decisions regarding urban development.

A significant portion of the horticulture industry is non-edible horticulture, and both the turf and nursery industries have significant strategic levy investment programs in place to address industry needs. Green Cities Fund R&D Manager Byron de Kock said the fund is the vehicle for transformational investment to complement these existing industry-focused investment programs.

A range of research projects are already underway as part of the Green Cities fund. These include investigating the link between greener cities and healthier lives; the suitability of different plant species in an urban environment; expanding the living architecture industry in Australia; investigating the performance of green roofs and walls on temporary buildings; and measuring Australia's green space asset.

### CO-INVESTMENT PROJECTS

*The Greener cities, healthier lives* project (GC15005) will provide the first systemic evidence of the health benefits of green spaces throughout a person's lifetime. This project, in partnership with the University of Wollongong, will provide industry and policy makers with evidence-based research on the minimum threshold of the local green space necessary for favourable health and societal outcomes.

A first of its kind, the 'Which Plant Where?' project (GC15002) brings together a consortium of researchers from Macquarie University and Western Sydney University to investigate the suitability of various plants species under current and future climate scenarios. It will culminate in an online interactive tool that will map the distribution of suitable habitats for various plant species across Australia.

The fund will also address how temporary accommodation can potentially benefit from green infrastructure, through mitigating external temperature fluctuations and noise variability, improved aesthetic characteristics and as a potential food production utility. However, there is currently no evidence to demonstrate whether the benefits of installing green infrastructure on temporary buildings exceed the costs. In light of this, a project established under the Green Cities Fund will overcome this research gap by connecting academia with a large construction company to investigate the benefits of green infrastructure (green roofs and green walls) on demountable buildings (GC16000).

Another project (GC15004), co-funded by the University of Technology Sydney and the Hort Innovation Nursery and Turf Funds, will address two key research questions:

1. What existing tools and methods are available around the world for mapping, monitoring and reporting on urban green space?
2. To what extent are these tools suitable for application in Australia, and what modifications would be required?

The project will undertake a three-phase approach to the research, including consultation with stakeholders, a scientific literature review and the development of a 'blueprint' for an Australian set of metrics for urban green space.

Cities such as Toronto in Canada and Singapore have mandated green roofs and walls in their planning legislation to increase the amount of green infrastructure and make their cities more liveable in an era of increasing temperatures and rapidly growing urbanisation.

In contrast, Australia has no national policy on green roofs and green walls. To address this, Hort Innovation has invested funding into a project (GC15001) which will explore whether a mandatory approach to green roofs and walls is feasible and appropriate for Australia. The 12-month project will reference case studies from Canada, Singapore, the United Kingdom and Australia to illustrate new build and retrofit case study examples of green walls.

While the Green Cities Fund aims to uncover the science-based answers to key urban greening questions, Hort Innovation's 2020 Vision and Plant Life Balance initiatives are charged with marketing the vision and utilising the research for public engagement. The 2020 Vision Green Light Tour is currently travelling around the country, engaging government, commercial, research and community groups to look at best practice to implement national green infrastructure policies. The Plant Life Balance App available on iTunes has been a huge success.

### THE BOTTOM LINE

According to Mr de Kock, if the Green Cities Fund was not undertaken, there would be a decline in tree canopy cover and green infrastructure in Australia's urban areas as well as an absence

of critical research that could help to address the decline and demonstrate the value of this green space.

On the flip side, the introduction of 'green cities' projects could benefit Australia's vegetable growers.

"The appreciation shown by the urban community for vegetation and a healthy environment could complement the need to consume healthy nutritious food, and a large portion of which would be Australian-grown fresh vegetables," Mr de Kock said.

### INFO R&D

For more information, please visit [hortfrontiers.com.au](http://hortfrontiers.com.au) or contact Byron de Kock at [byron.dekock@horticulture.com.au](mailto:byron.dekock@horticulture.com.au) or 03 9691 3524.

To submit an idea for a future project, visit Hort Innovation's Concept Proposal Form at [edms.horticulture.com.au/Forms/ConceptFormV2](http://edms.horticulture.com.au/Forms/ConceptFormV2).

*Vegetables Australia* will profile each Hort Frontiers Fund in further detail in future editions of the magazine.

These projects have been funded by the Hort Frontiers Green Cities 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 – GREEN CITIES FUND

PROJECT CODE	PROJECT TITLE	SERVICE PROVIDER
GC15001	Expanding the living architecture industry in Australia	University of Technology Sydney
GC15002	Which Plant Where?	Macquarie University, Western Sydney University, New South Wales Office of Environment and Heritage
GC15004	Measuring Australia's green space asset	University of Technology Sydney
GC15005	Greener cities, healthier lives	University of Wollongong
GC16000	Investigating the performance of green roofs and walls on temporary buildings	Queensland University of Technology

## Got empty drums or unwanted agvet chemicals?





Figure 1: A fixed wing drone.

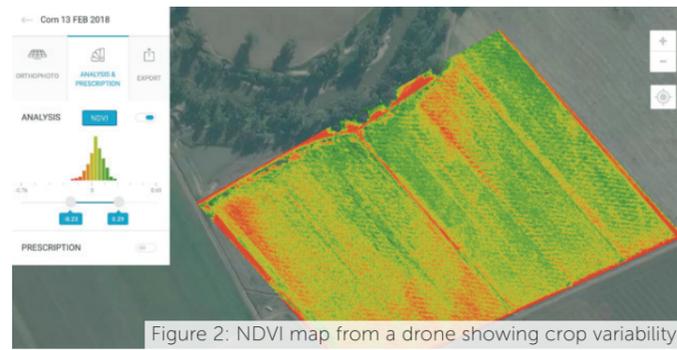


Figure 2: NDVI map from a drone showing crop variability.

## CROP VARIABILITY, PEST MANAGEMENT AND COVER CROPS: WHAT CAN DRONES TELL US?

A strategic levy investment under the Hort Innovation Vegetable Fund, the Soil Wealth and Integrated Crop Protection (ICP) project works with growers nationally to put soil management and plant health research into practice. We provide an update from the Cowra demonstration site on a recent drone trial, as well as an overview of resources covering biopesticides, sucking pests and buckwheat cover crops.

### DRONE TRIALS OVER POPCORN: COWRA, NSW

Like many farmers these days, Ed Fagan is wondering about the usefulness of drones. ProUAV Australia recently visited Mulyan Farms in Cowra, New South Wales, and provided vegetative index (Normalised Difference Vegetation Index, or NDVI) imagery of a furrow (flood) irrigated popcorn crop in its early milk stage. Both a fixed wing drone (see Figure 1) and a hexacopter were used to capture the data.

What explains the variability? Both the south and west borders show stress from the prevailing winds and open exposure (see Figure 2). The plants in these areas are more mature, and also have slightly more heliothis grub damage. The lighter colours of yellow and orange in the north and northeast part of the paddock show irrigation stress. Interestingly, there is known soil variation across this paddock which wasn't immediately obvious in the imagery, possibly due to its maturity and rooting depth.

NDVI images from the hexacopter appear to show more variance and more accurately decipher plant health differences.

Mulyan Farms sees many more uses for a drone, including elevation points and accurate drainage maps, quickly assessing storm damage and areas affected, and inspecting sprinkler irrigation pipes with targeted checks of pressure and blocked nozzles. Comparing crops from season to season and identifying areas that consistently underperform would also be of value to Ed.

Drones will be part of the future of vegetable production in some way, and they are changing and advancing very fast. This is due to the algorithms and interpretation of the data advancing rapidly. Plant counts as well as NDVI across entire paddocks will help with managing crop nutrition, estimating yield and quality, and fine-tuning harvest dates. Algorithms for yields, brix, protein, moisture, insects, diseases and weeds are being developed and will undergo constant improvements in the near future. You can read more about the demonstration site on the Soil Wealth/ICP website. Thanks to ProUAV Australia for its contribution.

### BIOPESTICIDES IN AUSTRALIA

Biopesticides are a diverse group of pest control products based on naturally occurring biochemicals, minerals and microbes. They

generally have very low toxicity to humans and are sustainable with minimal environmental impacts. Many can be used in organic production.

This new fact sheet covers plant extracts, microbial pesticides, natural chemicals/minerals and biochemicals, including their availability, application, developments, challenges, advantages and disadvantages. It is available on the Soil Wealth/ICP website.

### MEGA PESTS: MANAGING SUCKING PESTS

Want to regain control over chemical-resistant pests? Are you aiming to reduce costs while meeting quality assurance requirements? This fact sheet covers the management of sucking insects, including information on:

- The nature of sucking pests (thrips, whiteflies, aphids, mites and bugs).
- Steps for managing sucking pests.
- Use of specific predators and parasitoids.
- A case study on the management of western flower thrip (WFT) and tomato spotted wilt virus (TSWV) in capsicums.

There is increasing interest in using different cover crop species and mixes of cover crops to improve soil health and productivity in the Australian vegetable industry.

One option is buckwheat, which is the focus of a new video that provides guidance on sowing, management and how to best terminate the cover crop.

Some of the advantages of buckwheat include rapid growth, strong weed suppression and quick breakdown of residues, allowing it to fit into tight rotations and certain crops like baby leaf.

The video is available on the Soil Wealth/ICP website.

#### INFO

You can access all the resources in this article, as well as news and events from around the country, at [soilwealth.com.au](http://soilwealth.com.au).

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



## OPPORTUNITY 'KNOX' FOR AUSTRALIAN CONSUMERS

It's convenient, it's tasty and for the past 20 years Australian consumers have embraced the pre-mixed salad bag movement. With sales continually rising and the range of salad blends increasing, does the vegetable industry know what consumers want to see in their salad bag?

The development of breathable plastics in the 1980s and the breeding of lettuce cultivars with smaller and more processable leaves have driven the continuing evolution of bagged salads. More and more types and colours of leaves are available to processors.

Harry Turna is a technical sales representative at vegetable seed company, Rijk Zwaan Australia. He uses market research to identify trends and consumer demands to inform lettuce breeding.

"If we want this industry to continue to thrive, we need to improve our understanding of the pre-packed lettuce category – what leaves are popular among consumers? What factors encourage repeat purchases? Why do consumers buy whole head over salad bags?" Mr Turna said.

Research conducted by Newcastle-based independent researcher Angela Mitchell showed that three out of five consumers were dissatisfied with the mixes they purchased as they did not receive their preferred leaves in the mixes.

"Interestingly a large proportion of salad leaf consumers would also purchase a head lettuce or another leaf type such as spinach or rocket at the same time," Mr Turna said.

### A MIXED BAG

When consumers were presented with a selection of leaves to create their own mix, the leaves chosen were mainly lettuce leaves – even when they had the possibility to choose other types of leaf such as spinach, rocket and brassica. Their ideal mix contained a proportion of three green lettuce leaves to one red leaf.

"We want to give consumers more of the leaves that they want to buy and according to this research, three out of five customers would prefer to buy loose leaves or whole head instead of the bags of leaves if they thought the quality was better," Mr Turna said.

"We believe we need to offer consumers blends of lettuce leaves that stay fresher for longer."

In the past, the processability and shelf life of some of these lettuce types have been problematic due to large cut surfaces and visual ageing through oxidation. Advances in breeding have gone a long way towards addressing these issues such as cultivars like those in the 'one cut ready' Salanova® lettuce range, introduced in Australia in 1995.

An exciting development in vegetable breeding was the introduction of the Knox™ trait by Rijk Zwaan in 2016. Developed through conventional breeding techniques, the trait in lettuce delays the browning of cut surfaces by several days. This extra boost to leaf quality is now bred into Salanova varieties, meaning the leaves consumers want to include in their mixed salad bags are now more viable. That's good news to consumers who will be looking forward to more and fresher lettuce in their salad mixes.

#### INFO

Image supplied by Rijk Zwaan. For more information, please visit [rijkszwaan.com.au](http://rijkszwaan.com.au).





## PASSION FOR FRESH FOOD AND THE COMMUNITY INSPIRES CLUSTER LEADER

A self-described “born-and-bred Gippslander”, Dr Nicola Watts is passionate about the agrifood sector in eastern Victoria. After spending 15 years working overseas, Nicola returned to Bairnsdale to work in the vegetable industry before taking the lead of the East Gippsland Food Cluster – an organisation dedicated to making a positive impact on businesses in the local area, as well as the broader Gippsland community.

The East Gippsland Food Cluster is a member-based, not-for-profit organisation, which works according to the principles of collaboration and innovation – taking advantage of opportunities or addressing challenges that are too big or too complex for one business or one agency to tackle on its own.

The Cluster was first developed in late 2010 and commenced operation in April 2011. In 2016, it became a service provider to Hort Innovation as part of the National Vegetable Extension Network (VegNET, VG15047), a strategic levy investment under the Hort Innovation Vegetable Fund.

Chief Executive Officer Dr Nicola Watts has overseen the East Gippsland Food Cluster since its inception, with a number of successful initiatives taking place over the past seven years. She spoke to *Vegetables Australia* about her role and what this initiative means to the local vegetable industry and wider Gippsland community.

### LEADING THE CHARGE

As CEO, Nicola’s role is to facilitate collaborative projects and make sure they are delivered in a timely manner.

“A lot of my role is going out and establishing networks and building the contacts to deliver a range of projects,” she says.

“We work to the principles of clustering, which are based around what is often referred to as a triple helix – that’s industry working in collaboration with government and also with researchers. A lot of the projects that we get involved with have a very strong research and/or education angle as well.”

At the time of the Cluster’s inception, Nicola was working for one of Australia’s largest fresh produce processors, OneHarvest, as part of its management team for Vegco at Bairnsdale (this name is used for Harvest FreshCuts’ business in Victoria).

“We’d been working on a number of projects collaboratively with other businesses, particularly to address workforce challenges. Out of that came this recognition that there was probably more to be done in that collaboration space,” she explains.

“With the help of the Victorian Government and our local government authorities at that point in time, we commenced with eight foundation members and in the last seven years, this has grown to around 50 members.”

Nicola’s love for fresh produce and desire to remain working in Gippsland motivated her to join the East Gippsland Food Cluster.

“I wanted to get involved in activities that potentially made a positive difference for our community and for our region,” she says.

“I think food is so integral to what we do and who we are. Food standards from a health and well-being perspective, and food production, is so important for our regional economy. Also the whole sustainability issue – how we manage our production systems to minimise negative environmental footprints – is really important.”

### SUPPORTING LOCAL WORKERS

Nicola says that during the early years of the East Gippsland Food Cluster, there was a big focus on supporting workforce development initiatives.

“We knew that we had to disrupt some of the negative perceptions that are unfortunately out there in the community, particularly in the vegetable sector,” she says.

“Young people in particular were not recognising the exciting opportunities that are available to them. We’ve done a lot of work in that space, connecting young people into the industry.”

The Cluster facilitated a collaborative traineeship program for a number of years. It provided young people who had either just left school or were undertaking school-based traineeships with formal training, as well as on-the-job experience.

We work to the principles of clustering, which are based around what is often referred to as a triple helix – that’s industry working in collaboration with government and also with researchers.

“We rotated them across businesses over a 12-month period so that they could get a real sense of the diversity and the opportunities,” Nicola says.

One example of those who prospered from this program is Samantha Lizars, who featured in the March/April 2018 edition of *Vegetables Australia*. Samantha is currently employed as Quality Supervisor in the pack house at Bulmer Farms in Lindenow, and is about to study a diploma in quality management.

Nowadays, the Cluster is running a program entitled the “Gippsland Regional Agrifood Employment Program”, which aims to connect jobs seekers (particularly people who face barriers to employment) with opportunities in the agrifood sector.

### EMBRACING R&D

Joining the VegNET program has allowed the East Gippsland Food Cluster to unearth opportunities in the vegetable R&D space.

It has teamed up with CSIRO to explore what other products could be grown in the region to support the nutraceutical and functional food markets, in addition to the fresh produce market. This could lead to the establishment of a vegetable processing hub in Gippsland.

The Cluster is also working with other organisations such as Agribusiness Gippsland to look at how it can establish one strong regional leadership group in the agrifood space, and develop more collaboration across value chains to support innovation.

These activities reinforce its long-term vision of supporting

sustainable growth across six local government areas located in the Gippsland region.

“We’re trying to identify our core skills in horticulture and then identify what’s next – how can we start to develop a competitive edge in the region? Not just for the domestic market but with a particular focus on opportunities in export – taking that collaboration to another level,” Nicola says.

“Our real mandate is to grow our agrifood sector in the region; that’s really what our whole purpose is. We work a lot in that space of understanding where there are new market access opportunities in value-adding – we see that as a broader benefit to the region – and building brands.”

### ACHIEVING GOALS

Being the CEO of the East Gippsland Food Cluster can be rewarding, as Nicola explains.

“Sometimes it’s just the little things. We deliver a lot of projects and it’s great when we can deliver the project on-time and on-budget, but the things that I get the biggest kick out of is seeing people like Samantha Lizars shining on a really positive pathway.”

Nicola believes the agrifood sector is an “exciting space” to be working in, and her message to women looking to join the agriculture and horticulture industries is to have strong networks.

“There’s a lot of focus at the moment around supporting women in ag, because often it can be a male-dominated environment and that can sometimes present some challenges,” she says.

“I think to have supportive networks, and to really support your own professional and leadership development. It is also very important to understand who you are and what you stand for, and what you want to be, and how you stick to that pathway.”

As for those looking to become a leader, or a CEO, Nicola has a simple message: be bold.

“If that’s what you want to do, absolutely go after it but identify the things that are going to help you to get there along the way – what are the kinds of skills and opportunities that you might need to accept as part of the stepping stones that will help you get there?”

“Continuously learn, and learn from mistakes. Don’t make the same mistake twice, but don’t be afraid to make mistakes and learn from them. Be bold, and have a vision. In particular, think about collaborative leadership qualities, because collaboration in today’s world is really important.”

### INFO R&D

Regional capacity building to grow vegetable businesses – Victoria and Gippsland (East Gippsland Food Cluster) 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: VG15047



## SOIL BIOLOGY: BUILDING THE BIGGER PICTURE

The biological components of soil play an important role in crop growth and development. Syngenta Technical Services Lead Dave Antrobus discusses what methods are available to measure soil biology and why it is important to have long-term plans in place.

In my last *Ask the Industry* column, I talked about the importance of healthy soils to vegetable production and some of the biological components that impact crop growth and profitability. The biology within the soil is indeed a complex matrix. Along with a potential multitude of disease-causing organisms such as rhizoctonia, pythium, fusarium, phytophthora and plant-parasitic nematodes, is an army of beneficial species that are critical to soil health.

### KEEPING THE SOIL BIOLOGY IN BALANCE IS ESSENTIAL

A key indicator of soil biological activity is organic matter content and tests are revealing some of our vegetable producing land has become alarmingly low in organic carbon. The negative effects of this include loss of soil structure and aggregation, which in turn leads to reduced water holding capacity, a decline in nutrient absorption and retention, soil buffering capacity and microbial biodiversity.

Many root disease organisms are well-equipped to thrive in poor soil conditions and take advantage of the lack of biodiversity that would otherwise keep them in check. Unhealthy plants that grow slowly are less able to fight off infection, so building organic matter from low levels should be a priority where these conditions exist.

### UNDERSTANDING SOIL MAPPING

The question that needs to be answered first is why is the organic material so low? Is it because of over-cultivation, or compaction caused by machinery or animal traffic? Is it just a result of a poor soil type to start with, or has there been a lack of the correct fertiliser or water necessary to build organic carbon levels over the longer term?

A good place to start in 'building the bigger picture' is with more comprehensive soil mapping. Accurate soil maps really are the key to successfully implementing site-specific management decisions.

Maps can highlight the points of interest or concern to you and the good news is that there is no special software required to

view a map. Going a step further, GPS referenced paddock maps can be produced in a range of formats. They make life easier for a range of tasks, including comparing disease levels or infection outbreaks against soil conditions. For example, we know root diseases induced by many phytophthora and pythium species thrive in waterlogged conditions. Knowing where these areas are and why the soil in those areas is becoming waterlogged is the first step in being able to correct the cause.

### TESTING OPTIONS

Fertiliser companies and advisers can do a range of soil tests for you that measure available nutrients, pH and organic carbon. If your soils have low organic carbon and you suspect they have poor soil structure as a consequence, it may be time to run electromagnetic (EM38) soil mapping equipment over your paddocks. This equipment can measure soil – both shallow and deep, and deliver a reliable zone map of soil type, potential water holding capacity and possible yield responses.

These maps can be used to define management zones that reflect obvious trends in soil properties. The advantage is that each zone can be sampled and treated independently and that could save you big money.

Having a long-term plan to improve soil structure in problem areas and optimise nutrition across all soil management zones will help to grow stronger, healthier crops.

Crops that are better able to fight off disease will pay serious dividends over time.

### 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](http://syngenta.com.au) or email *Vegetables Australia*: [info@ausveg.com.au](mailto: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.



## EMPLOYERS REMINDED TO GET READY FOR SINGLE TOUCH PAYROLL

Australia's new tax and superannuation reporting channel, Single Touch Payroll, is being rolled out from 1 July 2018 for employers with more than 20 employees. The Australian Tax Office is reminding employers to count their employees who are on their payroll as of 1 April, in preparation for the new system.

The Australian Tax Office (ATO) is reminding employers with 20 or more employees to get ready for the start of Single Touch Payroll (STP) on 1 July 2018. The next step for employers is to count the employees who are on their payroll as of 1 April to determine if they need to report through STP this year.

STP is the next step in streamlining payroll reporting. It is a reporting change that will allow employers to report tax and superannuation information to the ATO from their own payroll software.

Assistant Commissioner John Shepherd said if a business has close to 20 employees, you will need to do a headcount of your employees. There is guidance on the ATO website ([ato.gov.au](http://ato.gov.au)) to help – including who you should and shouldn't include in the count.

"Do the headcount at a time that's convenient for you – as long as you count those employees who were on your payroll on 1 April," Mr Shepherd said.

"If it totals 20 or more, you'll need to get ready to report through STP from 1 July."

Mr Shepherd also stressed that employers don't have to report the headcount information to the ATO.

"The headcount is for you to determine whether you need to start reporting this year or not. We don't need you to send us that information, but you should keep a copy for your own records.

"The ATO is ready for the start of STP. We strongly recommend you check in with your payroll software provider if you haven't already. They can advise you of the steps you should take to update your software if you need to, and start STP reporting."

### INFO

Employers can visit [ato.gov.au/stp](http://ato.gov.au/stp) for detailed information about Single Touch Payroll, including a fact sheet, checklist and how to do the headcount.

For further updates, follow the Australian Tax Office on Facebook, Twitter and LinkedIn.

## VACUUM COOLERS

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Kialla Pure Foods has signed on with the Australian Trusted Trader program.

## NEW AUSTRALIAN PROGRAM AIMS TO SIMPLIFY THE EXPORT PROCESS

In a bid to save time and make the process of exporting to market easier, the Australian Border Force has introduced Australian Trusted Trader. This program is already benefiting small horticulture businesses by helping them gain international recognition as well as access to dedicated resources.

Australian Trusted Trader is building momentum and boosting its suite of benefits for producers trading around the world.

As Australia's customs service, the Australian Border Force is committed to facilitating trade and improving access to global markets for Australian businesses.

Trusted Trader, run by the Australian Border Force, works by accrediting businesses that can demonstrate compliant trade practices and a secure supply chain. Once accredited, Trusted Traders gain access to a range of exclusive benefits, developed *with* industry and designed to help save money and time. These include:

- A dedicated Australian Border Force account manager.
- Your exports to market faster.
- Use of the Australian Trusted Trader logo, helping your business be internationally recognised as trusted by the Australian Government.
- Increased access to international trade markets, through Mutual Recognition Agreements.

Last year a landmark arrangement was signed with China, Australia's largest trading partner, providing faster and more efficient access for Trusted Traders into the market.

The Australia-China Mutual Recognition Arrangement is expected to bring a benefit of \$440 million to Australia's economy over 10 years. These arrangements are also shared with New Zealand, Hong Kong, Republic of Korea and Canada, while a plan to progress a Mutual Recognition Arrangement worth \$540 million to Australia's economy with the United States of America was signed earlier this year.

These international arrangements give businesses unprecedented access to trade facilitation benefits and are reducing costs for businesses, while ensuring the integrity of our border. They are also reducing the regulatory burden on Australian business and improving access to the market for exporters.

There is also a streamlined process when applying for sponsorship accreditation under the Temporary Skill Shortage visa (subclass 482). With these and other benefits available, Trusted Traders are seeing more tangible cost and time savings. As the Trusted Trader community grows, businesses are seeking out service providers they know are trusted in the international trade community.

### A BOOST FOR AUSTRALIAN ORGANICS

Australia produces some of the highest quality organic food in the world, and one of the businesses leading the way is Kialla Pure Foods. The Australian Certified Organic grain processor began in Toowoomba, Queensland in 1998, and is now exporting to nine countries.

Kialla Pure Foods prides itself on its quality assurance, which until recently had been focused on food safety and manufacturing processes.

"We run many quality assurance programs across our business, but there was a gap in the import-export protocol side of the business," Kialla Pure Foods Managing Director Quentin Kennedy said.

When the Australian Border Force approached Mr Kennedy, he knew Trusted Trader could benefit the business.

"We saw that it was a good fit among our other quality assurance program and would complete our whole-of-supply chain program," he said.

"I'd recommend Australian Trusted Trader to other small exporters as it closes the final gap in the whole supply chain."

Trusted Trader works by accrediting businesses that have compliant trade practices and a secure supply chain – once a business has become accredited, it is able to access a range of tangible financial and time-saving benefits as well as simplified customs processes.

One of the key benefits for businesses that sign on to become Trusted Traders is that they have direct access into the Australian Border Force through a dedicated account manager. This benefit is only available to those who have joined the program.

"The Australian Border Force has been very supportive throughout the whole process and has been able to give us guidance where we've needed it," Mr Kennedy said.

#### INFO

For more information about Australian Trusted Trader, please visit [abf.gov.au/trustedtrader](http://abf.gov.au/trustedtrader).



## VICTORIAN INDUSTRY GATHERS TO RECOGNISE WOMEN IN HORTICULTURE

Earlier this year, Boomaroo Nurseries and AUSVEG VIC united to deliver a Women in Horticulture event, which provided an opportunity to celebrate and support the contributions of women in the Victorian vegetable industry.

As Melbourne prepared for the arrival of the Grand Prix, Victorian vegetable industry members prepared a celebration of their own, in the form of the inaugural Boomaroo Nurseries and AUSVEG VIC Women in Horticulture event.

Held at Greenfields Albert Park on 28 February, the event allowed more than 70 members of Victoria's vegetable industry to network, enjoy locally-sourced produce and celebrate the ongoing contributions of women in their industry.

"The event was also established as an opportunity for women across varying aspects of the produce industry to collaborate and learn some insights from an extended network of speakers on current topics around Wellness, Innovation, Branding and Technology," Boomaroo Nurseries Head of Marketing, Strategy and New Business Development Emily White said.

"The inaugural event had a fantastic turnout across a spectrum of farming enterprises and supply chain partners."

### INSPIRING SPEAKERS

AUSVEG VIC President Paul Gazzola welcomed guests to the event and outlined the prominent role that women play in the horticulture industry, while Boomaroo Chair Peter Gerner said women were "a crucial part" of the nursery business.

Kathryn Davies from NAB Agribusiness explained how the organisation strives for a 50/50 split between men and women in leadership roles, and the diverse ways it has supported its customers and staff in both their personal lives and the workplace. Meanwhile, clinical dietician Lorraine Gaffney educated attendees with a presentation on mindful eating in a busy world, and provided

tips on achieving small, consistent daily habits to manage stress.

Amanda O'Grady and Lachlan Ryan from Grindstone Creative (pictured above) outlined strategies to achieve a consistent brand experience across physical and digital realms, while Oliver Horn from Swisse described the company's three foundational pillars of movement, nutrition and mindfulness and how it has taken an active role in nurturing the culture of the organisation to strengthen outputs.

Tracey McPherson from BASF rounded off the presentations with an overview of how the company has re-shaped its culture to drive strategy and has empowered staff to contribute to the new culture in a positive way.

"Diversity in our business is important and Boomaroo Nurseries hopes to continue to support this annual Women in Horticulture event with AUSVEG VIC," Emily said.

"Overall these are the right events to support and are important in building the future strength, collaboration and knowledge-sharing among our Women in Horticulture leaders, both within their businesses and the wider industry."

The event was also used as a platform to launch nominations for the annual AUSVEG VIC Women in Horticulture Award, sponsored by Boomaroo Nurseries, which was won by Lisa Corrigan of Corrigan's Produce Farms. Lisa will represent Victoria in the same category at the National Awards for Excellence, to be held at Hort Connections 2018 in Brisbane from 18-20 June.

#### INFO

For more information please contact Emily White at Boomaroo Nurseries at [emily.white@boomaroo.com](mailto:emily.white@boomaroo.com).

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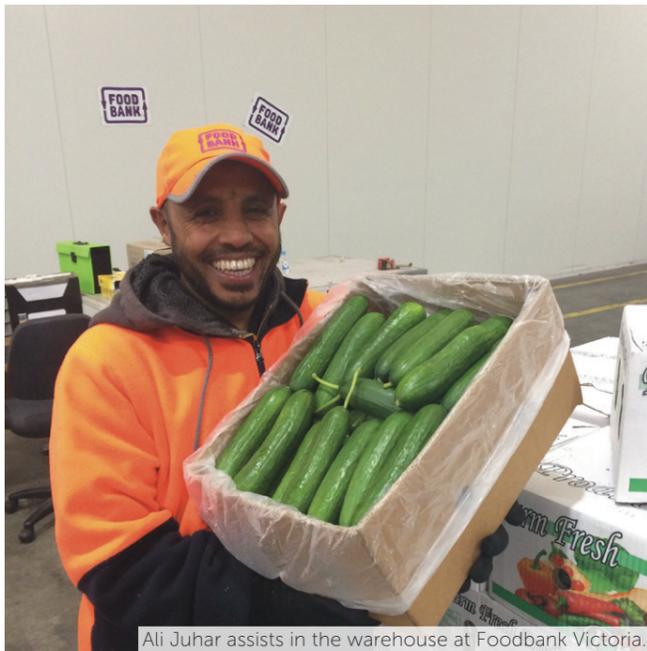


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Ali Juhar assists in the warehouse at Foodbank Victoria.

## ESTABLISHING HUNGER AS A NATIONAL CRISIS IN AUSTRALIA

With 652,000 Australians now receiving food relief from Foodbank's charity partners each month, it is vital for Australia's largest hunger relief organisation to maintain a national presence. This could not be achieved without the assistance of its generous national donors that distribute produce to Foodbank warehouses, wholesale markets or hubs around the country.

The Foodbank Fruit and Vegetable Program gives the horticulture industry the opportunity to donate fruit and vegetables to families that are doing it tough. The most in-demand items are potatoes, onions, pumpkin, broccoli, carrots, tomatoes, lettuce, bananas, apples and pears, but Foodbank appreciates any produce that is surplus, not to specification, incorrectly labelled or rejected from wholesalers and retailers – as long as it is still fit for human consumption.

Major national donors to Foodbank include Perfection Fresh, Costa Group, OneHarvest, A&G Lamattina and Sons, Montague and Mitolo Group. *Vegetables Australia* spoke to the businesses that donate on a national scale about why they joined Foodbank in the fight against hunger.

### CONQUERING WASTE

To help vulnerable Australians gain access to fresh produce in times of need, Perfection Fresh partnered with Foodbank to not only help end hunger in Australia, but also reduce the amount of food waste across the country.

Perfection Fresh provides Foodbank with a variety of fresh produce including tomatoes, broccoli, lettuce, asparagus, cucumbers and fruit salad from its network in New South Wales, Victoria, Queensland and Western Australia.

"Perfection Fresh aims to be socially and environmentally conscious across all areas of our packaging, products and processes in our business," Perfection Fresh CEO Michael Simonetta said.

"As we know, produce grows in all shapes and sizes, so the entire crop isn't always suitable to retail outlets, despite still being suitable for human consumption. The thought that we supplied over 30,000 meals last year alone to those in need, is great for our moral and social conscience."

Costa Group has been a national donor to Foodbank since 2011/12 and the company donates products from across its range in almost every state.

Costa Group Corporate Affairs Manager Michael Toby described the ease in which produce can be donated.

"One of the benefits of partnering with Foodbank is that it has the capacity and scale to collect and transport product from all over the country. This works well for Costa because we have multiple production sites across all states and we know that Foodbank has the logistical capability to match our footprint."

OneHarvest became an official partner of Foodbank in August 2017, and in that year donated 45,800 meals to Australians in need. The initial donations were arranged by OneHarvest's Brisbane team, however this was soon extended to its sites in Sydney, Perth and Bairnsdale in Victoria. The company donates a mixture of fresh produce and salad products including salad bowls or kits, leafy salad bags, microwaveable potatoes and stir fry bags.

"We're pleased to see that our excess food is no longer going to waste. But more than that, the benefit comes in knowing that our donations are helping to provide relief to more than 650,000 food insecure Australians every month," OneHarvest General Manager Andrew Francey said.

"Foodbank is an initiative that provides significant benefits to the community, and the best part is that donating is so simple."

Based in Victoria, A&G Lamattina & Sons Pty Ltd has proudly supplied Foodbank since January 2017. As a supplier to all major supermarkets in Australia, Lamattina's resources reach all states, providing Foodbank with a national supply of celery and parsnips through various outlets.

"Giving back and supporting the community has always been very important to Lamattina," General Manager Angelo Lamattina said.

Another national donor is the Mitolo Group. It has a partnership that spans almost two decades, which initially started with Foodbank South Australia.

"Foodbank allows hort businesses like ours to concentrate on their core business, in knowledge the charity has the logistics capacity, knowledge and operational infrastructure to receive bulk donations of fresh produce for those who are food insecure," Mitolo Managing Director Frank Mitolo said.

Foodbank believes that no one company in the horticulture sector can solve the food insecurity that disadvantaged Australians experience – but by donating a little regularly to Foodbank, this can have a very positive industry influence on outcomes.

The team will again be at the Hort Connections 2018 conference in Brisbane and would love to talk to attendees about how to work together to capture perfectly edible produce throughout the supply chain and divert it to people in need.

### INFO

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



In recent weeks, AUSVEG has commented on the difficulty of recruiting local workers into the horticultural labour force for a variety of media outlets, including the *Australian Financial Review*, the *Weekly Times* and 2GB radio's syndicated network.

AUSVEG CEO James Whiteside noted that labour costs affect Australia's ability to be competitive in export markets and said that while Australian growers want to employ local workers, in many parts of the country the domestic workforce simply isn't there. As a result, industry members often need to hire foreign workers to compensate for local workers often being unwilling to work on farms or being unreliable sources of labour.

Mr Whiteside acknowledged the importance of foreign workers to Australian horticulture and highlighted the fact that the vast majority of Australian growers treat their workers fairly and with respect. He also said the industry would be supportive of any initiative that encouraged unemployed workers to access jobs in the sector, both skilled and unskilled.

### CLARITY ON COUNTRY OF ORIGIN

In March, AUSVEG urged fast food outlets to consider adopting the new Country of Origin Labelling system, backing the call first made by Minister for Agriculture and Water Resources, the Hon. David Littleproud MP. At the same time, Mr Whiteside added that it was important to discuss why our industry is susceptible to competition from imports.

Mr Whiteside also appeared in print media encouraging online retailers take a proactive approach in promoting the country of origin of fresh produce, instead of using a loophole allowing them to avoid displaying country of origin on their websites.

### EXPORT DEVELOPMENT

AUSVEG National Manager – Export Development Michael Coote appeared in print and on broadcast media in May commenting that the Australian vegetable industry is capitalising on strong demand for locally-grown vegetables in key export markets and investment in increasing the export capabilities of its growers. He said the industry is well on the way to meet its ambitious

goal of 40 per cent growth to \$315 million in fresh vegetable exports by 2030. Mr Coote added that this progress should not be overshadowed by comparisons made with the value of Australian fruit exports.

Mr Coote also discussed the success of Hort Innovation's 'Taste Australia' initiative, which educates overseas consumers about Australian produce. Mr Coote highlighted that AUSVEG has received enquiries from growers looking to use the 'Taste Australia' brand, showing its commercial value in overseas markets.

### INDUSTRY R&D

Mr Whiteside also appeared in print media following concerns that a proposed rail trail between Crookwell and Goulburn in New South Wales could pose a biosecurity risk to Crookwell growers in the certified seed potato industry. Mr Whiteside urged the New South Wales Department of Premier and Cabinet to undertake a biosecurity risk assessment and implement a biosecurity plan.

AUSVEG National Manager – Communications Shaun Lindhe appeared in online media discussing the latest findings from the levy-funded Harvest to Home dashboard. Mr Lindhe explained the context behind some of the trends shown through the data, such as the continuing demand by consumers for convenient and value-added products, resulting in ongoing growth in the fresh salad category.

Mr Lindhe also appeared in print media discussing new irrigation technology developed in Israel that collects water through condensation and uses it to irrigate plants. He said that the technology could have practical uses in Australian horticulture, but that affordability to Australian growers was a key issue for adoption of any new technology.

### INFO <sup>R&D</sup>

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

Project Number: VG15027



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## GET STUFFED: GROWING GOOD HEALTH, GOOD FOOD AND LOCAL JOBS

Introduced in 2017, ReActivate Latrobe Valley aims to inspire and enable local communities to respond to change and thrive. One of its initiatives, Get Stuffed, focuses on making fresh produce accessible to residents in a bid to tackle poor health in the eastern Victorian region.

Located east of Melbourne with a population of 73,000, the Latrobe Valley has been through a tough time in recent years – it is significantly impacted by low levels of employment, poor health indicators and catalysts for change, such as the closure of coal-fuelled power stations in the region.

In response to these changes and to help support the community to move forward, the RMIT Office of Urban Transformations Research (OUTR) commenced an innovative, research-led initiative which proved successful, and as a result ReActivate Latrobe Valley was established in 2017.

A fully independent not-for-profit organisation, ReActivate Latrobe Valley has introduced several initiatives to the region, including Get Stuffed. There are an additional four branches including Get Growing, Get Swapped, Get Herbed and Get Cheffed.

### BUILDING HEALTHY HABITS

The Latrobe Valley currently faces a number of challenges, and the statistics are alarming:

- 75 per cent of Gippsland adults are overweight or obese.
- 9.6 per cent of Latrobe Valley residents are unemployed.
- 25.5 per cent of Latrobe Valley youth are disengaged from study, training and employment.
- For every one fresh food outlet, there are 3.7 takeaway food outlets.

As a result, Get Stuffed was specifically designed to diversify and increase food production capacity and improve the accessibility of fresh and healthy food for residents, with a strong focus on training, education and strengthening the social fabric of the Latrobe Valley.

“By alleviating income inequality through job creation and skill-building, we are tackling the root causes of poor health in the region,” ReActivate Latrobe Valley Co-Director Emma Lewis said.

“We’re also making fresh, locally-produced food more abundant and accessible in the process. This is really important for supporting the Latrobe Valley to become a healthier, happier, more robust region.”

### GROWING INDUSTRY

Get Stuffed helps to support new, small-scale growers to enter the industry by providing the skills and knowledge needed to get growing and bring their products to market. An example of this is the Get Herbed project, which is currently enabling local

entrepreneurs to grow herbs and microgreens to sell to local cafes and restaurants. This same gardening operation is also used as a training ground to upskill local job seekers and budding small businesspeople.

Ms Lewis said that over time, Get Stuffed will aim to offer a range of education and training options tailored to all levels of skill and experience in growing food, and run a successful enterprise in the local food economy.

Gippsland’s food cultivation and production was on show in February, when the Get Cheffed event was held in Morwell.

This brought together local produce, food experts and food lovers for a farmers’ market, a series of ‘Chef Up’ workshops, with local food heroes demonstrating how to make jams and preserves, sourdough bread and granola at home. The day concluded with the signature event – the ‘Chef Off’. This involved a live battle between four chefs from four corners of Gippsland, who cooked with local produce in a bid to create the best ‘Modern Taste of Gippsland’ dish.

### GET INVOLVED

There are many ways that vegetable growers and industry members can get involved in the Get Stuffed initiative.

“We would love to hear from growers who are looking to employ new starters in the industry or provide placement and mentoring support,” Ms Lewis said.

The initiative is also looking to expand its Get Growing education and training suite to include a broader diversity of teachers, sharing a range of growing and processing techniques.

Any growers trading or growing produce in the Latrobe Valley can list their business on the 50 Mile Directory ([reactivate.org.au/50miledirectory](http://reactivate.org.au/50miledirectory)).

Get Stuffed also enables local growers to cut down their food waste by sharing unwanted fruit and veg through its Get Swapped initiative. Growers are welcome to get in touch with Ms Lewis if they are interested in partnering with an existing Get Swapped hub, or know of someone who would like to start a new hub in the Latrobe Valley.

### INFO

For more information, please visit [reactivate.org.au](http://reactivate.org.au). To keep up-to-date with the latest news and information, follow ‘ReActivate Latrobe Valley’ on Facebook: [facebook.com/reactivatelatrobevalley](https://facebook.com/reactivatelatrobevalley).



Image courtesy of DPIRD.

## INDUSTRY PLANS TO HELP GROWERS MANAGE TOMATO POTATO PSYLLID THROUGH THE SUPPLY CHAIN

It’s critical for industries affected by the tomato potato psyllid (TPP) to develop and implement management plans to effectively control TPP. The plans demonstrate industry commitment to minimising the spread and impact of TPP and the associated bacteria, *Candidatus Liberibacter solanacearum* (CLso), throughout the supply chain.

The Western Australian Department of Primary Industries and Regional Development (DPIRD), in partnership with peak industry bodies, is developing industry-specific Enterprise (on-farm) Management Plans to help growers manage the tomato potato psyllid/*Candidatus Liberibacter solanacearum* (TPP/CLso) complex according to best practice standards.

These plans will be a tool for growers, containing the most current scientific information about the pest, and outline production and biosecurity strategies to manage TPP.

### WHAT IS AN ENTERPRISE MANAGEMENT PLAN?

An Enterprise Management Plan brings together the best-available knowledge into one easily-accessible resource for growers, and includes five key components:

1. How to identify TPP and the CLso bacterium.
2. Risk pathways.
3. Control and management options.
4. Biosecurity awareness and implementation.
5. Post-farm gate management.

The plans use existing good practice, biosecurity and quality assurance and certification documents to build on current systems and avoid duplication.

Enterprise Management Plans are essential in supporting ongoing efforts to renew and maintain market access, as well as underpin certification and assurance schemes. The plans will also help growers and industry manage TPP both pre- and post-farm gate.

Much of the information is available from local, interstate or international sources so it will bring this information together in a user-friendly format relevant to each industry. Any gaps in knowledge will be flagged for further research.

The vegetable, potato, nursery and garden, and processing tomato industries will have these plans. AUSVEG, vegetablesWA, Potato Growers Association of WA, Australian Processing Tomatoes Research Council and the Nursery and Garden Industry Association are working with the department to develop industry-specific plans for their members.

Growers will be able to access their industry plan online and at industry information sessions during May 2018.

Visit [agric.wa.gov.au/tpp](http://agric.wa.gov.au/tpp) for more information about TPP and the CLso bacterium, including fact sheets, photos and monitoring guides.

Western Australia has tested more than 10,400 TPP for CLso with no detection of the bacteria. No detection under the nationally-agreed TPP surveillance program will provide a high level of confidence of Western Australia’s freedom from CLso.

### WA COMPLETES TPP SURVEILLANCE AND TESTING FOR CLSO BACTERIA

The Western Australian Department of Primary Industries and Regional Development has wrapped up autumn surveillance for the tomato potato psyllid (TPP), with no detections of the *Candidatus Liberibacter solanacearum* (CLso) bacterium.

TPP Project Manager Dr Ian Wilkinson said the significant surveillance campaign completes the third round of surveillance in Western Australia since TPP was detected in February last year.

“Central to surveillance activities is testing TPP to confirm the presence or absence of CLso, a damaging plant bacterium which can cause zebra chip disease in potato,” Dr Wilkinson said.

“We tested 2,280 TPP for CLso during the autumn campaign with no detections of the bacteria. This takes the total number of TPP tested to more than 10,000.”

For market access to be considered by other states, Western Australia was required to complete TPP surveillance and testing for CLso over a period of three seasons to ensure a high level of confidence in the results.

“Western Australia will present these results to the Consultative Committee on Emergency Plant Pests, and is working with government and industry partners as a priority to assist the assessment process for proof of absence of CLso,” Dr Wilkinson said.

Surveillance was undertaken as part of the nationally-agreed Transition to Management plan, and targeted known populations of TPP across the Perth metropolitan area and surrounds.

“The Western Australian community has once again rallied to support surveillance efforts with 430 residents hosting sticky traps in their gardens during autumn to help capture TPP and meet surveillance targets,” Dr Wilkinson said.

“We would like to thank everyone who participated in TPP surveillance for their support of our valuable horticultural industries.”

For more information, including signs and symptoms of TPP and control options, please visit [agric.wa.gov.au/tpp](http://agric.wa.gov.au/tpp).

### INFO

For more information on the Enterprise Management Plans please contact Gavin Foord at Foord Systems on 0435 018 189 or [gfoord@westnet.com.au](mailto:gfoord@westnet.com.au).



## STRENGTHENING RELATIONSHIPS TO IMPROVE AN INCURSION RESPONSE

The importance of learning from past incursions is essential when planning for potential future incursions. Given its experience with previous plant pest incursions, the Northern Territory recently hosted a workshop that focused on industry preparedness and the role indigenous communities can play in a response. AUSVEG Biosecurity Advisor Dr Kevin Clayton-Greene reports.



The past few *Biosecurity brief* columns have mentioned the changes occurring in the relationship between industry and governments in the biosecurity space. The recent eastern state approach to dealing with tomato potato psyllid (TPP), should it arrive, being a case in point.

Another example of this improved collaboration occurred in February when Plant Health Australia visited Darwin to conduct a Biosecurity Industry Liaison Workshop. This one-day event focused on incursion preparedness, and I was invited to the workshop along with a range of other industries and affected groups.

Northern Territory is at the frontline for biosecurity due to its proximity to Papua New Guinea and Indonesia – both of which have pests that could cause considerable damage to Australian horticulture. Exotic fruit flies and type two late blight are some of the pests/pathogens that could create havoc in Australia.

The increasing horticultural development of Australia's north can only increase the probability of an exotic incursion gaining a foothold. Vigilance, such as that provided by the Northern Australian Quarantine Strategy (NAQS), is of ever-increasing importance. The small population of the Northern Territory (less than 250,000 people) also means that its resources are very limited.

Of particular interest for the Northern Territory (but also north Queensland and northern Western Australia) is the important role that indigenous communities can play in a response and how important it is to develop a strong relationship with them.

The purpose of the workshop was to learn from past incursions in order to improve response effectiveness when the next one occurs. Along with numerous industry representatives (not just plant-based), there were also some indigenous community representatives and government personnel.

The Northern Territory has had numerous incursions over the past decade; some of which have been very expensive but also successful (e.g. banana freckle is on the cusp of being eradicated).

While I was asked to contribute from a vegetable perspective, it was clear that the experiences of all concerned were often very similar. It is also apparent that the complexity of Australia's biosecurity system – particularly how and what happens during a response – is a major roadblock.

Even for those who work in the biosecurity space on a daily basis, there is still some confusion about roles and responsibilities. The positive thing about these sorts of workshops is that they give people a chance to clarify these areas before an incursion actually occurs.

### UNDERSTANDING AN EMERGENCY RESPONSE

Industry personnel play a key role in an incursion and it is vital that they are involved from day one. It is essential that those involved understand the Emergency Plant Pest Response Deed (EPPRD), the role of industry and also what is involved in Cost Sharing, Normal Commitments and Owner Reimbursement Costs (ORCs). Industry is also in the best position to identify financial hardship and ensure that counselling (financial and emotional) can be provided where required. This latter point is something that has not been done very well in the past and needs to be part of any response preparation.

It is also important that industry is actively involved in response plan preparation and that an initial response plan is in place as soon as possible. Without a response plan, there can be no ORCs. Furthermore, unless eradication has been attempted, a Cost Shared Transition to Management cannot occur.

It is therefore incumbent upon the local industry and the peak industry bodies to be closely involved in the response plan to ensure it is realistic and will "pass muster" at the National Management Group (NMG). Note that for a response plan to be approved and therefore actioned at the NMG, all parties must agree on the budget.

Lastly it must always be borne in mind that the EPPRD is a national response and that local and national priorities do not always align.

Coming back to the workshop in the Northern Territory, it was a particularly worthy exercise and its biosecurity personnel are to be congratulated on this initiative. Noting the turnover in staff in many jurisdictions (and in industry), it is suggested that this exercise should be repeated by others in Australia.

In the next brief I will talk about the sort of areas where industry can make a real difference in response plan preparations.

#### INFO

For more information, contact AUSVEG on 03 9882 0277 or email [info@ausveg.com.au](mailto:info@ausveg.com.au).

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

Project Number: VG15023



PhD student Vongai Dakwa is investigating ways to extend the shelf life of fresh cut leafy vegetables. Image courtesy of TIA.

## INVESTIGATING INFLUENCES THAT AFFECT LEAFY VEG SHELF LIFE

Baby leaf vegetable losses can occur across the supply chain, from production through to retail. Tasmanian Institute of Agriculture (TIA) PhD student Vongai Dakwa is in her third year of a research project on extending the shelf life of fresh cut leafy vegetables, such as baby spinach. She spoke to *Vegetables Australia* about her findings so far.

There are currently 10 PhD projects taking place at the Australian Research Council (ARC) Training Centre for Innovative Horticultural Products, based at the University of Tasmania's Institute of Agriculture.

The Centre is training students to develop new, innovative products for the fresh produce sector, which have an improved shelf life and quality. The research spans across horticulture, food science and market analysis. All projects are relevant to the horticultural supply chains of Woolworth's supermarket and students work in collaboration with partners from Australia's fresh produce sector to solve real problems.

Centre PhD student Vongai Dakwa is contributing to this research. Working closely with Houston's Farm in Tasmania – a grower and processor of baby leaf vegetables – the main aim of Vongai's project is to increase the shelf life of these fresh cut products without compromising product quality and safety. Houston's Farm, an industry partner of the Centre, has been involved in the research process, and also supplies Vongai with access to commercially-available baby spinach and lettuce.

### PROJECT FINDINGS

Baby leaf vegetables have a high respiration rate and a short shelf life of about 12 days with refrigeration. Losses can occur along the supply chain and during retail storage due to poor temperature management and other factors.

Vongai has been conducting a range of laboratory experiments in consultation with Houston's Farm to examine factors that can be controlled by the industry to increase shelf life.

"In particular, I have been investigating the influence of storage temperature, sanitisers and mechanical damage to leaves," she said.

"I have confirmed that mechanical damage, which bruises tender baby leaves, and the presence of cotyledons (the first leaves that emerge from a spinach plant), in packaged baby spinach can significantly reduce shelf life."

Vongai has also investigated the effectiveness of surfactants to remove grit from leaves, and how this treatment affects leaf appearance and consumer perception of the product.

"I have found that if a surfactant is added to the sanitiser when washing baby spinach and coral lettuce, it improves grit removal without compromising product quality or shelf life," she said.

### NEXT STEPS

As research results have shown that bruising negatively impacts shelf life, Vongai will now compare the microbial community of bruised and intact baby spinach leaves and determine bacterial changes during the course of the product's shelf life.

"I will also study how the sanitisation process influences the leaf microbial community," she said.

In addition, Vongai will examine packaging options to assist in extending the shelf life of these leafy veg products.

While Vongai's project is returning encouraging results, there are other factors that can affect the shelf life of vegetable products.

"While my studies have focused on post-harvest factors (temperature management, bruising, processing, type of packaging), pre-harvest factors (type of cultivar, conditions during growth, nutrient management, maturity at harvest) can also have major impacts on shelf life," Vongai said.

### GROWER BENEFITS

Vongai said that there will be advantages from this project, not just for vegetable growers and processors, but for consumers and the Australian public.

"I hope that solving the problem of improving shelf life without compromising food safety will reduce waste and improve access to nutritious and affordable fresh vegetables to everyone," she said.

"Changes in consumer behaviour, technology and climate are providing opportunities to develop new vegetable products. However, we need to ensure that new food products meet or exceed quality and safety expectations.

"I am passionate about this field of work and would like to continue working with the fresh produce industry after I complete my PhD."

#### INFO

For more information please visit [utas.edu.au/arc-training-centre](http://utas.edu.au/arc-training-centre) or follow @InnovativeHort on Twitter, or email [innovativehort.arc@utas.edu.au](mailto:innovativehort.arc@utas.edu.au).

Vongai Dakwa is a PhD candidate of the ARC Training Centre for Innovative Horticultural Products, located at the Tasmanian Institute of Agriculture, a joint venture of the University of Tasmania and the Tasmanian Government.

The ARC Training Centre for Innovative Horticultural Products is funded by the Australian Government through the Australian Research Council Industrial Transformation Research Program (project number IC14010024), Woolworths and the University of Tasmania, with contributions from industry partners and research collaborators.

## MINOR USE PERMITS

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/ PLANT DISEASE/ TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER81196 VERSION 3	Selected vegetables. Please refer to the APVMA website for the full list.	Insecticide/miticide	Bifenthrin	Various insect pests. Please refer to the APVMA website for the full list.	08-Feb-16	31-Mar-21	All states except Vic
PER14033 VERSION 2	Snow peas and sugar snap peas	Insecticide	Lambda-cyhalothrin	Pasture webworm, cutworm, Rutherglen bug, thrips	01-Jun-13	31-May-23	All states except Vic
PER13114 VERSION 3	Celeriac	Herbicide	Prometryn	Weeds as per the approved label for carrots and celery	29-Mar-12	31-Mar-22	All states except Vic
PER12823 VERSION 3	Peppers (including capsicum, chillies and paprika) and eggplant	Herbicide	Trifluralin	Various broadleaf and grass weeds (as per the product label)	11-May-11	30-Jan-21	All states except Vic
PER12716 VERSION 2	Specified Asian root vegetables	Insecticide	Imidacloprid	Greenhouse whitefly, green peach aphid and suppression of plague thrips	12-Apr-15	30-Sep-20	All states except Vic
PER12612 VERSION 3	Potato	Insecticide	Alpha-cypermethrin	Garden weevil	29-Jun-11	30-Apr-21	WA and Tas only
PER12506 VERSION 6	Eggplant	Insecticide	Dimethoate	Queensland fruit fly and Mediterranean fruit fly	30-Jan-13	31-Oct-18	All states
PER12489 VERSION 2	Selected vegetables. Please refer to the APVMA website for the full list.	Insecticide	Imidacloprid	Various insect pests. Please refer to the APVMA website for the full list.	30-Jun-15	31-May-20	Cape gooseberry: QLD only; Celery, cucumber and peppers: All states except Vic
PER12447 VERSION 3	Peppers (capsicum and chilli), cucumber and lettuce (head and leafy)	Fungicide	Fenhexamid	Grey mould or botrytis rot	30-Sep-13	31-May-21	All states except Vic
PER12384 VERSION 3	Rhubarb	Herbicide	S-Metolachlor	Various broadleaf and grass weed (as per the product label for brassica crops)	18-Nov-10	31-Aug-20	All states
PER12378 VERSION 3	Ornamentals, tomato and sweet peppers (capsicum)	Insecticide	Acephate	Western flower thrips	25-Oct-10	31-Oct-20	All states except Vic
PER12357 VERSION 3	Parsnips	Herbicide	Linuron	Grass and broadleaf weeds (as per the approved label)	09-May-12	30-Sep-20	All states except Vic
PER12048 VERSION 3	Parsnip and carrots	Herbicide	Prometryn	Various weeds. Please refer to the APVMA website for the full list.	09-May-12	30-Sep-20	Parsnips: All states except Vic; Carrots: Qld only
PER10918 VERSION 2	Carrot, leafy lettuce, spinach and silverbeet	Insecticide	Imidacloprid	Greenhouse whitefly and aphids spp. (including green peach aphid, carrot aphid and fennel aphid)	30-Jun-15	30-Nov-19	All states

### LABEL UPDATES

Hort Innovation has been working with ADAMA and has provided data to support a label extension for Aphidex 800 Insecticide (800g/kg Pirimicarb) in a number of horticulture crops.

The Ahidex 800 label extension has been approved by the Australian Pesticides and Veterinary Medicines Authority (APVMA). Given the new label extension, the below permits will need to be surrendered or amended as the uses are now covered by a registration and Hort Innovation will request the surrender of PER13351, PER10875 and PER82359 within a six-month timeframe to allow growers sufficient time to use up current pirimicarb products they may have on hand containing the 500g/kg formulations that are covered under the permit.

Within the next six months permit PER14071 will be modified to remove celery and sweet corn crops that are now covered under the label registration and PER14864 will be modified to remove brassica leafy vegetables that is now covered under the label registration.

PERMIT NUMBER	DESCRIPTION	DATE ISSUED	EXPIRY DATE	PERMIT HOLDER
PER13351 VERSION 2	Pirimicarb (Pirimor)/eggplant/aphids	28-Jun-13	31-Mar-19	Growcom c/o Hort Innovation
PER10875 VERSION 3	Pirimicarb (Pirimor)/celeriac/aphids	07-May-12	30-Sep-20	Hort Innovation
PER82359	Pirimicarb (Pirimor)/chilli peppers/aphids	05-Feb-16	31-Mar-21	Growcom c/o Hort Innovation

The below permits will be modified to remove the uses now covered under the label registration. These include celery, sweet corn and brassica leafy vegetables.

PERMIT NUMBER	DESCRIPTION	DATE ISSUED	EXPIRY DATE	PERMIT HOLDER
PER14071	Pirimicarb (Pirimor)/ spring onions, celery, sweet corn/aphids	07-Jun-15	30-Jun-19	Growcom c/o Hort Innovation
PER14864	Pirimicarb (Pirimor)/sweetpotato, brassica leafy vegetables, chicory, radicchio, rocket/aphids	11-Nov-14	30-Jun-19	Growcom c/o Hort Innovation

### CONTROLLING WEEDS IN LEEKS

Hort Innovation has been working with Nufarm to extend its Dacthal® 900 WG (Chlorthal-dimethyl) label to include pre-emergent weed control in leeks. The label can be found on the APVMA website portal.apvma.gov.au/pubcris and the Nufarm website nufarm.com/AU/Home.

Refer to the below details for clarification

Product Name: Dacthal® 900 WG Pre-emergence Herbicide  
APVMA approval No: 59137/113217.

## AROUND THE STATES



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All growers and traders operating through the central markets must now have a valid Horticulture Produce Agreement (HPA) in place. Most packhouses will also need to have compliant HPAs with their suppliers. Those without a valid agreement risk being penalised by the Australian Competition and Consumer Commission (ACCC).

Only growers who sell directly to retailers, exports and processors are exempt.

Growcom has worked extensively over the past year to ensure that our members are informed of their rights and obligations under the Code. To ensure a smooth transition, Growcom has developed HPA templates for growers who choose to pursue either an agency or merchant style agreement with their wholesaler or packhouse, depending on the preference of both parties.

The templates were developed with significant input from solicitors, growers and grower organisations around Australia and are available to download from the Growcom website. They are a useful starting point for negotiations around HPAs and provide a clear and easy-to-understand outline of the responsibilities of both parties. The templates can be filled in electronically or printed out and filled in by hand.

Growcom strongly recommends for growers to have an open discussion with their traders before developing a detailed agreement, and to check the commercial terms schedule and the accompanying terms and conditions within that agreement to ensure they are not signing away their rights.

With the transition period now closed, the ACCC has cracked down on breaches of compliance and issued 15 compliance checks to horticultural traders across the wholesale central markets.

The ACCC received a steep increase in submissions following the release of an online tool for people to anonymously report concerns about competition or fair trading issues. Two hundred and fifty-five reports have been lodged in the last six months, an increase of 25 per cent compared with the previous six-month period.

The easy-to-use tool allows farmers to report potential breach of laws to the ACCC while keeping their IP addresses anonymous to protect their identities.

To access the tool, visit [app.whispli.com/accc-report-an-agricultural-issue-anonymously](http://app.whispli.com/accc-report-an-agricultural-issue-anonymously).

To download Growcom's HPA templates, visit [growcom.com.au/horticulture-produce-agreements-hpas](http://growcom.com.au/horticulture-produce-agreements-hpas).



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Cyclone Marcus did a great job of shocking Darwinites out of a false sense of security. Marcus was not a very strong cyclone, only a low- to mid-level two storm. In fact, the winds did very little damage to buildings – hardly a sheet of iron was removed or a window broken by the wind, and no one was hurt badly in the storm itself. What caused the damage was the trees. Huge African Mahogany trees that were planted all over Darwin following Cyclone Tracy in 1974 fell on top of roads and power lines, creating havoc with road access and power supplies.

These trees could be up to 30 metres tall, with similar width of canopy, and in the shallow, already sodden soils of Darwin, didn't stand a chance against even the modest winds of Marcus. The storm passed through Darwin in about two hours from 10.30am to 12.30pm, and that afternoon brought sunny skies and the sound of hundreds of chainsaws awakening from hibernation. Most Darwin residents had taken the usual advice and had three days' worth of essential supplies ready for power outages etc. Suburbs built after Tracy with underground power supplies hardly had any interruption to their power. Overhead power lines were a different story. Power was out in some areas

for 10 days as authorities struggled to remove the timber and repair the extensive damage to poles and wires. This was especially felt in the horticulture production areas around Darwin.

The power outages also highlighted a big problem with communication as we become more and more reliant on mobile technologies. The communication towers only had back-up battery power for 12 hours and no generators or solar panels. The emergency advice on the radios was to go to the website for the latest update on just about anything. Sorry... no comms. This is something that needs fixing immediately. Farm businesses need to communicate with their clients, buyers and suppliers, especially following this sort of extreme weather event. There was no way of contacting emergency services after the towers went down from the rural area, and with the number of amateur chainsaw operators attacking big fallen timber, that was a big worry. How hard is it to put solar panels on towers these days to keep the batteries charged?

The Dry is now here and we can get back to farming, probably a bit wiser and working on pruning the remaining large trees before the next time.



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NSW Farmers has launched its agenda for the forthcoming state election, to be held in March 2019. We have developed a five pillar plan, FOCUS, which identifies the five key areas where decision makers can influence the growth of our industry. Lifting profitability and improving sustainability, along with investing in stronger biosecurity and regional communities, is essential to making Australian agriculture this nation's next \$100 billion industry.

To reach our \$100 billion ambition, we seek investment in the elements, outcomes and enablers which can ensure New South Wales lifts the value of its agricultural production and leads the nation.

The five pillars are summarised as:

- FOUNDATIONS FOR A PROFITABLE FUTURE consolidates recent industry growth, trade and biosecurity advantages and builds on the solid foundations in the sector;
- OPPORTUNITY THROUGH INNOVATION puts productivity at the front and centre of

how we farm, using science, research and innovation to grow farming;

- COSTS DOWN, INCOMES UP places profitability and margin maximisation in the context of rising input costs, competition imbalances and access to finance;
  - UNLOCKING REGIONAL CAPACITY recognises the need for investment in the areas which sustain, and are sustained by, agriculture; and
  - STEWARDSHIP OF THE LAND AND OUR ENVIRONMENT ensures our farming practices leave our greatest resource – our environment – stronger, and more resilient, for the future.
- For New South Wales to become the nation's highest-value producer of agricultural products, we must FOCUS on the elements, enablers and actions that can make this industry even more productive into the future.

You can read more about our agenda on our website at [nswfarmers.org.au](http://nswfarmers.org.au). More detail will be released over coming months as we count down to a busy year of lobbying and advocacy to advance the agricultural agenda for the state.



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AUSVEG SA was proud to host around 250 South Australian growers and industry members at our 2018 AUSVEG SA and William Buck Vegetable Industry Dinner and Awards for Excellence on 11 April. This was a gala event held at the Arkaba Hotel in Adelaide.

Award winners were announced across a number of categories, with Scott Samwell of Eastbrook Farms taking out Grower of the Year and Daniel Quattrocchi of Monika's Organics receiving the Young Grower of the Year accolade. We were also fortunate to have Federal Assistant Minister for Agriculture and Water Resources, Senator the Hon. Anne Ruston and new South Australian Minister for Agriculture, the Hon. Tim Whetstone MP discuss their plans for horticulture in South Australia.

With a new government, we are grateful for the support shown towards our organisation and look forward to advocating on industry

issues with the incoming government. In the coming months, AUSVEG SA will instigate a significant membership drive to bring more growers on board with our organisation and we plan to significantly increase our presence in growing regions such as the Riverland. We hope to engage with a greater number of growers to build our strong membership base and help to take on more issues on behalf of the growers of South Australia.

In program news, AUSVEG SA now has a dedicated Export Manager working for our growers a few days a month. The goal of this position is to increase the amount of horticultural exports from the state and work with growers on a one-on-one basis to develop export capability in their business. As always growers can call us anytime or visit our offices at the South Australian Produce Markets to get involved in these programs.

## AROUND THE STATES



**John Shannon**  
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As vegetablesWA is the peak body for rockmelon growers in Western Australia, dealing with the fallout from the recent listeria outbreak has been a key activity. This has included assisting growers directly through our Quality Assurance Coordinator Joel Dinsdale as well as various media responses and meeting with the Department of Health.

Food safety is going to become an increasingly important topic for growers to come to grips with as the demands of consumers, and therefore the retailers, become stronger in this area. Help is at hand though – please deal with Joel if you're looking for some training or advice.

I recently attended a meeting with a number of Wanneroo growers, and the Western Australian Minister for Regional Development; Agriculture and Food, the Hon. Alannah MacTiernan MLC, to primarily discuss issues related to potential water entitlement cuts. The Minister can be in no doubt about the effect that these cuts would have on individual businesses as well as the broader district. She also made the point that it will be up to growers to see whether they wish to come together as they have in the Southern Forest and Myalup districts in any possible irrigation scheme. The

feasibility of this option is being developed by government currently.

I'm pleased to report that this has been a relatively good season for stable fly, with complaint numbers down on previous years. Growers should be commended for the significant work they have done in amending their practices to achieve this result. Further research is being undertaken by Dr David Cook at the Department of Primary Industries and Regional Development to see whether control can be achieved in even more effective and economical ways.

Biosecurity continues as a key issue for the industry given the Queensland fruit fly and brown marmorated stink bug detections made in Western Australia this summer. Government will need to better invest in our protection, while growers will need to do their own part by maintaining good on-farm biosecurity practices.

Our labour project, which is looking at a possible horticulture visa and better regulation of the labour hire sector, has continued and had a range of focus groups with growers and workers across a number of growing regions. This should provide a sound evidence base to work with government in improving the existing regime.

It's that time of year when the season is winding down in some areas and gearing up in others.

As this column went to press, peas have been completed and the bean harvest is nearly done. Like any other season, there were mixed results for some, bumper crops for others. Some pea crops were bypassed early in the season, and some bean crops were affected by disease, but all in all it was an excellent year harvest-wise for these two crops.

The potato harvest is going well. Early crops yielded well, and storage sheds are now open. It is the biggest tonnage year for quite some time for Simplot. McCain's harvest is also underway and running smoothly, as is the state's seed potato harvest.

The exceptionally late summer and early autumn have made for perfect harvest conditions, although it has taken a lot of irrigation in some areas, with even the traditionally wet north-west coast recording low rainfall figures.

The onion season, which has just wound up in the state, also benefited from increased irrigation and last year's warm spring weather. In this

instance, dry conditions also helped to reduce disease pressure on onion tops.

In other news, the Tasmanian Farmers and Graziers Association has recently circulated its draft climate change policy to members for feedback.

While many talk about climate change and what it will (or won't) mean on a broader scale, most farmers recognise that the climate is changing definitively. We continue to see weather records broken.

For agriculture, adaptability is the key, but we cannot ignore the mitigation discussion. Agriculture has a role to play in conversation about climate change, because in many ways we are one of the stakeholders with most skin in the game. Agriculture intrinsically relies on our climate to maintain and improve production levels. If the conditions deteriorate then so do our businesses and our families' futures.

The TFGA will continue to advocate for continued support of agricultural research, development and extension that furthers the knowledge of and mitigation for climate change on farms in Tasmania.



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VGA trading as AUSVEG VIC

The AUSVEG VIC and Wolfdene Awards for Excellence was held at Kooyong Tennis Club on Friday 13 April. There were over 190 people in attendance to celebrate the important contributions of members of the state's vegetable and wider horticulture industry, and showcase their leadership, dedication and innovation.

The AUSVEG VIC and Wolfdene Awards for Excellence is an important event on the Victorian vegetable industry calendar. It plays an instrumental role in building the industry through recognising the achievements of individuals and businesses and congratulating industry leaders throughout Victoria.

The Awards for Excellence are a great way to bring everyone together in a social setting to recognise and celebrate the work that has been achieved throughout the year.

The AUSVEG VIC Executive Committee would like to congratulate all of the nominees and winners, and thank them for attending the awards night. Winners are as follows:

- Michael Bogicevic, Coolibah Herbs – Grower of the Year (proudly sponsored by E.E. Muir & Sons).
- Daniel Hammond, Bulmer Farms – Young Grower of the Year (proudly sponsored by Wolfdene).

- Danyang Ying, CSIRO – Industry Impact (proudly sponsored by AUSVEG VIC).
- East Gippsland Vegetable Innovation Days – Community Stewardship Award (proudly sponsored by FreshSelect).
- Lisa Corrigan, Corrigans Produce Farms – Women in Horticulture (proudly sponsored by Boomaroo).
- Jessica Page, IPM Technologies – Researcher of the Year (proudly sponsored by Visy).
- Chris Odell, Odell Bros – Environmental Award (proudly sponsored by Butler Market Gardens).
- Schreurs & Sons – R&D Adoption Award (proudly sponsored by VegNET Victoria).

The award winners will be nominated to represent Victoria at the National Awards for Excellence, to be held at Hort Connections 2018 in Brisbane from 18-20 June. AUSVEG VIC would like to encourage all growers and industry members to attend Hort Connections – a fantastic program has been put together which will be engaging and educational for all delegates, from small to large growing operations and across the supply chain. For more information, please contact the State Manager Tom Cohen or visit [hortconnections.com.au](http://hortconnections.com.au).



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## CALENDAR

**7 JUNE – 9 AUGUST:**  
VEGINNOVATIONS 2018  
REGIONAL ROADSHOW

**Where:** Tasmania, Western Australia, Queensland, Victoria and South Australia

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

**Further information:**  
[vegpro.com.au](http://vegpro.com.au)

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

**Where:** Darwin Convention Centre, Northern Territory

**What:** The Northern Australia Food Futures Conference 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 workshops as well as local farm visits and traditional plenary sessions accompanied by a social program.

**Further information:**  
[foodfuturesntfarmers.org.au](http://foodfuturesntfarmers.org.au)

**18-20 JUNE: HORT CONNECTIONS 2018**

**Where:** Brisbane Convention Centre, Queensland

**What:** A joint initiative between AUSVEG and the Produce Marketing Association Australia-New Zealand, Hort Connections 2018 is set to deliver another world-class event to growers and the supply chain alongside a range of industry co-hosts. Hort Connections 2018 is the premier event for the horticulture industry, encompassing the vegetable, fruit, cut floral and nursery sectors.

**Further information:**  
[hortconnections.com.au](http://hortconnections.com.au)



# HORT CONNECTIONS

18-20 June 2018  
Brisbane Convention Centre





**REGISTER NOW!**  
[hortconnections.com.au](http://hortconnections.com.au)

HORT CONNECTIONS 2018 CO-HOSTS

