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



Editorial

Perhaps the biggest decision to impact the industry in recent weeks was the Fair Work Commission's announcement of changes to the Horticulture Award to provide overtime rates, ordinary hours and public holiday rates for casual workers.

These changes came into effect on 15 April, after industry received just two weeks' notice to implement them. The key changes include:

- A 15% loading (in addition to the initial casual loading of 25%) for ordinary hours work performed on any day of the week between 8.31pm and 4.59am;
- In circumstances where an employee works more than 12 hours per engagement or per day, an overtime penalty rate of 150% (plus 25% casual loading); and
- In circumstances where an employee works more than 304 'ordinary hours' over an eight-week period (an average of 38 hours per week), an overtime penalty rate of 150% (plus 25% casual loading).

This decision follows a lengthy negotiation and review process since early 2015, when the Fair Work Commission first raised concerns about overtime for casuals in the horticulture sector. Since then, horticulture industry groups have advocated on behalf of growers to minimise the impact of these changes as much as possible. This included producing submissions and witness statements from industry on multiple occasions to outline the potential impacts of the proposed changes.

While the end result is undoubtedly not ideal, the industry would likely be in a far worse position if these negotiations had not occurred over the past four years.

It is no secret that the industry is already facing significant issues with finding workers to pick and harvest crops – this decision and the quickfire implementation period only exacerbated the issue and sent growers' wage bills skyrocketing.

AUSVEG has warned the major retailers that they should expect to have a conversation with their suppliers regarding

the quantum leap in labour costs and wages which will inevitably result from this ruling. It is unsustainable for this increase to be absorbed at the farm gate, and growers will need to pass these costs on through the supply chain to remain profitable.

While the changes are well and truly in effect, employers are urged to use the Fair Work Ombudsman PACT Calculator and the republished Horticulture Award pay guide for any assistance.

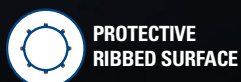
If for any reason there is confusion, or an employer would like to check their rates are correct, please contact the Fair Work Ombudsman on 13 13 94.

To read the Commission's final determination visit fwc.gov.au/documents/sites/awardsmodernfouryr/pr706485-horticulture.pdf.

You can also access a summary of the changes on the AUSVEG website at ausveg.com.au/articles/more-information-on-the-horticulture-award-and-changes-to-overtime-for-casuals.

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Message from the Chair

There are only a few weeks left until Hort Connections 2019, the biggest event in Australian horticulture, takes place at the Melbourne Convention and Exhibition Centre from 24-26 June. More than 3,250 local and international delegates are expected to take advantage of the myriad opportunities to learn from the industry's leaders at the conference and build their knowledge and networks.

A variety of informative and engaging presentations will inspire delegates on a range of topics this year, keeping within the conference theme of *Growing Our Food Future*.

The Annual Vegetable Industry Seminar will also take place on Monday 24 June, with invitations extended to levy-paying vegetable growers. They will hear from local and international experts about technologies and practices in global horticulture, as well as the latest information and fresh perspectives on our sector (see page 12).

In addition to the speaker sessions and networking events, the Hort Connections Trade Show will be open throughout the conference. This year, the exhibition will showcase over 300 local and global supply chain organisations and will offer valuable networking opportunities for members of the horticulture supply chain.

Hort Connections 2019 is an event not to be missed, and I look forward to seeing you all in Melbourne.

In other news, the AUSVEG Board is pleased to announce the appointment of Mark Napper as a Skills-Based Director.

Mark is an experienced agribusiness professional and orchardist and brings a wealth of knowledge to the role. As the former Deputy Chair of Hort Innovation, Mark will also share valuable insights on issues affecting the Australian horticulture industry, including how AUSVEG can play a role in driving a stronger and more sustainable future for the industry.

The AUSVEG Board and wider organisation congratulates Mark on his appointment and we look forward to working with him to pave the way for a more productive, profitable and competitive horticulture industry.

Bill Bulmer
Chair
AUSVEG



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Commodity Profile:

Pumpkin

\$68.8 million

The value of Australian pumpkin production for the year ending June 2018.

A search for pumpkin on the AUSVEG InfoVeg database produces 20 results. To find out which strategic levy investments featured pumpkin and the focus of these projects, visit ausveg.com.au/infoveg/infoveg-database.

119,546 tonnes

of pumpkin produced, with the majority grown in New South Wales and Queensland.

The strategic levy investment *Improved management of pumpkin brown etch (VG15064)* is undertaking research to find the cause of brown etch in pumpkin and minimise its occurrence, with the long-term goal of producing a truly etch-proof butternut pumpkin.

2,074 tonnes

of fresh pumpkin were exported from Australia for the year ending June 2018 with 77% of exports sent to Singapore.

According to Veggycation®, it is recommended to steam or bake pumpkin for maximum nutrient retention. Brighter orange flesh is healthier as more beta-carotene is present, which our bodies convert into vitamin A.

Harvest to Home reports that for the year ending 23 February 2019, pumpkins fell by 3.8 per cent in terms of dollar sales, and declined 4.2 per cent in terms of volume purchased (kg).

61%

of Australian households purchased pumpkin in 2017/18, buying an average of 933 grams per shopping trip.

Project Harvest Wave 41 discovered that half and whole pumpkins were the most commonly purchased format for consumers. Quartered pumpkins were also popular, with pre-packaged formats only making up a small proportion of purchases.

Kent, also known as Jap pumpkin, is an oval pumpkin with mottled green skin. *The Australian Horticulture Statistics Handbook Vegetables 2017/18* reports that Kent pumpkins accounted for 50 per cent of fresh production for the year ending June 2018.

Veggycation® recommends that butternut pumpkins should be stored at moderate relative humidity (50-70 per cent). Good ventilation is essential for optimum storage, as high humidity will promote decay.



Pumpkins have been cultivated for more than 5,000 years, and are believed to have originated in Central America. Pumpkin seeds were carried by explorers and nomadic tribes and eventually spread to Asia and Europe.

Source: *The Better Health Channel*.

Source:
Australian Horticulture Statistics Handbook Vegetables 2017/18.



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HORT CONNECTIONS

24-26 June 2019

Melbourne Convention Centre

GROWING OUR FOOD FUTURE



Brianna Casey - Foodbank Australia

**Breakfast Session,
Tuesday 25 June**

Brianna Casey is the CEO of Foodbank Australia, the country's largest hunger relief organisation. She joined Foodbank in July 2016, following her successful term as CEO of Australian Childcare Alliance New South Wales. Prior to that, she spent 14 years in agri-politics, both in NSW (as Policy Director) and Queensland (as CEO).



Samantha Gash - athlete and inspirational speaker

Plenary Session, Tuesday 25 June

Samantha Gash had a desire to challenge herself and make a difference in the world, and her journey has taken her to the four corners of the earth. The '4 Deserts Grand Slam' requires competitors to run four, 250-kilometre ultra-marathons across the driest, windiest, hottest and coldest deserts on Earth. Samantha made history by becoming the first woman and the youngest person at the time to complete the Grand Slam.

As an Ambassador for World Vision, Samantha has raised over \$150,000 to fund six education focused programs and she is also an ambassador for the Royal Flying Doctors Service. Samantha will present during Tuesday morning's Plenary Session.



Dr Sandro Demaio - *Ask the Doctor* Co-host

**Plenary Session,
Tuesday 25 June**

In April 2018, Dr Sandro Demaio became Chief Executive Officer of EAT: the science-based, global platform for food systems transformation. He has co-founded NCDFREE, a global social movement against non-communicable diseases using social media, short film and leadership events.

In 2015, Sandro founded *festival21*, assembling a team of knowledge leaders in staging a free celebration of community, food, culture and future in Melbourne. Sandro currently co-hosts the ABC television show *Ask the Doctor* - an innovative and exploratory factual medical series.

Delegates will hear from Sandro at Tuesday morning's Plenary Session from 8.00am.



Adam Liaw - Chef

**Plenary Session,
Tuesday 25 June**

Adam Liaw won *MasterChef Australia* in 2010, and is a unique voice in Australian food. He is a food columnist for *Fairfax* and *The Guardian*, and the author of five popular cookbooks on Asian cuisines.

Adam hosts the prime-time SBS food and travel program *Destination Flavour*, which received the ACTAA for the Best Lifestyle Program for 2016.

During Tuesday morning's plenary session, Adam will bring a unique view of the food and culture industry to Hort Connections 2019.



Tim Gentle – Think Digital

Over the Horizon Stream, Wednesday 26 June

Immersive technologies such as virtual reality (VR) and augmented reality (AR) are no longer gimmicky and fictional. Rather, these innovative technologies provide the latest way to communicate with our team, customers and stakeholders. Think Digital's FarmVR and FarmAR platforms focus on immersive technologies for agriculture, designed to educate people on where their food comes from and encourage them to consider a career in agriculture.

Tim will present at the 'Over the Horizon' Stream on Wednesday 26 June from 8.00am.



Angeline Achariya – Food Innovation Centre, Monash University

PMA A-NZ Stream, Tuesday 25 June

Angeline Achariya's career has spanned over 20 years working at multinational companies such as MasterFoods Japan, Fonterra and Yum! Brands, resulting in more than 800 innovations launched in grocery retail, food service and quick service restaurants.

Angeline's strong commercial and innovation skills paved the way for her leading and establishing the Mondelez International Food Innovation Centre (FIC). The FIC transitioned to Monash University in 2016 as a neutral, industry-shared innovation services start-up to support the growth and revitalisation of the Australian food and beverage industry.

Angeline will join PMA A-NZ CEO Darren Keating as part of the State of the Industry panel during the PMA A-NZ Stream from 2.00pm on Tuesday 25 June.



Fiona Krautil – Diversity Knowhow

PMA A-NZ Fresh Perspectives, Wednesday 26 June

Fiona is one of Australia's leading gender equity, diversity and inclusion specialists. Using the latest best practice and her extensive industry experience, she enables employers to develop robust strategies that deliver staff ownership and action. She also delivers innovative education solutions that energise people and increase employee engagement, innovation, customer service and profit.

Fiona will conduct a Diversity and Inclusion Awareness Session at PMA A-NZ Fresh Perspectives from 1.30pm on Wednesday 26 June.



Charles Luo – pitt&sherry

AUSVEG Stream, Tuesday 25 June

Charles has over eight years' experience in the delivery of energy consulting and energy efficiency upgrade projects. Over the past 18 months, Charles has worked heavily in the Victorian horticulture industry to develop energy efficiency and energy productivity strategies, and their respective business cases, to improve the industry's competitiveness through better energy utilisation.

Charles will present at the AUSVEG Stream on Tuesday 25 June, beginning at 2.00pm.

Innovative seminar aims to inspire veg growers

Vegetable levy-payers are invited to attend the Annual Vegetable Industry Seminar, which is being held in conjunction with Hort Connections 2019 on Monday 24 June. *Vegetables Australia* highlights some of the speakers who will present at the event.

During Hort Connections 2019, AUSVEG will manage and facilitate the Annual Vegetable Industry Seminar (AVIS, VG18001), a strategic levy investment under the Hort Innovation Vegetable Fund.

The seminar will feature seven local and international speakers who will tackle the most topical issues facing vegetable growers in 2019.

With a focus on new innovations in horticulture, the seminar will showcase a variety of ideas that are at the leading edge of the industry. Vegetable growers will gain an insight into new technologies, and exporting and business strategies to become more efficient, more productive and ultimately more profitable.



Thomas King

One speaker who will inspire delegates is Thomas King, a social entrepreneur and international speaker who was named Young Australian of the Year (Victoria) in 2015. At age 13, Thomas founded the world's highest viewed website on unsustainable palm oil production. He has since represented Australia in a climate change film for IMAX in the Arctic, helped direct a campaign that raised \$1.6 million to alleviate poverty in Cambodia, and led other environmental, animal protection and global development projects across five continents.

After realising the major contribution of industrial animal agriculture across these fields, Thomas founded Food Frontier to grow the ecosystem for healthier and more humane and sustainable protein innovations across the Asia Pacific, including plant-based and clean meat.



Roger Tripathi

Joining Thomas is Roger Tripathi, a global business leader with a broad-based multinational and multicultural background who has worked and lived on most continents.

Roger is a results-driven leader with more than 36 years of global business experience in the agriculture industry. He started as a plant breeder and later became a business turnaround specialist in various segments including fertiliser, seeds, ag-chem and bio-agriculture.

Roger's passion for bio-agriculture will be evident at AVIS; he truly believes that if all R&D and commercial companies focus on 'grower to consumer' and 'soil to shelf' with farmers' return on investment in mind, the industry can achieve true sustainability.



Casper van Kempen

Another AVIS speaker is Casper van Kempen from The Netherlands. Casper spent 17 years on international assignments, working in Switzerland, France, the United States, West Africa and the Caribbean. He also held several international senior sales and marketing management positions in flower and vegetable seed companies.

Casper had his first exposure to piracy and counterfeit products when directing a pharmaceutical wholesale company in West Africa. From 2006-10, he coordinated the annual anti-piracy campaign in flowers for Fleuroselect (flower breeders) in western Europe.

In 2010 he took up his present position, starting the Anti-Infringement Bureau (AIB) for Intellectual Property (IP) Rights on Plant Material in Brussels, with 15 vegetable seed companies as members. At the 2016 Interpol IP Crime Conference in London, AIB received the Award for Outstanding Public and Private Partnership in the Fight against Intellectual Property Piracy.

Valuable perspectives

Thomas, Roger and Casper represent the breadth of topics that will be discussed at AVIS, which was built on the popularity of the Vegetable Industry Export Seminar and Global Innovations in Horticulture Seminar from previous years.

Levy-paying vegetable growers are encouraged to attend the event and hear from local and international innovation experts on new and emerging technologies in horticulture around the world.

Find out more

Vegetable levy payers who would like to attend AVIS can contact AUSVEG on 03 9882 0277 or info@hortconnections.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: VG18001



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Popping corn onto the Tasmanian menu

Tasmanian-based vegetable growing operation Elphin Grove Farm is evolving, and Matthew Young is driving that shift by connecting with the local community to find out what consumers want from their fresh produce. Matthew speaks to Michelle De'Lisle about the changes in his family's business that led to the farm's sought-after signature product: popcorn.



Word of mouth and conversations within a community can spark all kinds of new ideas, particularly in business.

Add to this the importance of food: not only do we need food for everyday sustenance, but it's also an increasingly important focal point in many social gatherings. Consumers also want to know where their food comes from – the 'paddock to plate' movement has slowly gained traction in recent years.

Just ask third-generation vegetable grower Matthew Young from Elphin Grove Farm, located at East Sassafras in Tasmania's north-west. Matthew and his family run a mixed farming operation that includes growing sweet corn and celeriac for the fresh market, peas and beans for processing, potatoes for the French fry market, poppies for Tasmania's pharmaceutical market, and sheep and cattle.

Matthew and his wife Ruth, as well as his parents Ian and Lesley, are all Directors of Elphin Grove Farm. The operation has undergone significant changes in recent years, with Matthew taking over more of the farm production eight years ago. It has also transitioned from supplying produce under contract to a direct producer, which presented its challenges.

"We were growing everything under contract for processing companies and now we're marketing our own produce and putting our own brand on the produce; working at the market and directly marketing into restaurants, greengrocers and supermarkets," Matthew explains.

"The whole process behind it was a challenge. It's a big difference when you've got to sell something directly as opposed to just through a contract."

Conversations with vegetable industry members planted the seed of this business transition in the Young family's mind.

"When McCain's pulled its potato contracts, we went from growing a large volume of potatoes to growing nothing in the space of six months," Matthew says.

"This presented an opportunity to pick up the fresh market produce and run with it. It's been trial and error but through conversations with people and recognising markets, we've managed to pick it up."

Forging connections

Over the past five years, Matthew and his family has regularly attended the Harvest Market in Launceston. The weekly market takes place in the heart of the town, presenting Tasmanian growers and producers with an opportunity to sell directly to consumers. But that is not all: it also helped Matthew to develop new connections that led to Elphin Grove Farm supplying a top-end restaurant in Launceston.

"Through conversations with the chef from Stillwater, we found that he wanted some fresh baby corn to try. So, we picked immature super sweet corn that we grow and sell as mature cobs.

"That went really well so we sourced a baby corn variety and started growing that. It has been ridiculous in the last two seasons; quadrupling in sales this year compared to the year before."

Following this, Robyn Mayne from gourmet food business 'A pinch of...' approached Matthew to ask him about growing popcorn so she could sell it at the market along with her homemade flavourings.

"After a little bit of investigating, it turned out that the baby corn variety that we grow is actually a popping corn. I started taking through the baby corn that wasn't suitable in terms of size, letting it mature, and then producing popcorn from that," Matthew says.

At the moment, Matthew is growing small plots of the popping corn. He uses a push-hand planter to put the crops in and hand harvests all the fresh market corn.

"When it comes to popcorn, we do the planting, we handpick it and then husk it all; let it dry a bit and kernel it with a handle machine. With the early season corn, we put it through a dehydrator and dry it to the right moisture level. What we can leave hanging over winter and through summer dries out enough naturally," Matthew says.

As a result, business is booming for Elphin Grove Farm.

"It's only a very small enterprise at the moment, but the potential is just going through the roof. I'm turning people away because I can't supply enough product. It's outstripped anything that I thought it would be," he says.

Matthew is hoping to try different popcorn varieties, including butterfly popcorn (the variety used in cinemas) and mushroom popcorn, which has a large, rounder shape that makes it easier to coat with toppings such as chocolate or honey glazes.

Forward thinking

In addition to expanding its popping corn side of the business, Elphin Grove Farm will undergo further changes over the next decade to maintain its profitability and sustainability as a farming enterprise.

After Matthew's father Ian retires, employing a full-time staff member to help pick corn will be on the agenda.

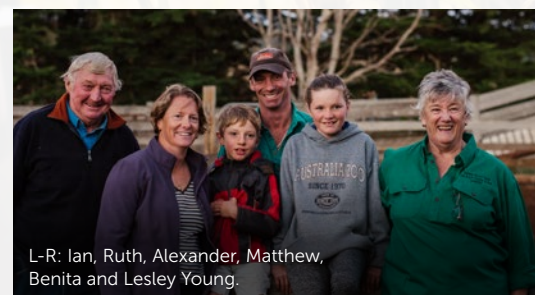
"It's keeping the balance of everything working so we can continue to sell good produce," Matthew says.

"We're interested in trialling things and the possibility of picking up other crops, but we have got to be smart about it and not overextend ourselves. Otherwise we start compromising the produce that we're growing now and getting a really good reputation for."

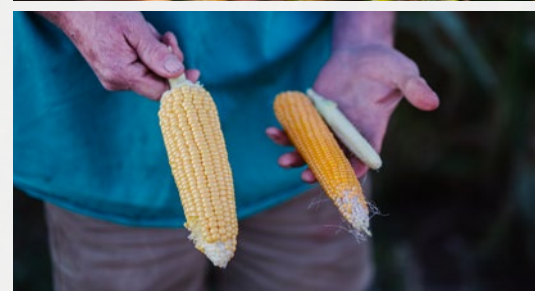
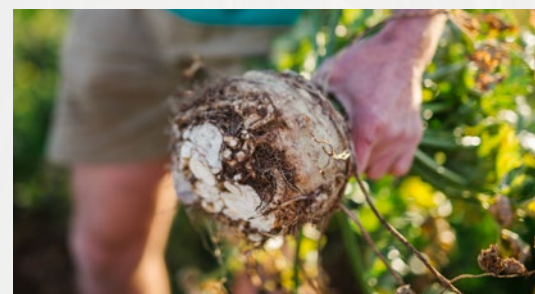
For Matthew, the feedback received from restaurants and consumers who cook with and enjoy his produce is very rewarding and makes the venture into marketing worthwhile.

"That's a big thing we miss out on when growing commodities for frozen products: it goes straight into a truck and disappears, and you rarely hear any feedback," Matthew says.

"To go to farmers' markets and have people come up to buy your corn and say that it's some of the best corn they've ever eaten is a confidence boost. It's receiving confirmation that what I'm doing is right."



L-R: Ian, Ruth, Alexander, Matthew, Benita and Lesley Young.



Looking forward, looking back at on-farm practice changes

It has been three years since the National Vegetable Extension Network (VegNET) was launched to extend vitally-important R&D information to growers. Tasmanian Vegetable Industry Development Officer (IDO) Theresa Chapman spoke to Simplot's Jo Tubb to discuss her perspective on the vegetable industry, while New South Wales IDOs Matthew Plunkett and Sylvia Jelinek report on their project highlights.



Tasmanian Vegetable Industry Development Officer Theresa Chapman.

Theresa Chapman – Tasmania

I sat down with Simplot Agricultural Manager Jo Tubb to hear about the Tasmanian processing vegetable industry from the heart of Simplot's busy factory in Devonport. Jo and her team work closely with growers and deal with the needs of the processing factory and its customers, giving her a unique insight into the realities of the industry from paddock to plate.

In the last eight years, Jo has observed a transition of generations in farming and with it, an uptake of precision agriculture and a willingness to invest in technology and new ideas. The increase in irrigation infrastructure throughout Simplot's growing regions has brought a need to engage with variable rate technologies and productivity-improving techniques.

I asked Jo for her view of what is going to change over the next 5-10 years. She expects new and better ways to improve productivity through new varieties, innovation and technology – a necessity in a price stable market. This will include further developments in precision agriculture, and innovations like Simplot's partnership with Joe Cook Ag's strip-till operation, which has shown to increase water use efficiency as well as improve soil and crop health.

Identifying and overcoming challenges

According to Jo, the biggest challenge to the industry is the increase in farm and processing costs while the market prices remain steady. The risk is tempered by an increasing demand for Australian-grown produce, which boosts confidence within the industry – growers feel able to invest in farm improvements, and Simplot can plan further ahead and negotiate longer-term contracts.

What does the industry need to improve? Jo highlighted a few gaps, as she sees it:

- Continuity for research funding – the vegetable industry is failing to find and retain people and knowledge, and maintain lasting collaborations and partnerships.

- Young people are unaware of the diversity of opportunities within horticulture and agriculture in general, and the industry is failing to attract and retain local workers and staff at all levels.
- Ag tech and the data it generates need better systems to integrate the different aspects and return value for growers.

As one VegNET phase ends, we can look to the next for continued effective extension and communication with the industry. This industry has many excellent people who can make a difference, so get in touch with your VegNET IDO to connect.

Matthew Plunkett and Sylvia Jelinek – New South Wales

The NSW VegNET project has engaged more than 1,950 vegetable growers and industry personnel, including over half of all vegetable growers in NSW, since it began in 2016.

In the last year, focus has turned to surveying growers on knowledge and practice change as a result of attending field days, farm walks and events delivered by Greater Sydney Local Land Services (LLS) in partnership with other LLS regions.

To date, more than 90 growers have reported adopting practice change on-farm, or plan to in the near future, as a direct result of the VegNET NSW project.

Practice change examples include: pest and disease management; Integrated Pest Management; spray application efficiency; soil health and using cover crops; low cost protected cropping; precision technologies including soil moisture monitoring; water recycling and irrigation; and workplace health and safety.

Widespread participation

A total of 133 industry representatives and growers engaged were surveyed, with 99 per cent reporting they had learnt something new and 86 per cent stating they had made or were intending to make changes on their farm.



L-R: Shirley Dang, Kim Ai Thi Nguyen and Sylvia Jelinek.



First Soil Wealth workshop with Cambodian growers in Cecil Park, NSW.



Vietnamese grower tour of south-west Sydney farms.



Simplot Agricultural Manager Jo Tubb.

In addition, 75 per cent of growers said their learnings had reduced their input costs and increased productivity by five per cent.

The extension of levy-funded research and development projects were planned and delivered with extensive consultation across Greater Sydney, Central Tablelands, North Coast and Riverina – the four major vegetable growing regions in NSW.

The following results were also achieved as part of the project:

- 114 events coordinated and administered.
- Six newsletters.
- 16 social media posts with an audience reach of 18,600.
- 466 vegetable growers engaged (nearly 50 per cent of the total in NSW).
- A protected cropping community of practice formed.
- Development of pest and disease posters and a Greenhouse Cucumber Manual.
- Six short protected cropping videos.
- R&D demonstration farm trials to show best practice.
- Translation of fact sheets in various languages in the areas of soil health and biosecurity.

LLS has worked closely with its culturally-diverse communities to extend information in a variety of languages, especially at the Sydney Markets and at the LLS demonstration farm in Richmond. One of the highlights of the project has been engaging over 80 per cent of the private sector to extend levy-funded research and development information to vegetable growers.

Find out more 

Please contact Theresa Chapman at theresac@rmcg.com.au, Matthew Plunkett on 0428 978 390 or matthew.plunkett@lls.nsw.gov.au or Sylvia Jelinek on 02 4724 2113 or sylvia.jelinek@lls.nsw.gov.au.

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

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

Project Number: VG15049

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From Tasmania to the USA – tillage, erosion and weed management innovations

The Soil Wealth and Integrated Crop Protection (ICP) projects work with growers nationally to put soil management and plant health research into practice. In this edition, we hear from strip-tillage experts in the United States; head to our demonstration sites in north-west Tasmania and Cowra, New South Wales for an update; and look at cutting-edge innovations in weed control technology. *Soil Wealth ICP Phase 2 (VG16078)* is a strategic levy investment under the Hort Innovation Vegetable Fund.



Figure 1: Strip-till in the field in Queensland.



Figure 2: The ripper mulcher in action in north-west Tasmania. Image courtesy of Theresa Chapman.

Erosion control machinery: Harvest Moon, Tasmania

Vegetable cropping can leave topsoil vulnerable to significant erosion.

The project team has developed an exciting package of resources to explore a unique machine, the ripper mulcher. This was invented and built in Tasmania by Bill Cotching to control erosion on sloping ground under cultivation. The ripper mulcher is one of the soil health tools being used by Harvest Moon, an intensive vegetable production business in north-west Tasmania.

You can read the fact sheet and listen to our first podcast in a series on the website to find out more.

Soil moisture the real winner at Cowra, New South Wales

The Cowra demonstration site in southern New South Wales is focused on improving soil health through cover crops and improved tillage.

Wildeye moisture monitors assess the volumetric water content in the soil, which is simply the ratio of water volume to soil volume. They are relatively inexpensive and simple to install, and readings are automatically uploaded to the internet. The sandy loam soil in Cowra can hold approximately 40 millimetres of available water in 30 centimetres of topsoil.

Wildeyes were installed in both the control area and the ryecorn cover crop areas. A 24 millimetre rain event on the night of 11 January 2019 showed a big difference in infiltration rates and soil moisture retention between fallow versus ground cover.

More about the soil moisture monitoring results for summer 2019 following a ryecorn cover crop being sown in winter 2018 can be found on the project website.

Webinar: Strip-tillage for vegetables and potatoes with Steve Peterson and Ben Pogioli

Strip-tillage combines the best of no-till and conventional tillage in one operation. Steve Peterson is a fourth-generation grower and manufacturer of innovative strip-till equipment in Illinois, USA. One of Steve's fundamental goals has been to reduce the number of passes through the paddock using equipment that is adjustable for a wide variety of crops, conditions and farming methods. Ben Pogioli is an experienced strip-till grower from the Atherton Tablelands, Queensland. Ben is passionate about tillage solutions and all the benefits of strip-tillage.

Together, Steve and Ben combine decades of experience to discuss equipment innovations for vegetable cropping. Learn from these industry experts on how strip-till will save you fuel and time, increase soil organic matter, reduce erosion and compaction, and how fertilisers can be banded at multiple depths. You can watch the webinar recording on our website.

Technology for controlling weeds: Global scan and review

The Soil Wealth and ICP project is scanning global technologies to bring you some of the most interesting and practical advances in weed management. Most new technology for controlling weeds will be a positive step forward for soil health and the environment, and will play an important role in our fight against herbicide-resistant weeds.

This global scan and review provides guidance on non-selective fallow paddock weed control, as well as selective in-crop weed control, and delivery technology.

Find out more R&D

You can access project resources, news and events from around the country at soilwealth.com.au. For more information, please contact project leaders Dr Gordon Rogers on 02 8627 1040 or gordon@ahr.com.au and Dr Anne-Maree Boland on 03 9882 2670 or anne-mareeb@armcg.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

Andrew Braham: Committed to healthy soil



South Australian vegetable grower Andrew Braham understands the importance of looking after his soils and trialling different ways to test research to improve productivity and quality on his farm.

Through international grower tours and learning about the physiology and biology of plants, Andrew has gained a thorough understanding of what is needed to produce 40,000 premium capsicum (bell pepper) plants in greenhouses.

It starts with soil nutrition, which Andrew likens to humans eating food to survive.

"Plants are the same as humans – they rise in the morning, and need a nutritious breakfast, lunch and dinner to survive," he says.

While he produces capsicums in a greenhouse, Andrew is looking to continue growing in soil rather than switching to a fully hydroponic growing operation.

"You still get flavour out of the soil. I feel that the cost to go from soil to hydroponics is a big jump, and we're still getting results out of the soil so there's no need to go to hydroponics. If we manage and look after our soils, it's going to look after our plants," he explains.


Andrew uses fertilisers and compost to keep his soils healthy, making sure that soil biology and nutrients in soil and plants are balanced perfectly. He confirms that everything is okay via plant and soil testing, including soil DNA tests. He also maintains strict biosecurity practices including having an on-farm footbath for staff and visitors to use before entering the production sites to prevent the arrival of pests and diseases.

As a Soil Wealth/ICP Project Reference Group member, Andrew is always looking to learn from research undertaken in this space and is happy that his farm is a demonstration site for the project.

"For me, the importance is understanding the biology of the soil and how we can improve it," he says.

"To improve our growing practices, we've got to do something different: you can't keep doing the same thing over and over again.

"We've noticed how little changes have made a big difference in our end product and our yields. It (using compost and monitoring) can be a big investment, but we've got a good return on our investment. You've got to keep changing in this industry, otherwise you will get left behind."

Find out more 

Please visit soilwealth.com.au.

Soil Wealth ICP Phase 2 has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16078

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Matthew Fealy: It's time to change how we farm in Australia

Queensland tropical fruit grower Matthew Fealy is a 2017 Nuffield Scholar. He recently released his report into Australian horticulture, which challenges the thought processes of Australian farming and encourages the industry to think ahead if it is to remain among the world's best fresh food producers in the future. *Vegetables Australia* spoke to Matthew about his findings.

Automation and robotics in horticulture is expanding, as the vegetable industry has witnessed with the development and testing of RIPPA, the Robot for Intelligent Perception and Precision Application, and the autonomous vegetable harvesting robot, Ladybird.

These robots are being designed to undertake a range of activities including assisting growers with weed control, autonomous harvesting and recording vital crop information, as well as providing a solution to ongoing labour availability issues.

However, Blue Sky Produce Manager Matthew Fealy was frustrated that many of these technological solutions were gaining media attention, but were not yet a common feature on farms.

"Looking over my fence, my neighbour's fence and every fence I could find, there was no actual implemented technology that was being spoken of," Matthew said.

This frustration led Matthew, an avocado and mango grower from Mareeba in north Queensland, to embark on a mission to find out why this kind of promising

technology was not being implemented on-farm. In 2017, Matthew received a Nuffield Scholarship which allowed him to travel across Europe, the Middle East, North and South America and the Asia Pacific to gain an insight into growing practices as well as agricultural worker programs around the world.

Shifting perception

Travelling around the world for 20 weeks opened Matthew's eyes to the changing landscape of horticultural practices and delivered a sobering message.

"It's time to change how we farm now. We have the fortune of using the European Union or the United States as our crystal ball in Australia, and all we have to do is look across the borders there and see how the social licence for farming is being challenged every day in these countries," he said.

"Food activism is happening and we're very fortunate in horticulture to perhaps not have the same pressure of animal production industries, but there's still pressure on how fruits and vegetables are being grown all around the world, so we need to take a really good internal look at our business and decide our greatest business risk.

"I believe it's in our over-reliance of our itinerant workforce, but also the consumer is really pushing for enormous amounts of transparency in food production. There are people leveraging this – including ourselves at Blue Sky Produce – and using social media to highlight the positive farming practices and positive farm choices that we make every day."

Matthew pointed to the upcoming European Union vote on the viability of growing soft fruits and vegetables completely organically without the use of any inorganic pesticides, herbicides or fertilisers.

"It's going to be piloted in Switzerland next year, so every grower there has to go organic or they're out of business.

"These are the changes that are happening, and we need to be ready for those sooner rather than later."

Thinking ahead

Upon his return to Australia, Matthew has adopted some high-density tree planting practices that will lead to two-dimensional architecture and robotic harvesting.

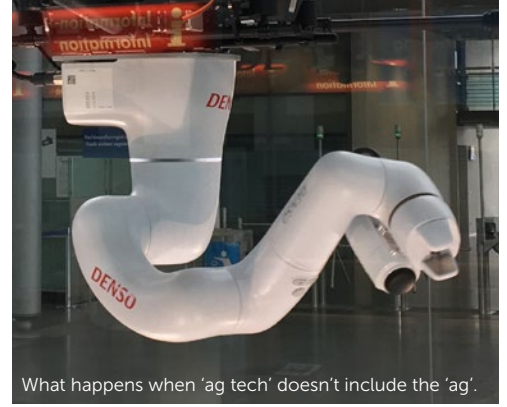
"Two-dimensional architecture means that the trees will be high and they will be wide, but not deep. They will be on a trellis, like vines," he explained.

"If you imagine an avocado tree today, most avocados in Australia are planted somewhere between an eight-metre by 10-metre kind of density. The average Australian avocado orchard is about 170 trees per hectare because they're great big three-dimensional trees."

In Israel, Matthew visited many orchards that were planted on three by three metres but kept at only 80 centimetres by 40 centimetres deep.

"They were allowed to grow up to 2.2 metres high, but it was a wall of trees so that the robots could come through using machine vision and identify fruit on the outside."

Matthew added that Australian horticulture needed to get out of the mindset of planting big trees.



The 'GreenBot' by Precision Makers in the Netherlands.

What happens when 'ag tech' doesn't include the 'ag'.



Taylor Farms' automated celery harvester in Salinas, California.



L-R: Laura Robinson, Kelly Patterson, Chris Honesty and Matthew at John Deere in Iowa.

"We need to put more money into research and development around root stock trials to reduce the vigour in our tropical environment in Australia," he said.

"We really need to look at the apple and pear industry and look at what it has pioneered over the last 40 years of how to highly manipulate and manage tree architecture and tree canopies to create two-dimensional trees.

"The apple and pear industry has done that to make it easier for humans to pick fruit, but inadvertently they have set themselves up for robotic harvesting. The rest of the tropical tree fruits and every other tree crop needs to move towards that if they want to be prepared for mechanical harvesting."

A learning curve

Today, Matthew is in the process of disseminating what he learnt on his

Nuffield journey to the horticulture and agriculture industries. He is also working with Hort Innovation and several university research institutions on a 'farmer first' perspective to ensure levy funds are being invested wisely and resulting in adoptable technology being delivered on-farm.

Matthew admitted that the Nuffield Scholarship was a challenging experience, both personally and professionally.

"Professionally, it's a once-in-a-lifetime journey studying for your particular topic and you get opportunities you could never dream of," he said.

"But there are personal challenges of living with people on buses and planes and hostels for 16 weeks and nobody's slept and nobody's had enough coffee. And there were clashes – having high-level discussions on low-sleep and low-caffeine levels – but you really get to challenge your own opinions and thought processes."

Matthew added the scholarship was also a "broadening of horizons".

"Sometimes in farming, we can get caught with our blinkers on a bit, because we do become so engrossed in our own problems that we don't realise that there's an industry just over the fence that had been battling that same problem and solved it 10 years ago.

"I whole-heartedly can recommend a Nuffield journey for anybody in agriculture."

Find out more R&D

To read Matthew Fealy's report *Robotics, Automation and Emerging Technologies for the Future of Australian Horticulture: An in-depth investigation of cutting edge existing, and near future technology and why growers need to rethink farming today*, please visit nuffieldinternational.org/live/Report/AU/2017/matthew-fealy.

For more information or to provide your feedback on the report, please contact Matthew Fealy on 0402 412 471 or matt@hortrobotics.com.

Applications now open for 2020 Nuffield Scholarships

Australia's leading agricultural research scholarship is once again open to the next generation of growers looking to unearth innovative practices and cultivate their global networks to drive change in their businesses.

Applications for the 2020 Nuffield Scholarship program opened on 1 April 2019, and Nuffield Australia is urging young growers with a desire to drive their knowledge and businesses forward to apply.

This year, there are more than 25 Nuffield Scholarships on offer – including a Hort Innovation scholarship for a vegetable grower – and each is valued at \$30,000. Applications close on 14 June.

In Australia alone, Nuffield has an Alumni of over 400 Scholars who have gone on to produce industry and community change, unlock new growing and farming techniques and drive economic development across the country.

Successful recipients of the 2020 Nuffield Scholarships will be announced during the Nuffield Australia National Conference. This will take place at the EKKA precinct in Brisbane from 17-19 September 2019.



Peter March.



Strategic use of genetic resistance

Many growers rely on vegetable varieties with resistance traits to manage certain pests and diseases. Syngenta Technical Sales Specialist South Australia Peter March explains the complexities surrounding genetic resistance in vegetable varieties and the importance of using an integrated approach to manage pests and diseases in the long-term.

It's always rewarding when a company like Syngenta can bring a new vegetable variety to market. A lot of time, effort and money is invested into these new releases. Often, they come with in-built resistance traits to help in the fight against significant pests or diseases.

The uptake of a new variety can be particularly swift when incidence and severity of a disease or pest is high, or the resistance of a previous industry standard is inherently weak or has broken down. Too many vegetable varieties that have contained a host of favourable traits for appearance, growth and taste have been discarded over the years because they have succumbed to pest or disease pressure.

Australian examples

'Clovis' was a leading greenhouse capsicum variety in South Australia for close to two decades until tomato spotted wilt virus (TSWV) appeared. It necessitated the introduction of TSWV varietal resistance (intermediate) through 'Remy'. An ongoing struggle ever since to control TSWV has brought with it heavy thrip pressure, and that in itself has created significant management issues in terms of vector control.

Tomato mosaic virus (ToMV) in capsicums is another example, and growers have become heavily reliant on resistance through varieties like 'Bloodshot', 'Infrared' and 'Biela' to manage this disease. Then there is downy mildew in lettuce and spinach, where continuous mutations of this fungal pathogen have necessitated a huge breeding effort to be put into varietal resistance to keep up with this ever-evolving disease challenge.

This approach desperately needs to change, and more balanced management implemented to reduce sole reliance on varietal resistance.

The tomato yellow leaf curl virus (TYLCV) outbreak in Queensland in the late-2000s, particularly in Bundaberg and then in Bowen, is an example of how a virus outbreak can change the market dynamics. Growers were forced to change to resistant varieties that did not necessarily perform the same agronomically or have the same fruit quality. It's only now, eight years on, that varieties such as 'Rifle' are meeting the standards that once were.

As an industry we need to do a better job of taking a long-term view and protecting the genetic integrity of available varieties. While genetic resistance provides a means by which growers can manage the impact of a pest or disease, experience has shown what happens with an over-reliance on these traits.

Key lessons learnt

Heavy reliance on in-built genetic resistance places those genes under huge pressure because there is just so much naturally-occurring biological diversity out there, and pests and diseases are continuously evolving.

No variety should be regarded as having 100 per cent resistance; its resistance status can be broken down. So, while genetic resistance is part of the solution, I stress – it is only part of the solution.

An integrated approach, using all available tools to manage pests and diseases, will support resistance longevity. This means:

- Monitoring to determine pest or disease incidence and pressure. Identification is vital, as incorrect diagnosis can lead to the wrong control measures being used.
- Utilisation of the best possible insecticides to control vectors that carry or transmit pathogens and fungicides to protect the crop ahead of a disease outbreak.
- Control weeds and other virus hosts and destroy old crops.
- Apply the most IPM-compatible crop protection products at the right time and rate.
- Utilise beneficial species and predators to feed on vector populations.
- Implement best practice farm hygiene.

One final note: new technology has given breeders the ability to add resistance to existing varieties. However, growers should understand that this can change the performance of the variety, even though it is basically the same as the original – with the resistance added. Growers will need to adapt to the needs of the updated variety.

Find out more R&D

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

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

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SWP: SeasonalWorker@jobs.gov.au or phone: (02) 6240 5234





Managing performance in your workplace

With the launch of the Fair Farms training and certification program just around the corner, Growcom's Fair Farms Initiative team provides an update on the program and shares some tips to help manage worker performance.

Workers are often considered the biggest cost to a grower, but you can also look at them as your biggest asset. This is why the Fair Farms Standard advocates for businesses to have policies and procedures in place to ensure that:

- Workers understand their performance and behavioural requirements.
- Poor performance and behavioural issues are managed appropriately.

Having effective policies and procedures in place will maximise your worker performance and efficiency, which adds directly to your bottom line.

So how do you manage performance? Unfortunately, there is no 'one size fits all' approach, as we all know what works for full-time farm hands might not necessarily work very well for a seasonal backpacker or short-term picker sent by a labour hire contractor. However, applying the following principles will make a notable difference:

Step one: Plan

Before you create a performance management policy, look at your business goals for the year ahead and think about what you need out of your workforce to meet your goals. Then, you can identify what good performance and poor performance looks like in your business. Remember to consider how

you should manage performance for the different types of workers you have (for example ongoing chats with short-term backpackers, planned meetings at the end of season with full-time and regular casuals, or regular one-to-one sessions with your key managers and supervisory staff).

Step two: Document

Now that you have an understanding of your business goals, your workforce and their needs for performance management, you can put it all into a policy document. The policy should outline what you expect of your workers, how you're going to manage their performance and the process of managing poor performance.

Step three: Implement

To reap the benefits of the performance management process, the most important step is to implement the policy. To ensure you get the most out of your workers' performance:

- Include the policy in your induction process.
- Have regular conversations with your workers about their performance and provide feedback, both when they underperform and when they're doing a great job.
- Offer support. If you have identified an issue, discuss with the worker how you can help them improve.

It is important to remember that performance management is a two-way process. Giving workers a voice will help them stay engaged and perform to the best of their ability.

Fair Farms will offer tailored training modules to growers for performance management and other subjects covered by the Fair Farms Standard.

Fair Farms project implementation update

The official start date for the program is now set – we are going live on 11 June 2019. From this date, Fair Farms will take registrations from growers and other participants who can then begin their training and certification pathway. More information will be provided closer to the date on where and how to sign up.

Over the past weeks, the Fair Farms team has been consulting with various stakeholder groups including growers, other members of the horticulture supply chain, the Australian Workers Union (AWU) and retailers. The objective of these consultations was to gain an overall understanding and support from stakeholders regarding the Fair Farms Standard and other key documents such as the Fair Farms Rules.

We are now in the process of preparing the final version of the Standard with which to launch the program in June. The Fair Farms Standard and other scheme documents are 'live documents' and will continuously be reviewed, improved and updated as we begin with the roll-out and learn further lessons.

You can continue to register your interest in Fair Farms via the Growcom website to ensure that you are kept informed: growcom.com.au/fairfarmsinitiative.

Find out more R&D

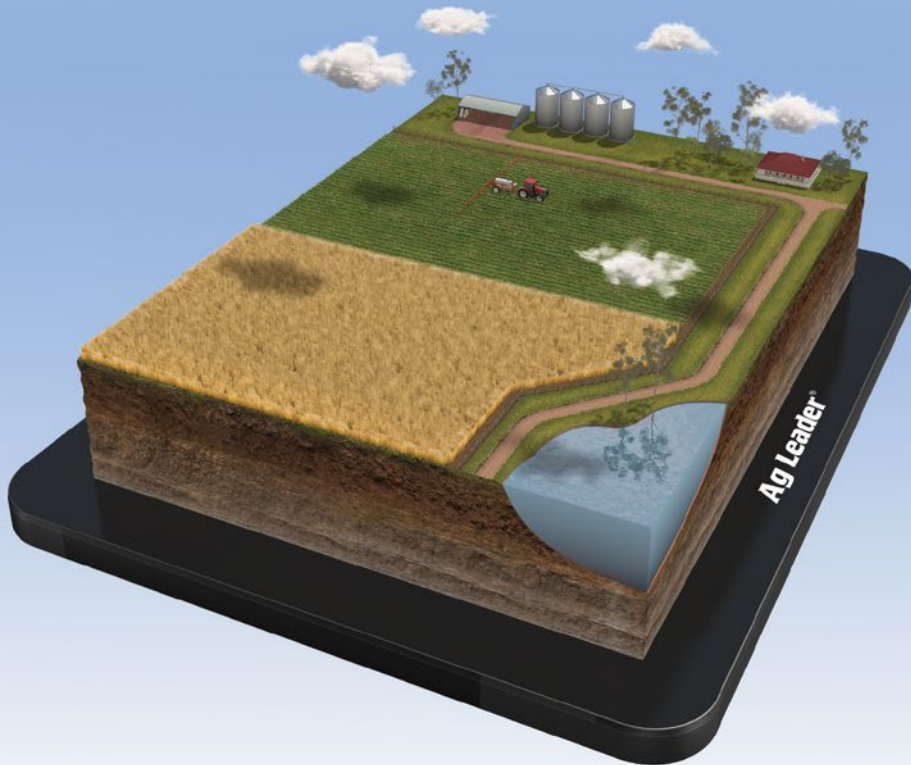
Information regarding your obligations as an employer is available at fairwork.gov.au and growcom.com.au.

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

European mission inspires leading Australian growers

In February, 11 growers and vegetable industry members travelled to the Netherlands and Spain, including a visit to Berlin Fruit Logistica, as part of the 2019 European Industry Leadership and Development Mission. Tour Leader Zarmeen Hassan reports on the highlights of the mission and what the Australian growers learnt from visits to local farms and other industry stakeholders.

It was a perfect mix of experience and new blood from the vegetable industry when 11 growers from different regions, crops and production systems came together with a singular mission of learning from international expertise. With increasing climatic challenges and the growing interest in different cropping systems, the tour that began with Berlin Fruit Logistica primarily focused around protected cropping – visiting the Netherlands to study hi-tech glasshouse protected cropping, and then travelling to Almeria, Spain to study greenhouse cropping.



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Koppert Cress owner Rob Baan.



Greenhouses in Almeria, Spain.



Leafy vegetables glasshouse in the Netherlands.



Cucumbers growing in an Almeria greenhouse.

Berlin Fruit Logistica: Germany

The first stop for the 11 Australian vegetable levy-paying growers was Berlin, where they spent three days attending one of the world's leading fresh produce trade shows.

Berlin Fruit Logistica brings together over 3,200 exhibiting companies to showcase their products and services to over 78,000 trade visitors from around the world, and delegates gained an insight into the latest technical innovations, industry research and industry networks through their participation at the event.

With the world's leading companies exhibiting at the Berlin Fruit Logistica, the growers were able to expand their horizons on the sheer extent of what is available and possible in the world of agriculture. And really, one is only limited by their imagination now.

There were three overarching themes that the growers witnessed during their visit. Firstly, there was a key focus on **consumer marketing**, encouraging consumers to eat more fruits and vegetables. This expanded to a diverse range of options, from innovation and fun packaging, particularly convenient consumption sizing and fun options for children. Secondly, **waste-free and specifically plastic-free packaging** was a significant focus, with numerous sustainable packaging options on display. Third, of course, was **technology across all aspects of food production** – from mechanical harvesting to protected food production and pest and disease management.

The group was invited to visit the Rijk Zwaan Retail Centre in Berlin which simulates a grocery store and maps the consumer's purchase decision journey and preferences through research. Therefore, the company is able to offer its customers tailor-made research options.

It was fascinating to see the trend of seed and input producers get closer to the end consumer to understand their needs.

Biogas developments

An hour and a half drive from Berlin, the Weltec Biopower plant in Arneburg was a fascinating insight on converting agricultural waste to energy.

Weltech is one of the world's leading enterprises in the field of stainless-steel biogas plant construction and has planned, developed and built anaerobic digestion plants since 2001. The anaerobic digestion plants can be designed to convert any form of agricultural waste to

biogas, which can then be converted to power and energy. From food waste to animal waste, any organic residue material can be put through the digestion process. The plant visited in Arneburg was utilising corn waste to create biogas.

High-tech protected cropping: The Netherlands

The group then travelled to the Netherlands, which has some of the most advanced hi-tech protected glasshouse technology in the world. The tour highlight was a visit to Koppert Cress, one of the most innovative vegetable producers in the industry. Koppert Cress produces microgreens and has built a brand and marketing campaign that has set it apart as a premium producer that sells to high-end Michelin star chefs. The Koppert Cress strategy is to create pull by the market as they target 'top' chefs and get them passionate about Koppert Cress' healthy and delicious products. These chefs then demand their traders/providores to obtain this top-end product and brand directly from Koppert Cress – price is rarely a factor as this sector of the market is all about the experience and taste.

Rob Baan is the brains behind Koppert Cress and is a passionate advocate for 'Farmacy', communicating directly with doctors against the backdrop of the famous saying from Hippocrates: "Let food be thy medicine and medicine be thy food". These microgreens packed a real punch of flavour in the mouth with their potency.

The visit to the Netherlands was a short three days but was busy with additional visits to Rijk Zwaan, BASF and Nunhems, Tomato World, De Ruiter Experience Centre and Sweet Pepper Grower. The group was welcomed warmly and hosted with much enthusiasm during all visits.

With a range of growers from varying production systems, visits to these facilities was extremely educational for them, particularly those that were not familiar with the workings of a protected cropping system.

World-class research

Another key highlight from the Netherlands was the visit to Wageningen Research Facility, a world-leader of advanced research for the vegetable industry. The group was first addressed by a researcher of quality greenhouse vegetables, Caroline Labrie, who discussed her team's investigation into taste

and quality. Consuming vegetables is no longer just a matter of health.

Consumers now demand not only high-quality, but also tasty vegetables; therefore, incorporating taste in breeding is a significant focus of product development. The Wageningen Research Facility has a whole team and project to research quality and taste preferences for fresh fruit and vegetables. Flavour and taste can be a real competitive edge for discerning consumers. Caroline gave participants an example of a producer who has marketed a percentage of their crop with a taste satisfaction guarantee, and this particular product is worth 17.06 Euros per kilogram (compared to the lowest price of 2.44 Euros per kilo). Caroline explained growers very rarely talk about taste on their packaging, and it was suggested that our growers should follow the table grape industry and put Brix level on packaging so consumers can decide.

We were graciously hosted by the team and were privileged to see blackberry and raspberry plants under LED and hybrid-lighting; new and emerging commercial hydroponic crops of pepper and vanilla; and the brand-new structure from an international specialist in the field of poly greenhouses and tunnels, Rovero. This structure is being hosted at the university, and is using a bubble wrap-type skin focused on saving energy.

Low-tech protected cropping: Spain

Visiting Almeria was an experience like no other. The sight of a rolling expanse of white is what greets you from the plane before landing. There are hectares and hectares of white plastic greenhouses – 30,000 hectares to be exact. These are under greenhouse cropping in Almeria, producing every vegetable from cucurbits to solanaceous crops. It is even more awe-inspiring when one understands

the soil and topography of the region.

The industry did not exist before 1974. The soil – or rather rock – in Almeria is not conducive for growing. But Almeria sits at a climatic vantage point in Europe and is able to provide winter production for the rest of Europe. Therefore, the farmers have developed a system that has made the soil arable.

Every greenhouse grower has dug out the base of their structure and replaced it with 30 centimetres of soil (brought in from the mountainous area surrounding Almeria). This is then covered with 5cm of organic matter (mostly animal manure) and finally covered with a 10-15cm layer of small stone gravel or coarse sand. This soil/organic matter/gravel system compensates and counter-acts high water salinity and limited water supply. The greenhouses are sterilised after every crop by covering the ground in plastic and closing the greenhouse to heat it to 60 degrees Celsius. This steams the ground and sterilises the media to mitigate pest and disease pressures. The 'substrate' mix is changed and overhauled every five years.

Growers farm an average of one to two hectares each and the major crops are tomatoes (9,000ha), sweet peppers/capsicums (9,000ha) and the rest consists of cucumbers, eggplant, zucchinis and melons.

The area boasts 3,000 light hours per year with mild winter temperatures not falling much below six degrees Celsius and the maximum of 20 degrees. The inside of the greenhouses can reach 27-30 degrees by midday which is conducive for fruiting crops, especially vine crops.

Overall, the tour was an opportunity for growers to understand and study two distinct forms of protected cropping production systems and the associated techniques and technologies.



Innovative product packaging on display at Berlin Fruit Logistica.



Participants at Wageningen Research Facility in the Netherlands.

Find out more R&D

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

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

Project Number: VG18002

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Compost: Good for the health of both plants and people

A project is currently being undertaken by Applied Horticultural Research with support from the NSW Environment Protection Authority to look at the benefits of compost. In addition, a one-page voluntary compost code of practice has been designed for smaller producers, including growers making compost on-site. Jenny Ekman reports.

Good growers don't feed their crops, they feed the soil – a sentiment often shared by Peter Cundall, former presenter of ABC program *Gardening Australia*.

When you think about it, compost is really microbial manure. Composting enables natural organisms in the soil to digest what was once a recognisable leaf or stick or stinky pile of chook poo, turning it into rich organic particles that plants can use as food. As well as feeding soil microbes, the addition of compost can improve soil structure, helping to retain nutrients, water and warmth.

As the cost of landfill and pressure to recycle waste increases, compost is becoming cheaper and more available to producers. However, growers may still question the benefits of these materials, as well as worry about possible impacts on food safety.

These important issues are being addressed through two projects supported by the NSW Environment Protection Authority (NSW EPA) entitled *Demonstrating the benefits of recycled organics to vegetable growers* and *Compliant Compost*.

Quantifying the benefits of recycled organics

Vegetables have been grown intensively at a trial site in Maroota, New South Wales for at least two generations. The soil is a sandy loam, naturally low in organic matter as well as cation-exchange

capacity – an indicator of soil fertility. It shows the soil's ability to supply three important plant nutrients: calcium, magnesium and potassium.

High intensity production is historically supported using poultry litter. This adds nitrogen and also provides organic matter to what is otherwise a fairly structureless soil.

However, poultry litter also adds phosphorus, and the soil is now uncomfortably high in this nutrient. The use of fresh poultry litter also raises food safety concerns, especially for vegetables that may be eaten uncooked.

The project trials have tested recycled organics (ANL Greenlife compost) as a way to safely improve soil health. This product does not contain animal products (such as manure), but is made entirely from garden waste materials. These are treated (pasteurised) by heating to over 55 degrees Celsius for at least three days on three separate occasions, ensuring the product is safe for both plants and people.

As this pasteurisation process is documented and certified, there are no restrictions on the use of this product for vegetable production.

The compost was applied at zero tonnes, five tonnes or 10 tonnes per hectare, and incorporated into the top 10 centimetres of the soil.

The results were very clear. Silverbeet grew significantly heavier and taller when the compost was added. Only five tonnes per hectare increased plant weight by

33 per cent and height by 23 per cent, which is a significant difference.

Doubling the application rate increased weight by a further 14 per cent, but this was not statistically significant.

In general, it is better to apply small amounts of compost frequently than large amounts less often. The idea is to keep the soil microbes fed continually, instead of following feast with famine.

But what about my food safety program?

Food safety programs such as Freshcare, SQF and HARPS all restrict the use of untreated products containing manures on crops. This particularly applies to vegetables grown in or near the soil and which may be eaten uncooked. For example, Freshcare requires that untreated manures are not applied within 90 days of harvest for these products. This withholding period increases to

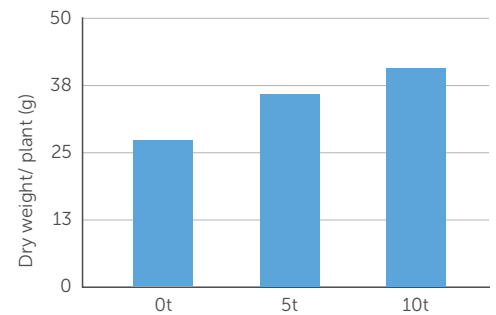


Figure 1: Dry weight of silverbeet grown with 0t, 5t or 10t per hectare compost.

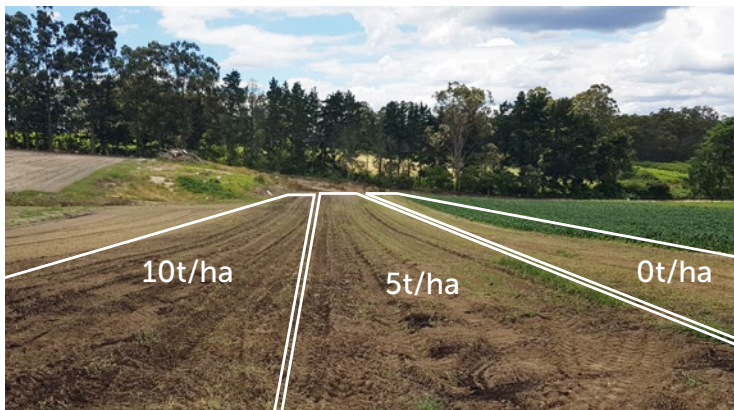


Figure 2: The effect of applied compost (left) on growth of silverbeet (right). Images courtesy of Applied Horticultural Research.



365 days under HARPS, effectively excluding manures from use on most vegetable farms.

In contrast, compost that has been treated to kill human pathogens can be used freely. However, evidence needs to be provided that this has occurred. Until now, this meant the compost maker (farm or commercial manufacturer) had to either:

- a) Be certified to AS4454 and provide evidence of this with the product.
- b) Have a documented, verified treatment process *plus* test each batch to show it contained <100 CFU *E. coli*/100g and *Salmonella* spp. was not detected in 25g.

Without this evidence, compost that contains manure, food waste or animal products is considered 'untreated'. It therefore attracts the same restrictions as raw manure.

Accreditation to AS4454 is about a lot more than food safety. It includes consideration of issues such as particle size, nutritional quality and electrical conductivity. The standard is complex, making it expensive to maintain and

audit. Certification to this standard is therefore uneconomic for many compost producers, including growers who make compost on-farm.

Compliant compost

To overcome this issue, a new voluntary standard is available for on-farm and commercial compost producers. *Compliant Compost* is a simple, one-page code of practice that can be assessed by approved auditors at the same time as other accredited standards (e.g. Freshcare), minimising audit costs. Certification is designed to be easy for smaller producers, including farmers making compost on-site.

The code is focused on food safety and demonstrating that the compost will not introduce human pathogens into the environment. Compost certified using the *Compliant Compost* system can therefore be used on-farm without restriction.

An information pack is now available about the standard including:

- Information on developing an approved, documented treatment process for making compost on-farm.
- Equipment and records required.
- How and when to test the composted product.

Farmers purchasing compost simply need to ask their supplier for a copy of their compliant compost certificate.

Find out more R&D

Please contact Virginia Brunton at virginia@mraconsulting.com.au for information on having a compliant compost audit. For information on field trials or copies of the information pack, please contact Jenny Ekman at jenny.ekman@ahr.com.au.

These projects are supported by the NSW Environment Protection Authority as part of *Waste Less, Recycle More*, funded from the waste levy.



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Veggie Stats

Freshlogic and Hort Innovation have combined to produce an annual Horticulture Statistics Handbook that addresses the need for accurate data on market size, value, structure and consumption of horticulture crops in Australia. The Handbook adopts a modelling approach that centres on determining the fresh market value and volume for each category, that reconciles production with local and international distribution channel throughputs. It provides great insights into the performance of our sector, useful detail on the performance of specific vegetable commodities, making it an invaluable resource for any industry member. *Vegetables Australia* shares some key insights from the 2017/18 handbook for vegetables.

Australian Vegetables Household Purchase Quantity and Penetration - Year to June 2018



Cabbage

		Change on last year
Production tonnes	71,165	6%
Production value	\$41.6m	-8%
Volume ranking	9th	
Value ranking	21st	
Penetration	45%	
Purchase Quantity	1.2kg	

Carrots

		Change on last year
Production tonnes	331,326	6%
Production value	\$219.30m	-8%
Volume ranking	3rd	
Value ranking	3rd	
Penetration	89%	
Purchase Quantity	1.0kg	

Eggplant

		Change on last year
Production tonnes	9,043	<1%
Production value	\$17.5m	18%
Volume ranking	23rd	
Value ranking	24th	
Penetration	23%	
Purchase Quantity	0.6kg	

Driving growth in vegetables - Where is the growth today & what's driving it?

Across the fresh vegetable industry, there was a recovery in production and value from previous years, an upsurge in food service, and an increase in split shopping resulting in retailers focusing on share of shopping trips.

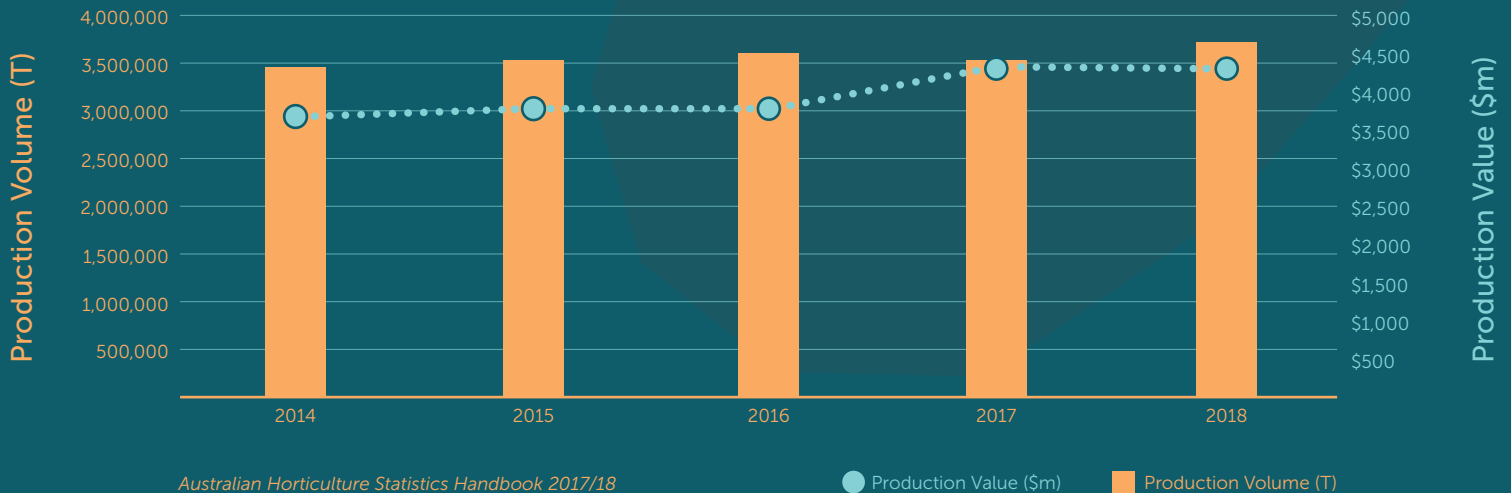
Aspects of convenience like the demand for pre-packaged products and portions along with the societal trends of healthy eating and ethical values all continue to have an impact.

The supply of product into the domestic food market is influenced by the conditions in the retail channel. The drivers

of these conditions which were centred on expanding retail entrants, growth in direct to home channels and increase in eating away from home, all combined to list the level of retail competition.

For the year ending June 2018, Australia exported 205,665 tonnes of fresh vegetables and export market optimism has continued to flow into business confidence, and is now reflecting the value associated to those with export market exposure.

Australian Vegetables - Production Volume and Value 5 years to June 2018



Did you know

Of the 9.01 million occupied households, approximately half are buying celery, cauliflower and zucchini and a quarter of occupied households are buying beetroot, Brussels sprouts and eggplant.

Find out more R&D

If you have an interest in a particular vegetable category from the Australian Horticulture Statistics Handbook or you want to know more about Freshlogic's Freshlogic Analytics service, contact analytics@freshlogic.com.au, martin@freshlogic.com.au or 03 9818 1588.

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

Project Number: VG15027

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The retail vegetable market is mature, with these conditions reflected in informed supply chains, aware consumers and increasing levels of distribution channel and category competition. Generating growth requires sound planning and targeted investment to succeed, and even before that, earning support from trading partners. Freshlogic understands fresh food and knows achieving growth in this mature market isn't easy. To support these needs, Freshlogic has launched Freshlogic Analytics – a complete set of fresh fruit & veg market information and insights made available 24/7 through a best of class online access system.

Attending Hort Connections?
Visit stand #177 to see Freshlogic Analytics in action.



Ensuring the veg industry's future through innovation

With Australia's population set to climb significantly over the next decade, new pathways are being investigated to develop vegetables so that they maintain their freshness for longer, as well as produce flavoursome snacks that are healthy, attractive and convenient for consumers. This will ultimately help to ensure a sustainable and profitable vegetable industry.

The future of farming and food production is a shared responsibility. While the world's population is increasing at a rapid rate, and available arable land and water are becoming increasingly scarce, this presents opportunities for key players in the industry to explore new pathways for vegetable development.

Vegetable seeds are positioned at the beginning of the food chain, so breeders play a vital part in ensuring the sustainability of food.

"This involves taking what we can from the diversity in nature and incorporating that with cultivated varieties to give growers what they need agronomically, now and into the future, while meeting consumer demands to stimulate vegetable consumption," Rijk Zwaan R&D Business Manager Tim March said.

More than 10 years ago, Rijk Zwaan asked lettuce growers and processors what they needed to sustain their business. The feedback was to reduce waste by improving the shelf life of cut lettuce. In 2016, it released the Knox trait, which delays the browning on cut surfaces by two days.

Rijk Zwaan also discovered a natural blue leaf trait in cucumber plants, which enables the plant to absorb more light and nutrients and respond better to stressful situations such as temperature fluctuations and pest and disease pressure. This is now bred into commercial varieties to ensure more productive plants throughout the year.

Quest for convenience

In Australia, snacking in between meals and on the go is becoming increasingly popular, and more than 60 per cent of households snack on vegetables at least occasionally. Breeders are focusing on developing flavoursome varieties with good resistances that can be grown around the world using medium-tech and high-tech methods. The expected growth in this segment means seed companies are continuously innovating and improving the product ranges by adding new colours, shapes and flavours. We are now seeing innovations in snack lettuce, lettuce wraps and sweeter salad cabbages.

"With Australia's population expected to reach 30 million by 2029, it's now more important than ever that we are working with the whole chain to develop local varieties with specific resistances to diseases or natural traits that help food stay fresher for longer, improving yields and reliability and developing varieties that meet external demands for convenience foods, and organic and hydroponic production," Mr March said.

"On the consumer side, seed companies like ourselves, as well as growers, are working with initiatives such as Love My Salad to educate consumers about vegetables."

Achieving targets

In 2015, world leaders agreed to 17 Sustainable Development Goals for a better world by 2030. As a vegetable breeder, Rijk Zwaan shoulders the responsibility for sustainable farming by supporting the specific goals: to end hunger and achieve food security and improved nutrition; to promote sustained, inclusive and sustainable economic growth; to ensure sustainable consumption and production patterns; and to strengthen partnerships.

"Vegetable breeders around the world routinely cooperate in primary research to solve major issues that face the industry. It's bigger than any one company and at the end of the day everyone is in this together," Mr March said.

"We have to take a long-term view of the industry and find solutions to some of the problems we are facing so we can achieve sustainability and economic security for our growers."

Find out more

Please visit rijkzwaan.com.au/sustainability.

Industry in the media

In the lead-up to the Federal Election, AUSVEG CEO James Whiteside and National Manager – Public Affairs Tyson Cattle appeared on broadcast and in online and print media discussing the launch of AUSVEG’s SPROUT policy platform, which forms an advocacy agenda for the Australian vegetable industry.

Mr Whiteside and Mr Cattle called on both major parties to commit to an Agriculture Visa to help address the major labour shortages facing the industry, and reinforced the importance of growers across the country being able to access a pool of available and efficient labour for various roles on-farm. In separate media reports, Mr Whiteside also discussed the potential for the price of fruit and vegetables to double over the next decade due to rising labour and energy costs.

The continued success of Australian fresh vegetable exports received media coverage in recent weeks, with AUSVEG National Manager – Export Development

Michael Coote appearing on radio and in print and online media to discuss the topic. Mr Coote said the growth of fresh vegetable exports – by more than 10 per cent in value and 15 per cent in volume – came on the back of strong-performing products succeeding in high-value Asian markets, and added that this growth was supported by work undertaken by AUSVEG, Hort Innovation and other groups.

Meanwhile, AUSVEG National Manager – Communications Shaun Lindhe appeared in online media following the discovery of a grey ladybird species in Queensland that could potentially act as a predator of tomato-potato psyllid. Mr Lindhe noted the ladybird could be a control option as part of an integrated management system, and emphasised the importance of growers, industry members and the general public following strict biosecurity measures to prevent the spread of any pests.

Find out more R&D

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

Project Number: VG15027

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TPP and the northern growing regions of Western Australia

In the last few weeks, National TPP Coordinator Alan Nankivell headed north to visit Western Australia's vegetable growing regions of Geraldton and Carnarvon to present to growers on the management options for tomato-potato psyllid (TPP). He also provided an update to growers and regional stakeholders on market access to the eastern states.

On a recent visit to Geraldton and Carnarvon, the major concern expressed by vegetable growers relating to tomato-potato psyllid (TPP) was not *if* TPP arrived in their district, but *when*.

National TPP Coordinator Alan Nankivell presented to growers about management options such as Integrated Pest Management (IPM) and chemical management for TPP. He also provided an update to growers and regional stakeholders on the granting of market access for Western Australian product to the eastern states.

A specific grower presentation on TPP and its management was delivered to over 60 per cent of all Vietnamese growers in their own language with the assistance of Truyen Vo from vegetablesWA. A significant outcome was the introduction of knowledge around the use of new crop protection products, and the opportunity that biological agents can provide.

Growers expressed great confidence in the seedling nurseries for capsicums and tomatoes, which were undertaking good nursery hygiene practices to ensure that seedlings sent into these regions were clear of TPP. However, growers were concerned with the potential risk of the general public inadvertently bringing untreated seedlings into the region to grow in their backyards; hence, the view was that they need to be vigilant in monitoring their crops for TPP as well as gaining an understanding of appropriate crop protection products to use alongside the management of natural predators. Growers are certainly aware of the issues of insect resistance if chemicals are used off-label, and the need to vary the types of chemicals to reduce resistance building up.

The large Vietnamese growing community has developed unique capabilities of ongoing in-field monitoring because they are out in the field every day, from planting to harvest. When a pest arrives, they are onto it straightaway so there is a need for up-to-date information on the use of biologicals and chemicals.

An important issue for the Vietnamese community is to have information available in their own language. This is not just in relation to TPP, but all horticultural information. It is estimated that across Australia, 35 per cent of all horticultural crops are grown by Vietnamese growers. Alan will explore what options could be developed nationally to address this important need.

While monitoring has been undertaken extensively in the known TPP-infested zones around Perth, little (if any) has taken

place in the northern growing regions. As a result, the Western Australian Department of Primary Industries and Regional Development (DPIRD), the Carnarvon Growers Association, and Carnarvon growers and agronomists have come together to undertake regional monitoring for TPP and other insects. The purpose is to gather data to establish area freedom while providing valuable information to growers on the management of pests and beneficial insects.

Eastern bloc: Next steps

The potato industry is delighted by the commitment by the regulators of Queensland, New South Wales, Victoria and South Australia to ensure the movement of potato tubers between the respective states if TPP only is found. However, it has turned its thoughts to the issue of a potential incursion of TPP infested with the bacterium *Candidatus Liberibacter solanacearum* (CLso).

Will this result in stopping potato tubers moving across state borders? As previously demonstrated, potato tubers for processing and wares do move freely across borders and will do so in the future if only TPP is present. Therefore, is industry willing to manage an incursion of TPP with CLso? What will the impact be? What has happened internationally when CLso is found? What would be the implications for Australia's international trade? These – and many more questions – have to be considered by the industry.

A series of grower consultations in key growing regions across the four states of the eastern bloc have been organised in collaboration with state and regional bodies to gauge the industry's appetite for business continuity, regardless of the arrival of TPP and CLso.

A project funded by the Department of Agriculture and Water Resources, in collaboration with Plant Health Australia, commenced in early May where industry stakeholders came together to develop the scope of a National Potato Industry Biosecurity Surveillance Strategy. A basis for the workshop was to provide information on the recent impact of TPP on the potato industry in Western Australia, and the reaction by the industry to establish the eastern bloc for the movement of potato tubers. Industry stakeholders including growers, processors and industry bodies began the process of consultation that will continue over the next eight months.

Find out more

To arrange a grower consultation or for more information, please contact National TPP Coordinator Alan Nankivell at alan.nankivell@ausveg.com.au.

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

Project Number: MT16018



A presentation on tomato-potato psyllid and its management was given to Vietnamese growers in their own language in Geraldton, Western Australia.



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Photography by LJM Photography.

Hayden Bogicevic

Age: 29

Locations: Mornington Peninsula, Victoria

Works: Coolibah Herbs

Grows: Salad, leafy greens and seasonal vegetables

How did you first become involved in the vegetable industry?

As a young kid I spent a lot of time with my father riding around on tractors and other farm machinery, so that is where I first got to see how the farm works. From a professional point of view, I worked in our nursery for a year after high school. I then moved to Queensland for about nine years, playing football and working as a landscape gardener. When I moved back to Melbourne, a role as Nursery Manager was available and I have been here for about two years now, with the intention of moving more into field production and business management.

What are your roles and responsibilities in the business?

I currently run our nursery where we produce about 250,000 organic seedlings and 600,000 conventional seedlings per week. My duties include ordering fertiliser, chemicals (mostly organic), seeds and equipment; completing our spraying and feeding programs; organising varieties and quantity of seedlings; maintaining both conventional and organic hothouses; and managing our nursery staff. I also work with our transplanting team.

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

Winter is definitely a challenge – not just because of the lousy weather but combating pests and disease can be a real struggle, especially on the organic side of things. Apart from that, keeping and finding good staff can be hard; also dealing with the changes in-market and following market trends.

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

I love working outdoors. I've had my fair share of different jobs and have always preferred being outdoors. Also looking after certain crops and being able to harvest a really healthy crop at the end of the day is very satisfying for me. My enthusiasm comes from always wanting to improve and looking at ways to be more efficient and productive. Also, I have a variety of different tasks which helps keep me motivated.

Where do you receive your on-farm practice advice and information from?

I guess you could say my father. He has been doing this now for over 40 years, so anything I need help with, I go to him. Our farm manager Satish is also always looking at training courses, constantly trying to help our staff have a greater skillset. I also meet with our agronomist Nic weekly to discuss any changes in pest and disease management, or any new ideas/strategies he may have.

What new innovations, research and/or practices has your business implemented recently? What are you doing differently to other grower operations?

We have just expanded our packing shed to accommodate some of our larger customers, and in doing so we have added some new high-tech production equipment. Our workplace health and safety officer has been putting a lot of time into the logistics of the new yard, improving the flow of produce in and out of our production site. We have also brought in some new pest management systems for rodents etc. that do not use bait and are much more environmentally friendly, and our general aim is to always minimise any use of chemicals wherever we can.

Where do you see yourself in five years' time?

I will still be working for Coolibah but maybe have moved more into the business side of things. Hopefully our organic production will be overtaking the conventional which is a long-term aim for our company.

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

I think they just need to be educated more on the importance of the industry. The population is growing, and farmland is becoming scarce, so we need to find ways to improve the efficiency of our land AND the quality of our produce. I also think younger people are starting to care more about the environment so I hope this may be an area more people will be interested in. Working outside should appeal to people who want to get out of the office/classroom and get their hands dirty!

You travelled to Germany, the Netherlands and Spain as part of the 2019 European Industry Leadership and Development Mission in February. What did you learn from this experience?

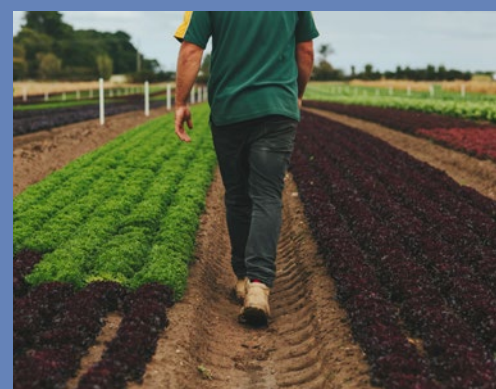
I didn't really have a great understanding of how big our fruit and vegetable industry is, and to go to Europe and see the research into technology and how they read the market was really amazing. I really picked up a sense that, in general, there was a big emphasis on quality over quantity and the research they put into renewable energy and eco-friendly farming practices was really pleasing to see.

Did you see any ideas or practices during the mission that you could try to implement in your business in the future?

The main focus of the tour was on protected cropping, which we do very little of, but I am currently in the process of improving our hothouse with some new rolling doors, ventilation and looking into some kind of heating for summer. And introducing biological pest control.

Would you recommend a mission to other growers and if so, why?

Of course. The technology and research that growers invest in overseas is far more advanced than it is in Australia, in my opinion, so it is a great chance to see any new innovations/crops/machinery that our industry has only just started looking at. And it's always refreshing to see how the same industry can be so different in other countries. Also, it's a great chance to see another part of the world. For those who haven't been overseas, it is a must!





Seven of Japan's major fresh produce importers visited Simplot in Tasmania as part of an Inbound Trade Mission.

Vegetable industry export program tracking well in 2019

Following the mid-term refresh of the Vegetable Industry Export Strategy 2020, the AUSVEG Export Development team shares some key insights from the strategy review and provides an overview of industry activities that have taken place in the first half of 2019.

To build the export knowledge and capabilities of Australia's vegetable growers, AUSVEG is delivering the *Vegetable Industry Export Program* (VG16061), a strategic levy investment under the Hort Innovation Vegetable Fund.

In 2016, the Vegetable Industry Export Strategy was implemented, which set a target for growth in vegetable exports by 40 per cent to \$315 million by 2020. For the year ending December 2018, the volume of Australia's fresh vegetable exports increased 15.5 per cent to 227,000 tonnes, and 11.4 per cent in value to \$281 million.

The five-year Compound Average Growth Rate (CAGR) of 13.4 per cent indicates that the industry is tracking well towards achieving its goal. Growers have indicated that the export strategy has been highly effective in fostering a solid core of capable exporters; building exporter confidence and skill; growing awareness of export opportunities for market and business growth; facilitating customer and supply chain connections; network building; and developing trans-state export alliances and collaborations between Australian vegetable growers.

However, since the strategy's implementation, much has changed in the export landscape – both in terms of the grower/exporter capability and the global vegetable market dynamic. Recognising this, an external review and mid-term refresh of the export strategy was recently commissioned by AUSVEG and Hort Innovation to consider any adjustments to the *Vegetable Industry Export Program* that would maximise the return on investment for the remainder of the project.

The review included market analysis and consultation to seek direct feedback from vegetable exporters around Australia who had participated in the various trade shows, missions and training programs.

Priorities and direction

Several refreshed market priorities were identified as a result of the March 2019 review. These included:

- Continue to leverage our strong position in South East Asia to capitalise on the growth by moving up the value chain.
- Build capability in Japan, South Korea, Taiwan and Thailand, laying foundations for longer-term growth.
- Consolidate position in the Middle East, leveraging the hard vegetable trade (carrots, onions, potatoes).

Directions have also been set out for the refreshed program strategy, including:

- **Build** a solid core of exporters with scale and year-round supply capability.
- **Grow** the base of 'export-capable' growers with sound business skills and strategically align them with larger exporters or clusters.
- **Target** countries which offer the best growth potential.
- **Develop** more branded and value-added products.
- **Increase** the proportion of direct-to-customer sales to reduce supply chain intermediaries and improve profit and competitiveness.
- **Improve** Australia's brand credentials as a vegetable provenance.

To support the strategy, a range of industry activities continue to be conducted as part of the *Vegetable Industry Export Program* in the areas

of export readiness, market development (inbound and outbound trade missions) and market access. Below is an update on what the program has achieved in the first half of 2019.

Export readiness

In addition to delivering face-to-face export training workshops, the AUSVEG Export Development team is continually updating its vegetable industry export training program and materials, and is developing online training modules for release in late 2019. This will allow growers from across Australia to undertake practical training from their farms and businesses.

Market development

Developing relationships with international buyers is critical to increasing trade. As part of the *Vegetable Industry Export Program*, AUSVEG organises both inbound and outbound trade missions throughout the year.

Outbound Trade Missions

AUSVEG has facilitated the opportunity for more than 30 growers to showcase fresh Australian vegetables at international trade events throughout 2019. These events included Gulfood Dubai (February), Foodex Japan (March) and ThaiFex Bangkok (May). Growers participated in market insight tours and supply chain visits as part of each trade mission to assist growers in gaining a more detailed understanding of how each market operates.

Inbound Trade Missions

In February 2019, the Australian vegetable industry delivered a dedicated Trade Mission to Tasmania to showcase the state's high-quality horticultural produce and allow local growers to make business connections with seven of Japan's major fresh produce importers.

The group visited eight vegetable and fruit growers (including producers of leafy salads, onions, carrots, broccoli, cabbage, capsicum, cherries and blueberries) and two processing companies (frozen and canned vegetables, and apple cider) in regions surrounding Hobart, Launceston and Devonport.

The annual Reverse Trade Mission (RTM) is also set to take place from 19-25 June, which will allow 40 international buyers to visit a range of vegetable producers across Victoria and participate in the Taste Australia – Fresh Produce Showcase event, where they will be able to meet leading grower-exporters across Australia and see their produce first-hand. The delegates will represent international supermarket chains and large fresh produce importers from key export markets including Japan, Korea, Taiwan, Indonesia, the Philippines and Thailand.

The main objective of the RTM is to elevate international buyers' understanding of Australia's production capabilities, product offering and export value chains. Additionally, it will highlight the quality, safety and integrity of Australian produce.

Market access

As part of the process for obtaining new market access, applications must be submitted to the Hort Innovation Trade Assessments Panel for review. Applications outline the potential commercial trade opportunity, the capability of the industry to supply the market demand, as well as biosecurity issues and treatment options to manage pests of concern. Once approved, the application then progresses to the Department of Agriculture and Water Resources to commence trade negotiations.

In addition to the eight applications submitted since 2016, at the time of writing AUSVEG was preparing a new market access application for fresh chilli to New Zealand, for review by the Hort Innovation Trade Assessments Panel in May 2019.



The Australian delegation at Foodex in Japan.

Find out more R&D

Any growers interested in discussing export opportunities can contact the AUSVEG Export Development team on 03 9882 0277 or export@ausveg.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: VG16061

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A new level of disease control on the Granite Belt

Five years ago, growers based in Queensland's Granite Belt were battling white blister, with some affected broccoli crops experiencing losses between 40-50 per cent. Today, a fungicide is assisting growers to manage this disease.



Ray Taylor, business owner of Taylor Family Produce based near Stanthorpe, Queensland.

Keeping disease pressure under control is a cornerstone of 75 years of high-quality vegetable production for the Taylor family.

Taylor Family Produce is based in the Granite Belt region of southern Queensland, near Stanthorpe, producing leafy vegetables including wombok, celery, silverbeet and lettuce, as well as broccoli.

The high-quality standards are due to a combination of factors, including the unique climate in the region and the family's growing techniques. Part of the puzzle to achieving these results is dealing with significant disease pressures created by the rainfall that the Granite Belt receives in an average year.

"Major diseases impacting our production include sclerotinia, white blister in broccoli, and downy mildew in lettuce. Some of those diseases can result in quite significant crop losses," owner Ray Taylor said.

"In the last three to five years we've noticed more pressure, particularly from white blister in broccoli, so we're always looking for new chemistry and new ways of attacking the disease."

Mark Rogers from EE Muir & Sons at Stanthorpe provides agronomic services to Taylor Family Produce, and he agrees that white blister can be a devastating disease.

"It can be a big problem at certain times of the year, especially when you have the right weather conditions, so high humidity, rainfall and the right night-time temperatures seem to be quite important for white blister in this area," Mark explained.

Taking control

Infito® fungicide from Bayer was registered for downy mildew control in leafy vegetables, as well as downy mildew and white blister control in brassica vegetables in 2018. The product brings two new chemical groups to the market – Group 28 (propanil) and Group 43 (fluopicolide).

For Mark, it was a welcome opportunity to introduce new chemistry to the Taylor operation, which started using this fungicide at the label rate of 1.6 litres per hectare at the pre-heading stage for broccoli.

"We're trying to use it prior to when the disease actually starts to show up. Infito worked really well in 2018, as good as any of the products we've had in the past," Mark explains.

"We've had some really trying conditions in terms of dry weather but also humidity and high temperatures, so this has worked really well in controlling white blister."

The product's ease of use is also a highlight, according to Mark.

"I know that Ray has mixed this with quite a number of products, and we've found its compatibility to be really good," Mark said.

Infito comes in two pack sizes, a three-litre and a 10-litre pack for both small and large growers. It shows good rainfastness, has no withholding period

for brassica vegetables and has a seven-day withholding period for brassica leafy vegetables, which provides flexibility for production systems.

Another significant factor is the resistance management benefits from the two new chemical groups represented by the active ingredients.

"Bringing Infito in as new chemistry has been good for our business, because you don't get resistance build-up from some of the older chemistry; you can break that cycle with another option to get disease control over longer periods of time," Ray said.

Having had good success over the last season, the fungicide now has a strong place in the chemical rotation at Taylor Family Produce.

The timing of application may be tweaked to be applied as a scheduled spray at a certain time, because Mark and Ray agree that one early spray can pay dividends for the whole season in terms of getting on top of white blister.

"It will be a big part of our program in the future; it has a definite fit – and I think it's a new chemistry that'll have a lot of legs for a long time," Ray said.

"It's given us a new tool in the chest to work with on a rotation basis with other products and it's going to be a really good thing for our long-term future."

Ray Taylor inspecting broccoli in the packing shed.



L-R: EE Muir & Sons agronomist Mark Rogers and Bayer representative Carmen Brown.



Find out more

Please visit crop.bayer.com.au/infito.
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Australia's national wholesale market in the 21st century

There has been a large shift in the way people communicate over recent decades. The Australian horticulture industry is not immune to these changes, with growers and wholesalers making the transition from face-to-face business to connecting through digital platforms.

Australia's first fresh produce wholesale markets started in Sydney and Melbourne in the 1830s. The last major change to these markets was in the 1970s, when most of our capital cities made significant investments in creating state-based central markets to support the distribution of fresh produce. These investments were needed because as communities grow, our food supply chains need a place for trade and transactions and a hub for managing handling and logistics.

Over the past 40 years, one of the biggest changes impacting our lives has been in the way we communicate. Consider how big that shift has been: today more people start personal relationships on phone apps than face-to-face; Facebook has taken over from letters and photographs; and Google is preferred over phone books. In 2019, transactions and trade can happen anywhere and at anytime. The phone in your pocket has more computing power than NASA had sending people to the moon.

This is the world we live in, and over the last few years a quiet revolution has been taking place in our fresh produce industry. Along with technologies that help growers produce more, there has been the creation of a national wholesale fresh produce market for trade that is helping suppliers sell more.

The HiveXchange is an independent national wholesale market that has been leading that change and now has over 100 registered and certified suppliers selling their produce nationally and internationally. It is focused only on wholesale pallet volume transactions and delivers the marketplace experience through a phone or computer.

Connecting industry

For wholesale suppliers, the HiveXchange offers the things you would expect in a well-run wholesale market. It manages payment risk and assures suppliers will get paid inside of 21 days. If you find

a buyer, they underwrite the payment risk. It allows suppliers to make different offers to different kinds of buyers – securely and in private. No buyer sees another buyer's offer, and no supplier sees another supplier's offer. The marketplace manages traceability, contracting, administration and certification. It allows suppliers to sell and ship product from one location to another.

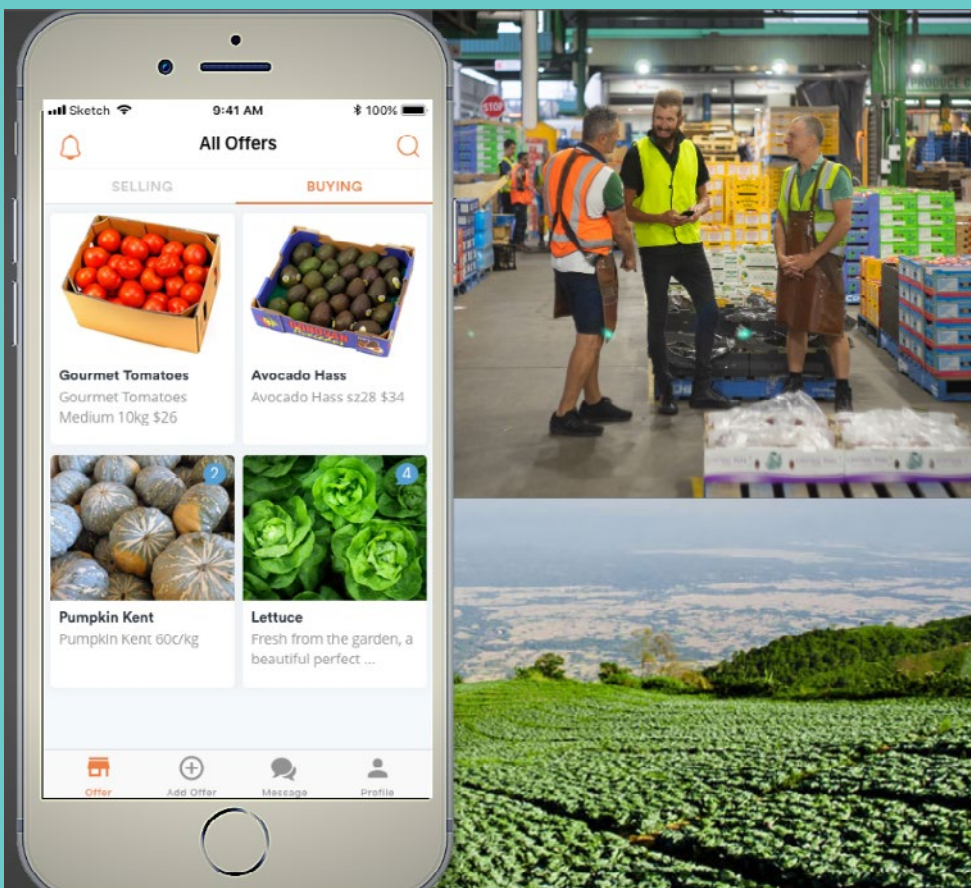
In this wholesale market, suppliers can find opportunities at a national level through a single window.

This national marketplace uses 21st century communication tools to meet the needs of the community. It doesn't replace the traditional central markets – central markets are critical logistics and service hubs as well as important locations for clearing and trading fresh produce.

This national digital market aims to create more trade opportunities for members of the supply chain. It can help people with investments in production or logistics and handling to generate better returns on their investments.

"When I buy or sell something, I have formed a relationship. But these relationships are changing, and it is not because we have changed, it is because the world is just smaller," The HiveXchange CEO and co-founder Antonio Palanca said.

"The reason we spend so much time on our smartphones is they make us feel more connected and better informed – the world feels smaller because our personal connections are bigger. We now have the capacity to form and manage more relationships than ever before in human history. That is an amazing opportunity and one that is changing nearly every transaction in our lives."



Find out more

Please visit hivexchange.com.au.

Automating plant counts using drone imagery

With the increasing level of interest in unmanned aerial vehicles (UAVs), a project is evaluating the application of UAV imagery to vegetable systems. This includes assessing spatial variability and crop performance, as well as yield estimates in crops that are currently without yield monitoring technologies. Julie O'Halloran and Celia van Sprang from the Queensland Department of Agriculture and Fisheries provide an update.

Use of unmanned aerial vehicles (UAVs), or drones, is increasing across the vegetable industry. The Queensland Department of Agriculture and Fisheries (DAF QLD) is working with vegetable growers to assess different applications of UAV technology. Recent demonstrations have shown that automated plant counts for crops such as broccoli, cauliflower and lettuce, where individual plants represent a unit of produce, can be easily achieved.

Accurate automated plant counts can provide an estimate of yield for hand-harvested vegetable crops that are currently without yield monitoring capability. Comparison of these automated counts with pack out data could potentially provide field recovery data and an indication of field losses, which is generally not measured.

Automated plant counts use commercial algorithms to process count data from the UAV imagery. These can be accessed through various web-based platforms, such as Agremo™ or Precision Mapper™. The UAV captures overlapping digital photos as it flies over the crop and these are then stitched together into an orthomosaic, which is one large image of the field comprised of the smaller overlapping photographs. It is then analysed using these algorithms to provide a plant count over a given area.

In Figure 1, plant count analysis was applied over a given area in a commercial broccoli field. The red area that is highlighted outlines the area to be counted. Automated plant count analysis indicated that there were 48,817 plants in this 1.13-hectare area.

To confirm accuracy of the commercial algorithm, DAF QLD established replicated small plots (five metre by two metre beds). Plants in these plots were counted both manually and using automated counts.

Comparison of manual and automated plant counts in these small plots demonstrated that the commercial algorithms generated highly accurate plant counts (see Table 1).

Automated counts by commercial algorithms are generally based on differences between green (plant) and brown (soil) pixels. For accurate counts, individual plants should not be touching, and fields must have low weed density.

About this project

This work is part of the national project *Adoption of precision systems technologies in vegetable production* (VG16009), a strategic levy investment under the Hort Innovation Vegetable Fund. It is led by DAF QLD, and the aim of the project is to support the vegetable industry with the adoption of precision agriculture technologies. This project is working with growers across Australia to implement the following precision agriculture technologies and assess their potential in vegetable systems including:

- EM38 soil mapping.
- Crop sensing imagery for various applications.
- Strategic soil and plant sampling.
- Yield prediction from remote sensing imagery.
- Yield monitors.
- Variable rate applications.

The project has a number of collaborators across Australia including the University of New England, Tasmanian Institute of Agriculture, Harvest Moon, Primary Industries and Regions South Australia, vegetablesWA and the Society of Precision Agriculture Australia (SPAA).

Table 1: Comparison of manual and automated plant counts from small plots in lettuce, broccoli and cauliflower.

	Lettuce		Broccoli		Cauliflower	
	Automated	Manual	Automated	Manual	Automated	Manual
1	92	93	72	72	55	55
2	88	89	71	71	56	56
3	91	92	76	75	51	51
4	98	98	72	72	52	52
5	86	86	73	73	54	54
6	85	85	NA	NA	NA	NA
Accuracy	99%		99%		100%	

Find out more

DAF QLD wishes to make clear that the applications and platforms mentioned in this article **do not imply any endorsement** of the products by the Department.

Please contact DAF QLD Development Horticulturist Celia van Sprang on 0459 862 266 or celia.vansprang@daf.qld.gov.au.

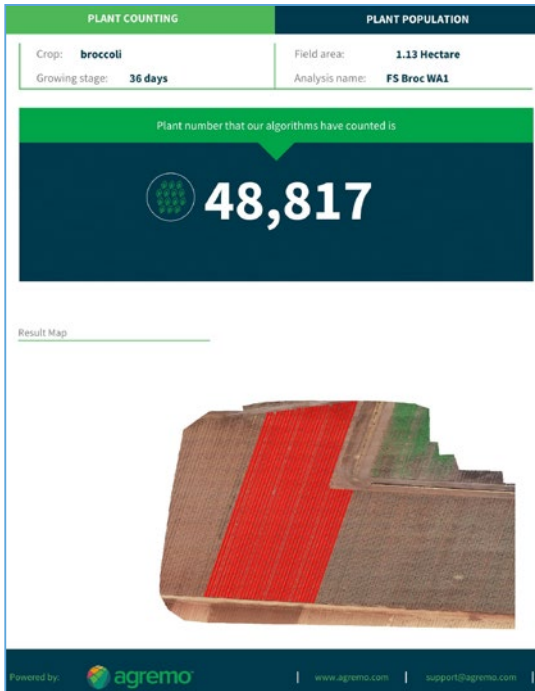


Figure 1: Example of output from the Agremo® online platform for automated plant counts of broccoli in Victoria. The area of automated counts is highlighted in red.

Note: subscription charges apply to Agremo® analyses for areas greater than 10 acres per individual analysis.

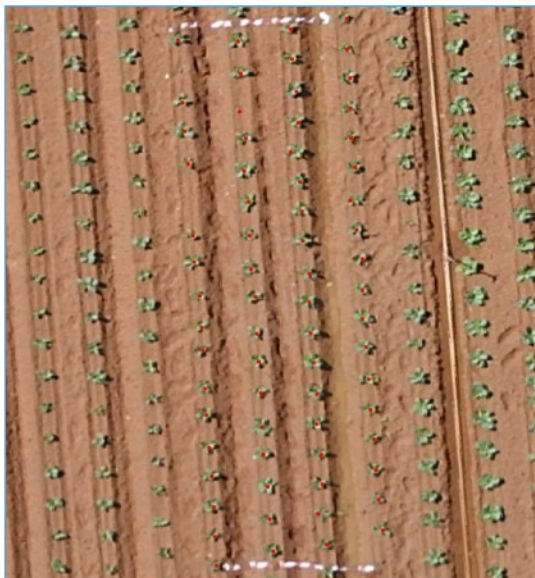


Figure 2: Small plot to monitor accuracy of automated plant counts in cabbage.

Expressions of interest open for grower study tour

Are you a vegetable levy payer who is practicing precision agriculture such as controlled traffic farming, crop/sensing imagery, soil mapping, variable rate inputs or yield monitoring?

Are you thinking of implementing any of the above in your vegetable growing business, and are you prepared to share your ideas with the wider vegetable industry?

A grower study tour of South Australia, Victoria and Tasmania from 4-11 September will give you the opportunity to visit case study farms and share experiences in getting the most out of precision ag technologies for your vegetable growing business. This tour is part of *Adoption of Precision Systems Technology in Vegetable Production (VG16009)*.

Flights, accommodation, coach travel and attendance at the Society for Precision Agriculture Australia (SPAA) 2019 Symposium in Launceston, Tasmania are included and covered by the tour.

For further details and to register your interest, contact Celia van Sprang at celia.vansprang@daf.qld.gov.au or 0459 862 266 or Gayathri Rajagopal at gayathri.rajagopal@daf.qld.gov.au.

Please note that there are limited places available, and expressions of interest close on 28 June.

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Kate Rehbein: Sharing the Bunda Ginga tale

Kate Rehbein married into a fourth-generation Queensland farming family that had a rich history of growing sugarcane before diversifying into several smaller horticultural crops. Today, Kate and her husband Anthony grow several commodities including ginger, and her focus in recent years has been selling their ginger online to Australian consumers. Kate speaks to *Vegetables Australia* about her journey.

Ginger is used in many products including medicinal remedies, desserts, drinks, as a garnish for certain foods, and much more. Its history in Australia dates back to 1788 when the First Fleet arrived, but it would be another 150 years before it was grown commercially on our shores.

Today, ginger is grown in both the northern and southern regions of Queensland and northern New South Wales. One of Queensland's ginger producers is Kate Rehbein and her husband Anthony, a fourth-generation grower in Bundaberg.

The couple own Hummock Farms Company, which has two sub-businesses: the ginger growing operation Bunda Ginga and Hummock Produce. In addition to ginger, Anthony is currently growing eggplant, tomato, kale and watermelon.

Kate's role in the business is operational; she takes care of the finances along with human resources, quality assurance, as well as overseeing the Bunda Ginga retail business (both online and a retail store in Bundaberg). In 2017, Kate's hard work was recognised when she received a nomination for the Women in Horticulture award at the Hort Connections National Awards for Excellence.

A ginger approach

Kate and Anthony first started producing ginger in the early 2000s. Since then, Anthony has been President of the Australian Ginger Association while Kate has established Bunda Ginga as an online business. She explains that prominence was one of the reasons behind her decision to turn to online sales.

"One of the issues we were dealing with was the importation of ginger from Fiji. And we thought, how can we market ourselves differently to the public? We knew there were people out there who wanted those stories behind their produce," Kate explains.

"There was an opportunity to market Australian ginger products so that's what we did for our ground, pickled and ginger syrup products, as well as supplying fresh."

Despite the growing interest in Bunda Ginga products, there are still challenges both on- and off-farm. Kate says it can be difficult to juggle both the business and on-farm responsibilities.

"We've got three sides of our business: the growing side, the Bunda Ginga side and we have our retail shop – a produce and florist shop in town where we sell our products," she says.

"You try to keep your fingers in so many different pies as well as keep a level head at the same time. It does produce challenges. But when people come back and tell you how good your product is, it makes your job worthwhile.

"We enjoy telling our story about the prominence of our products; how we do things sustainably and talking to people who are generally keen to buy direct from the farmer."

Seizing opportunities

As a grower and business owner for almost two decades, Kate believes that "it's never been a better time for women to get into horticulture".

"There are just so many opportunities that weren't out there 10 or 15 years ago. You just have to follow social media and see different women in different positions in horticulture doing what they love, which is exciting."

Kate and Anthony's daughter, Lilly, is following in her parents' footsteps. She has started an agriculture degree at the University of Queensland's Gatton Campus, and Kate says she is interested in returning to the family farm one day.

"We'd like to push Lilly to work somewhere else first before she comes back," Kate explains.

"We're a firm believer that you need to branch out and get your own ideas before you come back to the farm. But we're always open for any of our children to come back and work for us."

Kate searches the internet and social media for advice and new ideas, as well as industry publications. She also enjoys travelling around to different shops and farms to see how their operations work.

"Both Anthony and I love to travel; we love being overseas. Both of us went on

an AUSVEG grower tour to Europe to see the technology and the way people farm over there.

"We visited Koppert Cress in the Netherlands which produces micro-herbs, and they told us how they get consumers to want their product. And that's where Anthony wants to be – where consumers are asking for a product rather than him trying to sell his product to the public."

It is hoped that in five years' time, the Rehbeins will expand their retail business.

"We're looking to be vertically integrated where we can grow and supply our retail shop with fresh and value-added products," Kate says.

"We're also looking at agri-tourism where we can get people to visit our farming business and tell our story, and get people more involved in knowing where their products are coming from," Kate says.

"This is basically to grow, pack and sell to the end consumer and have that story with them."

Achieving goals

Kate has some wise advice for women looking to establish their own horticultural business.

"You have to believe in yourself. I always believe you've got to go with your gut feeling and stay true to your values, and not compromise because you're worried about what other people think," she says.

"There will always be people out there who will knock you for what you want to achieve, but you've just got to go with your gut, believe in what you want to do and go for it.

"Sometimes it takes time, but you can't rush things. In the end it's worth it – because if you just have the feeling that it is a good idea then you should just do it."



Kate and Anthony Rehbein.
Images courtesy of Selina Ferrais Photography.



Image courtesy of Sabrina Lauriston Photography.

Find out more

Please visit bundaginga.com.au.

Strengthening biosecurity practices across Australia's Top End

This edition of *The Front Line* features the Northern Territory Department of Primary Industry and Resources Plant Biosecurity Branch. AUSVEG Biosecurity Officer Madeleine Quirk spoke to the NT's Chief Health Plant Officer Dr Anne Walters about the Department's roles and responsibilities, the challenges the Top End faces and future opportunities for the biosecurity sector.



NT DPIR Plant Biosecurity Officer Hannah Cooke conducts the fruit fly trapping surveillance program in the Northern Territory.

Biosecurity is focused on managing the risk of pests and diseases on the Northern Territory's economy and environment, as well as protecting the health and wellbeing of the community. Biosecurity is also critical for supporting market access for agricultural products by ensuring they are free of pests and diseases, therefore upholding the reputation and quality expected of Northern Territory-produced products.

The Department of Primary Industry and Resources (DPIR) Chief Health Plant Officer Dr Anne Walters said although the Northern Territory was free from many pests and diseases that were present in neighbouring south-east Asian countries, it was critical the Territory was diligent when moving people or goods into the Top End.

"The expansion of global travel and trade has made it easier and more affordable to move people and goods over large areas, but it poses a significant risk of introducing and spreading pests and diseases," Dr Walters said.

"Therefore, implementing practices that reduce the likelihood of introducing pests and diseases, or preventing the spread of pests and diseases, is critical for protecting local industries and supporting domestic and international trade."

A cohesive branch

The NT DPIR Plant Biosecurity Branch has a lead role in promoting biosecurity resilience in the Northern Territory. Biosecurity resilience can be broken down into four areas: **prevention** – preventing pests and diseases from entering the Northern Territory; **preparedness** – preparing for incursions, including through awareness and education activities; **response** – responding to detections of pests and diseases to prevent their impacts on broader agriculture; and **recovery** – overseeing recovery actions following a pest or disease incursion.

The Plant Biosecurity Branch works cohesively to achieve biosecurity resilience by:

- Adopting contemporary policies and approaches to support effective and efficient biosecurity activities.
- Providing diagnostic and research support to industry.
- Developing engagement and educational information for industry and the broader community to improve biosecurity awareness.
- Implementing effective and robust surveillance activities for notifiable pests and diseases.
- Partnering with industry to protect against the establishment or spread of pests and diseases after entry into the NT.
- Harnessing appropriate surveillance data for certification and/or demonstration of area freedom.
- Supporting effective plant pest incursion and biosecurity management by providing quality diagnostic services and strong technical support in biosecurity operations.

The NT DPIR also continues to support the varied and diverse horticultural market in the Northern Territory by conducting continuous surveillance activities for growers, which includes citrus, Asian vegetables and tropical fruits in the Darwin region. In the Katherine region, surveillance is conducted on the aforementioned crops along with hay, sandalwood and strawberries.

Responding to biosecurity threats

Critical to responsiveness in the Northern Territory is to ensure the NT DPIR has trained and qualified staff who can rapidly respond in the event of an incursion.

"We achieve this through training, exercises and on-the-job experience. We also have a dedicated Emergency Management team who are responsible for assisting to establish the Control Centre, procedures, and systems in the event of a response. This team is supported by staff from the Biosecurity and Animal Welfare Division, the broader Department, other government departments, and from industry to enable the necessary activities and functions to occur," Dr Walters said.

The NT DPIR is increasingly working with other Departments to ensure a multi-agency approach to biosecurity incursions, which allows it to identify and source resources from across government. It also works closely with other states and territories to respond effectively to new plant incursions, as required.

One of the critical success stories for the Northern Territory is the level of engagement between government and industry in the event of biosecurity outbreaks, including grapevine leaf rust, banana freckle and citrus canker. Industry partnerships result in strong outcomes throughout a response and ensure delivery of outcomes that meet the needs of all stakeholders.

Preparing for potential incursions

A key component of the work of the Plant Biosecurity Branch is to prepare for new plant incursions. This includes drafting policies and procedures for emergency response; developing appropriate systems that can be enacted in the event of an incursion; partnering with industry bodies to address knowledge gaps; ensuring legislation and regulations are contemporary and will provide the necessary mechanisms to effectively respond; and working with industry and the community to raise awareness of the roles and responsibilities and legislative requirements of an emergency response.

The Northern Territory takes a risk-based approach to preparing for incursions. This is based on both the likelihood and consequence of plant pest incursions and enables it to direct resources towards



Top End border regulations

The NT DPIR is a key player in protecting northern Australia by supporting national frameworks for biosecurity. Underpinning this framework in the Northern Territory is the *Plant Health Act 2008*. The Act is in place to help prevent the spread of the following pests: ants, fruit flies, scale insects, thrips, sucking insects and soilborne pests and snails. The *Livestock Act 2008* also prevents the introduction of bees without appropriate certification.

When travelling to the Northern Territory, there are laws that stop some fruits, vegetables, plants and plant material from crossing the border. There are many threatening pests and diseases found interstate which are not found in the Top End. Quarantine bins are present at all airports and railway stations for the disposal of fruit and other products from interstate.

battling those pests and diseases that pose the greatest risk to industry. In doing so, the Plant Biosecurity Branch considers existing and emerging industries, as well as critical pests of national and local significance. This approach also enables the branch to focus resources towards high priority pests and diseases.

Current challenges and future opportunities

Some of the major challenges facing the DPIR biosecurity sector include lack of knowledge and awareness about pests and diseases across the broader community; lack of consistency in biosecurity practices across industries; limited resources for the size of the land area that is being managed; and a vastly different climate that the Northern Territory has compared to other areas of Australia.

Despite this, there are many opportunities for plant biosecurity in the Northern Territory.

"DPIR will continue to build on the relationships between government and industry to strengthen biosecurity resilience, continue to build on the effective governance practices that are already in place in the Northern Territory, and continue to develop a risk-based approach to biosecurity, based on informed decision making, risk assessment, knowledge and targeted research," Dr Walters said.

"Continuing to build on our reputation for sound research and diagnostics and robust surveillance programs to support the early detection of critical plant pests, as well as learning from current and past emergency responses to build expertise in biosecurity responsiveness and recovery, are also opportunities."

Find out more R&D

Please visit nt.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. The Farm Biosecurity Program is funded by the Plant Health Levy.

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Pacific Island workers with Russell McCrystal on his Queensland farm.

Pacific Labour Scheme gets the green light

Growers employing Pacific Island workers through the Australian Government's Seasonal Worker Programme (SWP) are also joining the Pacific Labour Scheme (PLS), which offers the opportunity to access a trained workforce for up to three years.

Russell McCrystal grows sweetpotato and sugar cane on 250 acres in South Kolan, 26 kilometres west of Bundaberg in Queensland. In the peak season, he has a team of 45 staff including 24 workers from Vanuatu, but this was not always the case.

"In 2014, we started out using a mixture of locals, backpackers and labour hire agents but with a high turnover of staff, constant retraining to get them to a productive level made this approach counterproductive," Russell said.

"We soon realised we needed a better system. If we were going to succeed, we needed a plan to source good, reliable staff.

"As a small business we were nervous, so we visited other regions, met with other growers and saw different approaches. Ironbark Citrus in Mundubbera was really supportive and introduced us to the Seasonal Worker Programme. We trialed six workers in 2015 and now in 2019, we have 18 men and six women from Vanuatu."

Russell highlighted the benefits of a returning workforce, which include reduced costs associated with retraining and less need for supervision.

"The Seasonal Worker Programme has given us the confidence to train workers knowing they will stay for the whole nine months. That's why I am excited by the Pacific Labour Scheme. It encourages us to further train and invest in particular staff who show promise.

"The scheme has given us the green light to spend the time and the money so we can potentially have trained workers with us for three years."

Hiring a reliable and returning workforce has captured the interest of several other horticultural producers. Ten employers using the Seasonal Worker Programme are now looking to recruit through the Pacific Labour Scheme to employ workers for roles between seasons.

Looking ahead

While the sweetpotato season is nearly over, Russell is already planning next season's labour mix.

"The Pacific Labour Scheme staff will become the core team. They will give direction and guidance to seasonal workers both in and out of the workplace. This approach will give workers the ability to get up to speed quicker, increasing our productivity."

Employer feedback on the performance of Pacific Island workers has been positive, with both the Seasonal Worker Programme and Pacific Labour Scheme proving to be a valuable source of labour and complementing growers' mix of other workers.

The Seasonal Worker Programme and the Pacific Labour Scheme give farmers peace of mind, helping meet both seasonal and non-seasonal employment needs.

Meanwhile, Pacific Island workers benefit from the opportunity to earn Australian wages and gain valuable on-the-job skills. Workers have used the money earned in Australia to pay for their children's education, start a small business or build a house. For the workers and their families, this can be a life-changing opportunity.

The Pacific Labour Scheme commenced in July 2018, building on the success of the Seasonal Worker Programme. The Pacific Labour Scheme is an employer-sponsored program open to all industries in rural and regional Australia when there is not enough local Australian labour to meet demand.

Under the Pacific Labour Scheme, workers can stay in Australia for up to three years, complementing the nine months under the Seasonal Worker Programme.

The two programs are a win-win for Australia and sending countries, helping to fill labour shortages in Australia and provide opportunities for Pacific Island workers to earn an income and develop skills.

Find out more

Please visit dfat.gov.au/labourmobility, email enquiries@pacificlabourfacility.com.au or phone 07 3775 7750.

Horticulture education: The next step

In the last edition of *Vegetables Australia*, we heard how younger generations have initial exposure to the vegetable industry. What is the next step for those who show an interest and may want to pursue a career in horticulture? Sophie Lapsley investigates.

Upon leaving school, students interested in horticulture will look for an appropriate course, usually in their local area. If schools and careers advisors do not have this information on hand, the next likely step will be to go online. If you search on the government sites there seems to be a range of certifications offered; however, if the student then goes to the individual training provider's site, the courses are often discontinued or contain units that are not applicable to the vegetable sector. This is not an easy process, and there is a chance students' interest will be lost at this point.

Why aren't all available certifications offered? To secure funding for the courses, training organisations need the numbers and these usually come from more popular topics. This is where the industry can have an impact if there is a need for a certification with certain units in your area, state or across the industry.

Making an impact

How do the certifications offered stay up-to-date with industry needs? This is where Skills Impact plays a role. Skills Impact is a not-for-profit organisation that works across Australia to benchmark learning and skills standards for industry. Students and workplaces have access to nationally-consistent skills standards and qualifications, supporting greater employment opportunities and industry competitiveness.

Skills Impact collaborates with industry, government and training providers to review and develop vocational units of competency, skillsets and qualifications. Working with industry and government, it can track industry trends and document skills, opportunities and challenges.

Anyone can give feedback on the topics that they are interested in or involved in. This is the industry's chance to ensure that qualifications and units remain appropriate and relevant.

This is what we can do:

- Ensure schools and careers advisors are aware of the vegetable industry as a career and what training organisations are delivering production horticulture courses.
- Provide a platform that makes access to available courses easier for potential students.
- Approach training providers where there is demand and work with them to deliver certificates that best meet the industry's needs.
- Make sure the industry has a say by getting involved with organisations such as Skills Impact.

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

Veg Inductions goes live

VegPRO is pleased to announce Veg Inductions is now online. This is an online general induction for anyone wanting to, or already working in the vegetable industry. It takes students through the expectations of working on a farm including topics like safety, manual handling, biosecurity and hygiene.

The course is self-paced to suit a variety of learning styles and is also a useful resource for employers to use as refresher training. The course can be accessed through the VegPRO website or at vegpro.talentlms.com/index.

This is the first of a range of resources being released over the next few months from VegPRO to include an online course for fresh produce handling, a career pathway guide, job streams in the vegetable sector and an online facilitation training course.

Find out more

For more information or access to resources, please contact VegPRO Program Coordinator Sophie Lapsley on 0426 200 996 or sophie.l@rmcg.com.au or visit vegpro.com.au.

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

Project Number: VG15028

Hort Innovation | **VEGETABLE FUND**
Strategic Levy Investment

Please visit us
Hort Connections
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Eriez Magnetics - Protect Your Product & Equipment

Over 75 years Eriez has evolved into a world leader in separation technologies

In 1941, Orange Fowler Merwin provided magnetic separators to grain millers to protect their equipment. His customers complained that tramp iron found their way into the grain causing damage to milling equipment.

O.F. Merwin investigated a new magnetic alloy called "alnico" which possessed exceptional magnetic qualities, including a peak magnetic strength up to 30 times that of cobalt steel. He devised a permanent magnetic separator, sold it to a grain miller and Eriez Magnetics was born.

Today Eriez designs and manufactures magnetic separation, metal detection and materials feeding, screening, conveying and controlling equipment for many industries including foods and farming. Attention to product purity has never been greater, creating the need to detect and eliminate metal contamination. This reduces downtime and also prevents damage to machinery. Contact our experts for advice and recommendations on your specific application.



Minor use permits

Permit Number	Crop	Pesticide Group	Active	Pest/Plant disease/ Target weed	Date Issued	Expiry Date	Permit Holder	States
PER14816 Version 3	Carrot	Fungicide	Azoxystrobin	Powdery mildew, sclerotinia rot/ white mould and suppression of black rot	01-Jun-14	30-Jun-24	Hort Innovation	All states except Vic
PER14142 Version 4	Spring onions, shallots, Welsh onions	Selective herbicide	Octanoate	Broadleaf weeds	17-Oct-13	31-Mar-21	Hort Innovation	All states except Vic
PER14457 Version 3	Chicory, leeks, shallots, spring onions	Insecticide	Alpha-Cypermethrin	Redlegged earth mite (Chicory); Onion thrips (leeks, shallots, spring onions)	19-Mar-14	30-Jun-24	Hort Innovation	All states except Vic
PER14694 Version 3	Capsicums, cucumber, eggplants, herbs, lettuce (protected cropping)	Biological larvicide	Bacillus Thuringiensis Subsp.	Fungus gnats	01-Jun-14	30-Jun-24	Hort Innovation	All states except Vic
PER13901 Version 4	Capsicums, snow peas, sugar snap peas	Herbicide	Glyphosate	Annual and perennial grass and broadleaf weeds (shielded spray only)	06-Apr-13	30-Jun-24	Hort Innovation	NSW and Qld only
PER14432 Version 3	Brussels sprouts	Herbicide	Pendimethalin	Grass and broadleaf weeds as listed on product labels	23-May-14	30-Jun-24	Hort Innovation	All states except Vic
PER14505 Version 4	Snow peas, sugar snap peas	Fungicide	Pyrimethanil	Grey mould	01-Jul-14	30-Jun-24	Hort Innovation	All states except Vic
PER81244 Version 3	Brassica leafy vegetables, chicory, coriander, endive, parsley, radicchio, silverbeet, spinach, swede, turnip	Herbicide	Fluazifop-P-Butyl	Grass weeds as specified on the approved label	01-Jul-16	30-Jun-22	Hort Innovation	All states except Vic
PER86551	Green beans (organic production only)	Organic insecticide	Pyrethrins	Bean podborer	15-Apr-19	30-Apr-24	Hort Innovation	All states and territories
PER81876 Version 3	Selected vegetables. Please refer to the APVMA website for the full list.	Miticide/ Insecticide	Abamectin	Vegetable leafminer	24-Jun-16	30-Apr-24	Hort Innovation	All states except Vic
PER80169 Version 3	Carrots	Herbicide	Metribuzin	Various broadleaf & grass weeds as per product label	03-Mar-15	30-Apr-24	Hort Innovation	Qld only
PER14695 Version 4	Parsnips	Systemic fungicide	Metalaxyl-M	<i>Pythium spp.</i> and <i>Phytophthora spp.</i>	01-May-14	30-Jun-24	Hort Innovation	All states except Vic

All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at: portal.apvma.gov.au/permits. This communication has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15027.



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On-farm plastic waste: Where to now?

About 18 months ago, China announced it will no longer accept a number of recyclable materials from Australia. This has left a huge gap in our waste management, particularly in the vegetable industry, which uses a large amount of plastic-based products on-farm. *Vegetables Australia* investigates.

Around four years ago, a project focusing on the use of plastics and recycling for the Australian vegetable industry was conducted by RM Consulting Group (RMCG).

A strategic levy investment under the Hort Innovation Vegetable Fund, *Innovative ways to address waste management on vegetable farms* (VG13019) engaged with growers and the wider vegetable industry, as well as plastic providers and processors, to determine the extent of the problem in different growing regions throughout Australia and identify potential solutions.

Fast-forward to 2019, and the landscape has shifted. In January last year, China banned the importation of 24 types of recyclable materials from Australia, which has significantly impacted Australia's waste management system.

This impact has filtered down to Australia's agriculture and horticulture industries. Carl Larsen from RMCG worked on the research project that concluded in 2015 and he explained how China's decision has affected growers.

"The cost of alternative options to manage on-farm plastic waste has now increased," Mr Larsen said.

"Accumulation of plastic waste on-farm is really not an option, particularly for vegetable growers as they need to maximise the use of available land which is often quite expensive and tight on rotations. Stock piling in storage, even if it is disposed of correctly, is just a really impractical measure because it's taking up space that could be used for production or other things like machinery storage or packing shed facilities."

Recycling options

Despite the change in Australia's waste management system, some stewardship schemes already exist. This includes drumMUSTER, which provides Australian agricultural and veterinary chemical users with a recycling pathway for eligible empty chemical containers.

Meanwhile, irrigation company Netafim has set up a program to facilitate the collection of some on-farm recyclable material and deliver it to relevant recyclers. Netafim Business Development Manager Australia/New Zealand Peter Durand explained how this occurs.

"We own a number of recoiling machines which are suitable for in-field recoiling of dripperline, and we loan those to our customers so they can recoil their own dripperline in the field in a manner that is acceptable by the recycling company. We then arrange for transport to those recyclers," Mr Durand said.

"We recognise that particularly for vegetable growers, this is a product that is only used for a temporary period of time. We recognise that at the end of life, the product needs to do something other than sit in the field. That's why we put the program in place – so it can be recycled."

More solutions needed

Mr Larsen said further investigation into alternative products or services was crucial, particularly for the vegetable industry.

"I think alternative products are quite an effective short-term measure, and there are biodegradable and photo-degradable plastic mulches available as an example," Mr Larsen said.

"The project highlighted that there is quite a lot of difference in terms of the products and the cost. For instance, with photodegradable plastics, you don't want that breaking down partly and accumulating in your soil profile because there's potential for contamination; whereas biodegradable mulch can break down naturally with soil microbes.

"However, this is often more expensive, and it's a fairly loosely regulated market in terms of how products are promoted to growers and the horticulture industry.

"We could look at other horticulture industries overseas and what they're doing in terms of the veggie sector. There needs to be greater will to do something with the waste that's currently being generated in Australia."

R&D

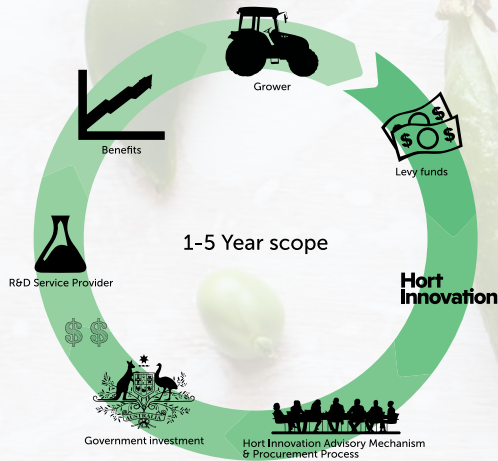
Plastics consumption and recovery by application area in 2016-17 (tonnes and % recycling rate)

Application area	Recovery	Consumption	Recycling rate
Agriculture	3,700	71,800	5.2%
Automotive	122,800	610,000	20.1%
Built environment	5,600	610,800	0.9%
Electrical & electronic	9,400	135,900	6.9%
Packaging - municipal	145,800	666,100	21.9%
Packaging - C&I	97,100	213,700	45.4%
Other application area	21,000	784,500	2.7%
Unidentified applications	9,900	420,300	2.4%
Total	415,200	3,513,100	11.8%

Source: 2016-17 Australian Plastics Recycling Survey, National Report, Final Report

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 0.51 per cent at the first point of sale. The Federal Government also provides funding in addition to grower levy payments. Once paid, the research and development levy 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.

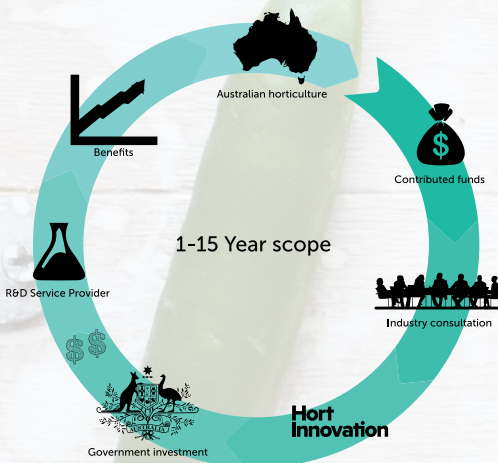
Strategic levy investments have a one- to five-year scope and the R&D is designed to directly benefit growers in the vegetable industry. Project topics range from pest and disease management to biosecurity matters, with findings communicated through a variety of channels, including *Vegetables Australia*.

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/growers/vegetable-fund/.

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 hortfrontiers.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/about/investing-is-our-business/concept-proposal-form/. Growers are also encouraged to reach out to the SIAP panellists for the industry (available from the Vegetable Fund page).



Nha Huynh.

A fresh approach to extending the shelf life of broccoli

Tasmanian Institute of Agriculture PhD student Nha Huynh is investigating ways to maintain the quality of fresh fruit and vegetables after being transported long distances and while on display at the retailer, with the aim to reduce food waste. Nha spoke to *Vegetables Australia* about her research.

The issue of consumer waste in Australia has been well-documented in recent years through series such as *War on Waste* (aired on the ABC), which highlighted the staggering volume of fresh food and other items that consumers dispose of each year.

Foodwise reports that up to 40 per cent of items that end in the bin are food, with the average Australian household disposing over a thousand dollars' worth each year.

With these figures in mind, Tasmanian Institute of Agriculture PhD candidate Ky Nha (Nha) Huynh is currently investigating postharvest shelf life extension of fresh produce using innovative packaging technologies, and broccoli is an example of fresh produce that has commercial shelf-life issues.

Broccoli suffers accelerated senescence, or deterioration with age after harvest, as its green florets are immature and in a rapid growing state at the time of picking. The shelf life of broccoli can be 3-4 weeks at zero degrees Celsius, but low consistent temperature is hard to maintain across the supply chain.

Quality loss occurs quickly at elevated temperature (as short as 2-3 days at 20 degrees Celsius), and is mainly characterised by wilting, yellowing and the formation of off-odours.

"Consequently, keeping broccoli cold has become a must, and the industrial practice has been topping broccoli with crushed ice in polystyrene boxes or crates for transportation," Nha said.

The ice adds extra handling costs and can damage the floret buds, which subsequently leads to rots and the formation of off-odours. Nha's research aims to find alternatives for top-icing and reduce the dependence on low temperatures without compromising broccoli quality.

Nha is one of 10 PhD students who are undertaking their studies at the Australian Research Council (ARC) Training Centre for Innovative Horticultural Products.

"I decided to work on this topic after consulting with experts in the field about the major concerns of producers and retailers. Broccoli is expanding in growing area and is among the vegetables that have the highest production and market value in Australia," Nha said.

Project methodology

As part of her project, Nha has been trialling modified atmosphere packaging (MAP) options. Modified atmosphere is the practice of changing gas ratios within packages to improve shelf-life. These gases include oxygen, carbon dioxide and nitrogen.

"One of the main reasons for storing broccoli at low temperatures is to reduce its respiration rate; and removing ice from broccoli shipping would mean the temperature would not be as low as zero degrees Celsius," she explained.

The use of MAP options was suggested to provide similar effects to top-icing by lowering oxygen levels and increasing carbon dioxide concentrations.

So far, Nha has found that the chlorophyll and carotenoid contents (related to colour) and marketable weights of broccoli could be retained by using suitable MAP products, even at elevated temperatures (10 days at 10 degrees Celsius as in one trial).

"Two major limitations with using MAP are the browning at stalk ends, and improper packaging choices can lead to the development of off-odours while the broccoli still looks good," she said.

"To address these problems, I tested different MAP options to identify the most suitable ones and I am trialling anti-browning solutions that can be combined with MAP."

Long-term goals

Nha's next step in her research is to up-scale to simulate bulk broccoli shipment and verify the shelf-life improvements against current practice.

Her ultimate aim is to provide solutions for improving fresh produce shelf life and reducing food waste, and she believes that MAP options could also apply to other fruits and vegetables with similar issues to broccoli.

"I think my findings would provide scientific evidence for vegetable growers and the wider industry to consider changing the current practice. Particularly for broccoli, iceless shipment would allow more room for export as well as reduce plastic (polystyrene) and food waste," Nha says.

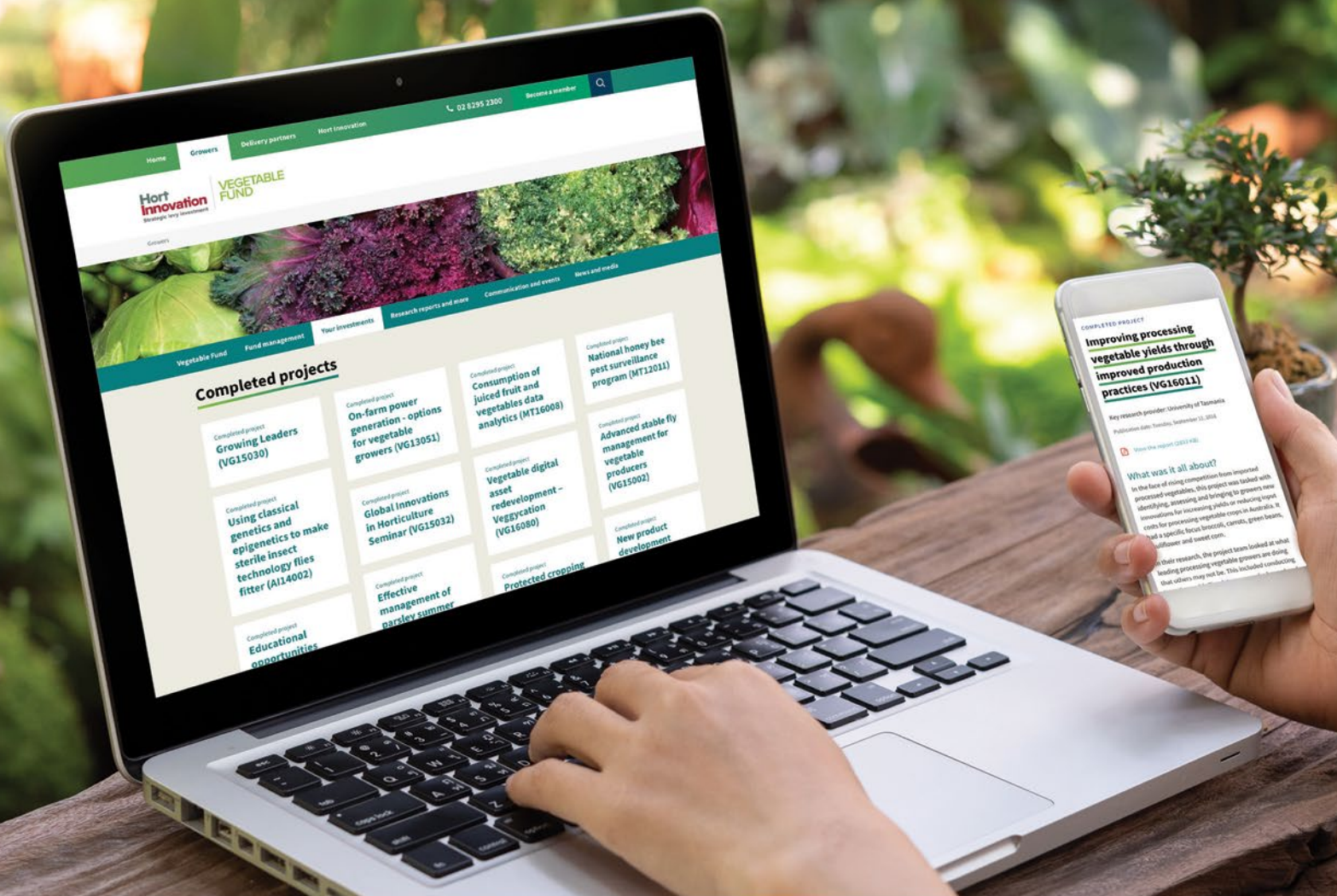
"In order to apply the new technologies, however, further analyses on cost-benefits and perhaps more trials on different shipping scenarios are still required."

Find out more

Please visit utas.edu.au/arc-training-centre or follow @InnovativeHort on Twitter, or email innovativehort.arc@utas.edu.au.

Nha Huynh 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 IC140100024), Woolworths and the University of Tasmania, with contributions from industry partners and research collaborators.



The Vegetable Fund has a new website

Hort Innovation's new website allows the vegetable industry to find more information and more resources quickly and easily.

Six pages of industry-specific content provide you with:

- Up-to-date details on levy fund management
- All ongoing investments with updates, advice and actions you can take now
- Completed investments with user-friendly summaries, final research reports and more
- More resources, information and tools than ever before
- Ways to connect with industry and people you can contact now.

NEW – completed investments:

- **View a user-friendly summary of what the investment achieved**
- **Download the final research report with in-depth information**
- **Access fact sheets, publications and other tools and resources that were developed as part of the investment.**

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**VEGETABLE
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horticulture.com.au/vegetable-fund



Greg Owens
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NT Farmers Association

The Northern Territory is in a post-development slump with the major off-shore gas plant, Inpex, now entering its production phase. This project had about 8,000 construction workers out of the NT's working population of about 150,000 people, and now scales back to 600 employees. This has had a significant impact on business around town and has the NT Government looking for other commercial drivers in the economy. The proportionally large cut to the GST funding for the NT following the recalculation of the GST carve up has not helped and has made managing the NT economy very problematic.

Agribusiness is one area that has a great track record of contributing to the NT economy. The NT Cattlemen's Association recently celebrated its 100-year anniversary and is worth between \$600 million and \$1 billion (depending on whose calculations you use) which shows its staying power and value to the north. Horticulture is much younger, but in the last 35 years has grown to a \$250 million industry and supports sustainable regional economic activity by reinvesting most of the turnover into local businesses and workers.

This makes the NT Government's legislative reform agenda of the Environmental Protection, Water Act, Land Clearing Regulations and other legislation a very important part of the economic picture. Despite the often-held belief that there are unlimited amounts of land and water in the north, the amount of water that is held in our underground aquifers near good soils – that can be accessed in the dry season where we have the bulk of our production – is limited. Agribusinesses are asking for reform that will result in policies and procedures that lead to greater certainty for investment. It will also lead to good science, underpinning the sustainability of NT resources into the future.

In return, agribusiness promises to be more sustainable and continues to have a positive effect on the small and sensitive NT economy than other 'boom and bust' industries. NT Farmers is always looking at ways to expand our cropping options and, with the NT Government, leads the push for greater diversification of plant production options across the north.



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vegetablesWA

The most significant news is the changes to the overtime rates for casual employees under the Horticulture Award, which came into effect on 15 April 2019.

On 2 April, the Fair Work Commission published its decision in respect of the issue of overtime payments for casuals under the Horticulture Award.

Whether the changes affect you or not depends on the structure of your business and whether it's registered under the State or Commonwealth Award.

If you are not sure what your business structure is and whether the State or Commonwealth Award applies to you, we recommend you get in touch with your accountant. If you have any other questions relating to the award rate changes, please contact Fair Work or vegetablesWA.

Truyen Vo has been busy hosting the agrichemical workshop with AUSVEG in Geraldton. The workshop was very well-attended, and allowed lots of local growers to discuss pests and diseases and how to manage them.

A number of staff including our QA Coordinator Joel Dinsdale, Benchmarking Lead Bryn Edwards, Export Development Project Lead Manus Stockdale and Field Extension Officer Sam Grubisa recently travelled much further south to Manjimup, where we met with a range of growers.

We also launched our new podcast series, Tractor Time, recently. The team has done a great job producing our podcast. You can listen to our first interview with Peter Dobra from the Loose Leaf Lettuce Company on all good podcasting platforms by searching 'Tractor Time' or finding the link on our website. We'll be releasing one each month, so make sure you subscribe to get it delivered straight to your device.



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AUSVEG SA

AUSVEG SA is concerned about recent changes to the Horticulture Award and the significant challenges facing growers in our state. We are working with colleagues interstate and key growers to investigate and implement ways of managing this new reality for South Australian growers, including investigation of piece-rates as a tool for industry and worker share arrangements between growers to manage overtime liabilities.

It is clear from the decision of the Fair Work Commission that businesses will need to minimise their casual workforce where possible, and look at ways to better batch-manage their produce so that businesses are not working public holidays. Unfortunately,

these are long-term solutions and businesses have already faced the challenge of managing these changes over the short-term due to the implementation of these changes prior to the busy Easter break.

Outside of these changes, AUSVEG SA has set an agenda to assist growers to manage their rising input costs. We are working with the industry to try and implement efficiencies through our LEAN efficiencies project and other initiatives such as our annual energy tender. While these initiatives can offer some degree of relief for growers, labour continues to be our industry's greatest challenge moving forward and the area where our sector must innovate and adapt to keep its head above water.



Nathan Richardson
Tasmanian Farmers and Graziers
Association
Vegetable Council Member

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Tasmanian Farmers and Graziers Association

It is an exciting time in the Tasmanian potato industry, with the upcoming expansion of the McCain and Simplot chip plants. The news of the expansions comes as potato producers look to negotiate their contracts with Simplot and McCain and highlights the scale and growth of Tasmanian potato production.

Both the Simplot and McCain expansions are major investments, expected to cost \$53 million and \$40 million respectively. The Simplot upgrades will create larger storage and refrigeration facilities to hold more than 300,000 tonnes of potatoes.

With the expansion of the McCain plant, it will be McCain's main French fry facility in Australia and New Zealand. The investment into these facilities secures the future for Tasmanian potatoes and encourages their ongoing production well into the future.

Not only is the future secure in Tasmania for potatoes, but across vegetables. Significant production of peas and beans for the frozen market continues and pea producers are also preparing to negotiate their contracts with processors.

With such investments, the protection of the Tasmanian vegetable industry from risks such as pests and diseases is as important as ever. Pests such as the tomato-potato psyllid (TPP) pose significant risks to our industries. The possibility of TPP coming onto Tasmanian farms is very real, with an outbreak already seen in Western Australia.

Awareness of pest and disease risks and transmission is important for protecting our vegetable industry. The implementation of biosecurity measures is vital not only at the national and state level, but at a farm level as well. We encourage all Tasmanian vegetable producers to employ farm biosecurity measures and to monitor their farms for pests and diseases. It is at this point we recognise and acknowledge the work of Dr Kevin Clayton-Greene as the AUSVEG Biosecurity Advisor, and we wish him all the best for the future.

The expansion of potato processing facilities in Tasmania is positive for the state's potato industry. Ensuring the protection of this industry and all vegetable production through biosecurity is important not only to producers but to the Tasmanian economy. To ensure a continued bright future and growth of all industries in Tasmania, we encourage producers to implement farm biosecurity measures.



Robert Hardie

NSW Farmers' Association
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NSW Farmers Association

Ahead of this year's New South Wales state election, NSW Farmers called on all politicians and political parties to FOCUS on agriculture. We asked the parties to build foundations for a sustainable future; create opportunity through innovation; commit to driving down costs and increasing incomes; unlock regional capacity; and provide stewardship for our land and environment.

As part of this, we called for a particular FOCUS on:

- Improvements to the farm business environment and prioritising the Right to Farm.
- Investments to improve infrastructure and connectivity.
- Delivery of regional food hubs and effective supply chains.

NSW Farmers is pleased that many of the returning government's stated commitments seek to deliver against these themes. We've seen funding commitments for water infrastructure, energy, roads, Landcare, drought and connectivity.

There are a number of policy areas for horticulture that still need action. We continue to encourage the NSW Government

to take stronger action to protect our Right to Farm – we strongly believe a legislated solution, through a Regional Planning Act, is essential to deliver our members the business certainty they need.

Additional resources for biosecurity, building upon the significant legislative reforms of the last term, also remain an area for action. Managing fruit fly, flying fox netting, and neglected and abandoned orchards are the key biosecurity priorities for our horticulture members.

Notwithstanding the present drought, which has impacted rural and regional communities as well as agricultural production and outputs, the last four years in particular have seen significant 30 per cent-plus growth in the value of our agricultural industries. Now, based on the commitments that have been made for this term of parliament, NSW Farmers looks forward to working with the government to drive the value of our agricultural sector even higher as we do our bit to lift Australia's total agricultural production to \$100 billion by 2030.



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AUSVEG VIC

Victoria's first ever Labour Hire Licensing Scheme, which is designed to protect workers and crack down on dodgy operators, came into force on 29 April – with contractors given six months to sign up or else face significant penalties.

The scheme has been created in response to the independent Victorian inquiry into the labour hire industry and insecure work – a key election promise – which uncovered widespread exploitation of workers across Victoria.

Under the scheme, providers of labour hire services will be required to hold a licence and hosts will only be allowed to use licensed providers. AUSVEG VIC advises that you should have started consulting with your labour hire contractor about their plans for obtaining a licence. Employers that use unlicensed providers face fines of up to \$500,000.

Overtime penalties for casual employees engaged under the Horticulture Award have been changed and should be implemented in your business from the first full pay period on or after 15 April 2019, following a decision by the Fair Work Commission (FWC), which was handed down on 2 April.

These changes have been implemented and include:

- A 15 per cent loading (in addition to the initial casual loading of 25 per cent) for ordinary hours work performed on any day of the week between 8:31pm and 4:59am.
- In circumstances where an employee works more than 12 hours per engagement or per day, an overtime penalty rate of 150 per cent (plus 25 per cent casual loading).
- In circumstances where an employee works more than 304 'ordinary hours' over an eight-week period (an average of 38 hours per week), an overtime penalty rate of 150 per cent (plus 25 per cent casual loading).

Meanwhile, Hort Connections 2019 is almost here. This year's conference will be held from 24-26 June at the Melbourne Convention and Exhibition Centre, and will provide an excellent opportunity for Victorian growers to gain the best access to industry research and new products as well as hear from knowledgeable local and international members of the vegetable industry.



VGA trading as AUSVEG VIC



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Growcom

Growcom is proud to welcome AUSVEG as a foundation supporter of Fair Farms, the new industry-developed workplace training and certification program.

AUSVEG has been very supportive of Fair Farms ever since we've embarked on implementing the industry-led initiative. The national peak industry body's commitment to providing financial support reaffirms the horticulture industry's firm backing of the training and certification program, which is being developed by Growcom.

Currently in its proof of concept (pilot) phase, Fair Farms provides an industry standard for ethical employment practices which all horticulture businesses can subscribe to.

The Fair Farms Standard sets out what it means to be a fair and responsible employer in the Australian horticulture supply chain. It clarifies growers' obligations under Australian workplace relations laws.

As an industry, we want to reward the good growers who are doing the right thing by making it easier for them to get their fresh produce to the Australian public.

Through Fair Farms, growers will be able to take ownership of their fair employment practices and access appropriate training and certification to demonstrate their compliance to customers and the wider industry.

To become Fair Farms certified, a grower must undergo a self-assessment, training to close identified gaps and a third-party audit. The program is unique in that it is the only scheme designed for Australian growers and benchmarked against Australian legislation.

With support from the whole supply chain, we anticipate that Fair Farms will be operational by mid-2019. The program is being delivered by Growcom with initial funding from the Fair Work Ombudsman, industry groups and the Federal Department of Agriculture and Water Resources.

We will continue to consult with growers and members of the horticultural supply chain to ensure Fair Farms is robust and has industry's consolidated support.

Growers and other members of the supply chain who want to keep up-to-date with Fair Farms can register their interest via our website: growcom.com.au/fairfarmsinitiative.

Calendar

24-26 June – Hort Connections 2019
Where: Melbourne Convention and Exhibition Centre

Don't miss out on Hort Connections 2019, where AUSVEG and the Produce Marketing Association Australia-New Zealand (PMA A-NZ) will once again join forces to present the biggest event in Australian horticulture. Visit the website to register and find out more about speaker presentations, networking events and the Trade Show.

Further information: hortconnections.com.au

7-10 July – Costa PCA Conference 2019
Where: The Star Gold Coast, Queensland

Protected Cropping Australia is hosting its 15th biennial conference which will explore the theme of 'Seduction by Technology'. It will feature a pop-up shopping centre, technical how-to-grow information and social activities for like-minded growers interested in the future of intensive food production. There is also a choice of two farm tours that will travel north and west of the Gold Coast.

Further information: pca2019.com

4-6 September – Asia Fruit Logistica
Where: Hong Kong

Asia Fruit Logistica is Asia's leading trade show for the international fresh fruit and vegetable business. Last year's event attracted more than 13,000 visitors from over 70 countries and drew high-quality buyers from some 20 different markets across the Asia-Pacific region. The Logistica is accompanied by the Asiafruit Congress, which takes place the day before the trade show.

Further information: asiafruitlogistica.com.

11-13 November – TropAg 2019: International Tropical Agricultural Conference
Where: Brisbane Convention and Exhibition Centre

TropAg attracts over 700 delegates from around 50 countries and will feature over 300 presenters and keynote speakers. The program will focus on 'Shaping the science of tomorrow' across five program themes: field crops, horticulture, livestock, nutritious food and an AgFutures stream on technology and investment. The program is set to celebrate scientific research success stories and discuss how the tropics will address challenges in the future.

Further information: pca2019.com



Proudly supporting the next generation of Australian Horticulture

Corteva Agriscience™, Agriculture Division of DowDuPont, will present the 2019 Young Grower of the Year award at Hort Connections 2019. Visit alliancewithscience.com.au to read about last year's awards.

Come see us at Hort Connections 2019, Melbourne Convention Centre from 24–26 June 2019.