| January/February - 2019 |

vegetables australia

| GIRL POWER - CAMILLERI DAUGHTERS TAKE THE LEAD IN FAMILY FARM |

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EDITORIAL

Those who work the land are some of the most humble and unassuming individuals that we meet. We come across them in the search for growers to profile each edition – while some are keen for the opportunity to be featured, other are hesitant to embrace a moment in the spotlight and mistakenly assume that their story is not newsworthy.

Most growers are happy to be left to do what they do best – grow high quality, fresh produce for their customers – without praise or recognition. It isn't, however, reflective of what our readers, the wider industry and consumers are looking for. Time and time again, we see that personal stories and experience resonate the most with others, providing inspiration and a sense of pride in our industry.

With so many news articles tainted with hardship or negativity, there is a clear opportunity for the horticulture industry (and vegetable and potato growers in particular) to start proactively sharing their good news stories and achievements. As we enter another new year, there is no better time on the calendar to start.

On page 20 of this edition, Ian Muir of E.E. Muir & Sons shares a story that he is proud of. His business was named the Asia Pacific Regional Winner of the 2018 Corteva Environmental Respect Awards, a global accolade honouring fertiliser/agricultural chemical retailers and seed agents who operate their businesses in an environmentally beneficial way for their customers, employees and the community.

Like so many other award winners, it was the team at E.E. Muir & Sons that put together the application for the award, along with some encouragement from their local Corteva representatives. It was undoubtedly a challenge to promote the company's achievements in a compelling application, but the result has paid off with lasting recognition of their success.

As Ian noted, the horticulture industry has not always taken the opportunity to promote its positive impact to others, often to its own detriment. It's time for growers and all industry members to step into the spotlight and share their good news stories with the world, and encourage others to take the lead as well. It will not only be a positive move for you and your business, but also the wider industry.

AUSVEG is always keen to promote these stories and grower profiles across our communications channels, so if you have a good news story to share, please get in touch with the team on 03 9882 0277 or communications@ausveg.com.au.

MESSAGE FROM THE CHAIRMAN

AUSVEG has hit the ground running in 2019 as we continue to increase our advocacy activities, particularly our engagement with key political figures. This is set to accelerate in the months leading up to the Federal Election to ensure that future policies reflect the needs of our growers and their regional communities. These policy positions will be clearly outlined in the AUSVEG Federal Election document appropriately called "SPROUT", which will be freely available.

One of AUSVEG's priorities in 2019 will be biosecurity and ensuring that growers' interests are met when both state and federal governments and other key decision makers manage domestic incursions.

Labour issues are also high on our agenda. AUSVEG will continue to advocate for better access to a competent and willing workforce that is flexible enough to accommodate the seasonal variability in demand, while making sure growers around the country understand their obligations as employers.

AUSVEG will also continue to champion increased industry collaboration. There is a growing sentiment that the fragmented nature of the Australian horticulture industry is limiting its ability to engage and influence, which can ultimately prove costly when making decisions that affect our growers.

To achieve this, we will continue to engage with the National Farmers' Federation (NFF) Horticulture Council to ensure that our industry's needs are reflected in their policy formation.

Hort Connections 2019 will also provide a strong platform for the horticulture industry to increase its effectiveness and efficiency through greater collaboration. This year's event will be held from 24-26 June at the Melbourne Convention and Exhibition Centre. It is expected to draw 3,500 delegates from all facets of horticulture, including growers, supply chain members and industry representatives, and is an event not to be missed.

Bill Bulmer
Chairman
AUSVEG

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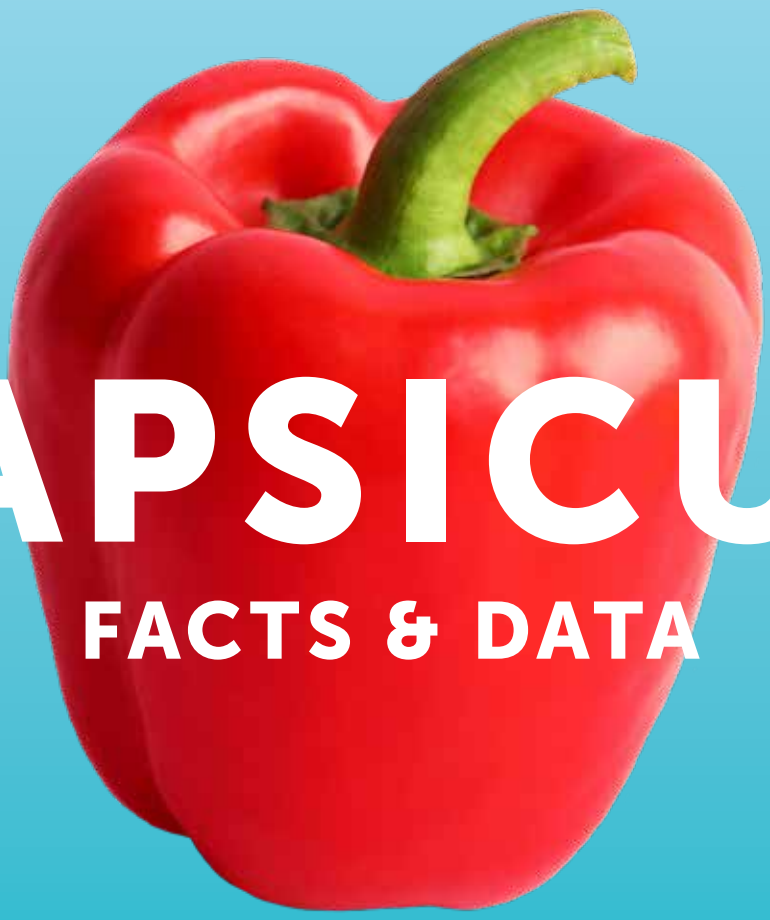


CAPSICUM

FACTS & DATA

1 The *Australian Horticulture Statistics Handbook 2016/17* reports that capsicum is grown across most states of Australia, with the majority of capsicum grown in Queensland. The major outdoor growing regions include Bowen and Bundaberg in Queensland; and Carnarvon in Western Australia.

2 According to Veggycation®, capsicum should be stored at >95 per cent relative humidity. Its firmness is directly related to water loss and packaging is important to maintain a high relative humidity.

3 For the year ending June 2017, 73,488 tonnes of capsicum was produced, with six per cent sent to processing. The value of production was $172.4 million while the wholesale value of the fresh supply was $204.3 million. *Source: Australian Horticulture Statistics Handbook 2016/17.*

4 According to Project Harvest Wave 44, taste and adding colour to a meal were the key influences for consumers to purchase capsicum. Barriers to purchase included price and already consuming enough for their needs.

5 Capsaicin, the volatile oil in capsicum seeds, is found in all species of capsicum but it only produces the fiery burning effect in some types, such as chilli. *Source: The Better Health Channel.*

6 Veggycation® states that capsicum should not be peeled. It is recommended to remove seeds and the core before use, and store in the vegetable drawer of the fridge.

7 Harvest to Home reports that in the 52 weeks ending 6 October 2018, the average spend of capsicum rose from $21.37 to $22.28.

8 Project VG13083 – *Identifying and sharing postharvest best practice on-farm and online* found that chilling-sensitive products, such as capsicum, can be stored for several days or even longer at low temperature before damage occurs. In the case of red and green capsicum, storage life was longest at 2°C and 4°C respectively; it took longer for the development of chilling injury to reduce quality than the rots, which inevitably develop at higher – widely recommended – temperatures of 7°C or more.

9 A search for capsicum on the AUSVEG InfoVeg database produces 76 results. To find out which strategic levy investments have featured capsicum and the focus of these projects, visit ausveg.com.au/infoveg/infoveg-database.

R&D

EXPORT AIRFREIGHT SECURITY CHANGES STARTING 1 MARCH 2019

The deadline for 100 per cent piece-level examination for all outbound international air cargo is fast approaching, with the requirements to come into effect from 1 March 2019. *Vegetables Australia* has issued this reminder for exporting vegetable growers.

The Commonwealth Department of Home Affairs is strengthening its aviation security arrangements in response to the changing security environment, which may lead to increased costs for the export of fresh produce by airfreight.

The Department will introduce new enhanced security procedures for air cargo, with a 100 per cent piece-level examination of all outbound international air cargo to apply from 1 March 2019.

In addition, 100 per cent piece-level screening of domestic air cargo has been proposed to be phased in, with the highest priority being Australia's major airports.

As fresh fruit and vegetables represent 15 per cent (approximately 87,000 tonnes) of all air cargo exports originating from Australia, these changes will affect vegetable exporters.

Grower-exporters will need to make a commercial decision to either be certified as a 'Known Consignor' or utilise their existing Freight Forwarder to undertake the security screening of all shipments.

OPTION 1: BECOMING A KNOWN CONSIGNOR

The key benefit of becoming a Known Consignor is that cargo that originates from a Known Consignor and is securely transported to the Container Terminal Operator/Regulated Air Cargo Agent, is considered to be piece-level examined and will not need to be examined again prior to being uplifted for export. This will reduce the cost and potential delays of each shipment being examined by a Freight Forwarder.

Exporters with robust security processes may be well placed to become Known Consignors. Known Consignors must demonstrate that they have security measures and procedures in place and can secure their export air cargo from where it originates, until it is handed to another regulated business. The Known Consignor Scheme is based on a framework of six pillars:

- Facility security.
- Personnel security.
- Training.
- Screening.
- Chain of custody.
- Oversight and compliance.

The security measures required under the Known Consignor scheme will depend on each individual business and are outcome-focused. The application process for the Known Consignor scheme commences with an online expression of interest. The application process may include recognition of existing measures and procedures within your business.

Security measures include: physical access controls and facility security measures; information security measures; secure packing, handling and storage of air cargo; secure transportation of air cargo; and security awareness training.

It also includes background checking of employees to ensure they are of suitable character, including a requirement for staff in key roles to hold an Aviation Security Identification Card (ASIC). ASICs are not required for all staff, but staff without an ASIC must remain under direct supervision of those that hold an ASIC. Quality control procedures to monitor and manage compliance and incident response and reporting procedures are also required security measures.

It currently takes 60-90 days to assess an application from a business seeking to register as a Known Consignor. There is no application fee to become a Known Consignor; however, there may be costs associated with upgrading your security measures to meet the scheme's requirements.

Further information on the requirements and application process to become a Known Consignor can be accessed at homeaffairs.gov.au/about-us/our-portfolios/transport-security/air-cargo-and-aviation/air-cargo/known-consignor-scheme.

OPTION 2: USE A FREIGHT FORWARDER

All cargo not originating from a Known Consignor will need to be security screened and for most grower-exporters, the logical facility for this to occur is at the Freight Forwarder, in addition to undertaking phytosanitary inspections and preparing export documentation.

Each Freight Forwarder may manage the new security screening requirements differently, with differing screening costs and impact on the timeliness of processing shipments. It is currently unclear exactly how much will be charged for screening, and it is assumed that individual Freight Forwarders will set their own charges for this service.

Exporting growers should speak to their Freight Forwarder to determine how they intend to undertake the piece-level security screening to understand how they will deal with perishable cargo and any time-critical shipments.

INFO R&D

For more information regarding the new security screening requirements, please contact AUSVEG National Manager – Export Development Michael Coote on 03 9882 0277 or at michael.coote@ausveg.com.au.

GROWING DEMAND: RESEARCH BREAKS DOWN THE BUSINESS CASE BEHIND VEG MARKETING

Project investment through the vegetable research and development levy has delivered significant increases in productivity and improved product quality. However, increasing supply is only half of the problem facing our industry – the other half is increasing demand. A levy-funded research project has investigated the business case for funding a marketing campaign to build demand for Australian vegetables. Consumer Alignment Strategic Investment Advisory Panel member Jarrod Strauch reports.

On any given day, you can turn on a TV set in Australia and see ads spruiking the hard work of our agriculture industry.

Sometimes it's indirect, like the major retailers fighting over who has the freshest produce, or food processing brands leveraging our horticulture sector's reputation for high quality and great taste.

Thanks to our national agricultural industry levy system, Australia also has a strong and established culture of direct generic commodity marketing to promote entire sectors.

Some of Australia's most iconic and long-running campaigns have come from industry investment in promotions that provide returns for everyone in that sector, whether it's by telling you to get some pork on your fork or showing that bananas can make your body sing.

There's still one notable gap in Australia's advertising landscape, though: fresh vegetables.

A BIT OF BACKGROUND

Many horticultural crops are strongly represented thanks to the collection of levies for marketing purposes, with well-resourced campaigns that keep particular produce front-of-mind and push for a bigger share of the shopping basket. These include individual commodities that could traditionally be considered vegetables, but which have established their own marketing levies to grow their sector.

It could be argued that by standing still while other sectors push their products through advertising, our industry is falling behind. However, when it comes to promoting fresh vegetable consumption, two of the biggest issues are also two of the most difficult to solve: there's a lot of fresh vegetable commodities, and consumers aren't eating that many in the first place.

Only four per cent of Australians eat their recommended five or more daily serves of vegetables, and the reasons they list as barriers to increasing their consumption may sound familiar: lack of confidence and skill in storing, preparing and serving vegetables; lack of convenience compared to other food options; and intense competition for the food dollar.

There's a wide range of commodities currently paying the vegetable research and development levy. While some can be

comfortably grouped together for production or purchasing purposes, such as baby leaf varieties, teaching consumers about how and why to eat more veggies as a whole is a big job that needs to account for huge diversities in taste, texture, storage and shelf life – among a wealth of other factors.

The upside to the size and value of our $3.4 billion industry is that a well-coordinated, consistent investment program leveraging Australia's levy system could tackle this task.

A recently concluded levy-funded research project commissioned by Hort Innovation and led by McKINNA et al has taken an in-depth look at the business case behind establishing a marketing levy to grow demand for Australian vegetables. *Building the case to grow domestic demand for vegetables in Australia* (VG17013) is a strategic levy investment under the Hort Innovation Vegetable Fund.

This extensive research project took a multi-faceted approach to understanding the challenges in vegetable marketing and finding solutions. Project tasks included a literature review of existing reports on vegetable marketing; economic modelling in collaboration with Deloitte Access Economics and the Centre for International Economics; stakeholder consultation throughout our industry and with topic experts; and the development of a 'shadow' (hypothetical) marketing strategy.

DOWN TO BUSINESS

The top-line finding from the business case is simple, but encouraging: there is a compelling case for industry to consider diverting a proportion of the current research and development component of the vegetable levy into marketing.

Based on the experiences of other generic horticultural marketing programs around the world, McKINNA found that it's reasonable to expect a rigorous strategy with sufficient investment could increase consumption by half a serve per person per day within five years – meaning an increase in Australian vegetable consumption of roughly 20 per cent.

Analysis by McKINNA and advice from behavioural change marketing specialists proposes that the industry should be considering an investment of around $10 million per year for those first five years of the campaign, dropping to $6 million per year as ongoing 'maintenance' funds after the initial activity.

The economic modelling from the project suggests that growers would see $19 returned for every dollar invested by funding a national mass-media campaign – such as the shadow strategy conceptualised by McKINNA in one of the project outputs.

As noted, funds for this campaign would most likely be diverted from current levy collection. Annual levy returns for the vegetable research and development levy sit between $8-9 million, and we know that this investment in research continues to provide valuable returns to our industry.

By looking at existing research investment and consulting with levy-payers about their preferred options, McKINNA came to the assumption that a 50-50 split of the existing levy has the most potential by delivering over $4 million per year for marketing while retaining our valuable research investments.

As a result, the shadow strategy includes working with strategic partners with a shared interest in increasing vegetable consumption to help fund the full suite of measures identified in the strategy, including the development of an 'umbrella' licensed brand for the initiative, an advertising campaign and retailer integration.

Our industry could leverage its initial investment by working with these partners – which could be other industries with marketing levies, supply chain partners, government, businesses or health councils – to achieve shared goals, like helping Australians eat healthier and reducing public health costs, or increasing consumer spend on fresh produce in retail settings.

THE NEXT STEPS

While this business case has found compelling reasons for our industry to invest in marketing, the move to shift millions of dollars from research to marketing is not one to be taken lightly.

Any changes to the composition of the vegetable levy would require changes to Commonwealth legislation, and that would have to go through a rigorous approval process.

This process includes extensive industry consultation and a ballot of all current and potential levy-payers to see if you support the change.

> It could be argued that by standing still while other sectors push their products through advertising, our industry is falling behind.

There can't be any changes made to how the levy is allocated between research and marketing without grower support, and this support should be informed by the best information available – including the outputs from this research project.

In the coming months, AUSVEG will be disseminating the business case behind a marketing levy to help our industry discuss how we can take advantage of this huge opportunity for future success.

INFO R&D

Building the case to grow domestic demand for vegetables in Australia has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Jarrod Strauch was also a member of the reference group for this project.

Project Number: VG17013

Hort Innovation Strategic levy investment | VEGETABLE FUND

An example of redback webbing. Images courtesy of Applied Horticultural Research.

WHAT'S A REDBACK DOING IN MY BROCCOLI?

While hard to measure, it seems some consumers are making the connection between fewer pesticides during vegetable production and the occasional unwanted hitchhiker afterwards. However, there is one creature for which no explanation or justification will be accepted – the redback spider. Dr Jenny Ekman from Applied Horticultural Research reports.

The issue of redback spiders in broccoli first crawled into the headlines in 2016. Since then, there have been numerous complaints and unfortunately, these are often via social media, resulting in negative press that can make its way around Australia and, indeed, the world.

Redback spiders (*Latrodectus hasselti*) have also occasionally been found hiding inside bunches of table grapes. They are very difficult to spot, at least until the grapes are eaten. The spiders are also occasionally found in pumpkin fields, as well as cotton and grains.

Complaints about redbacks in broccoli have come from all states in Australia, so this is a common problem. 'Redback season' extends from January to June, with most finds between April and May. This is not surprising, as populations are maximised at the end of summer.

To investigate this issue, Applied Horticultural Research undertook a project entitled *Managing the risk of redback spiders in broccoli crops* (VG17014), a strategic levy investment under the Hort Innovation Vegetable Fund.

SPIDER PROFILE

Despite their fearsome reputation, redbacks are generally timid. The spiders are nocturnal ground dwellers, and really just want a quiet life protected from wind, rain and extremes of temperature. Sheds, pump-houses, electrical boxes and, of course, outdoor toilets are perfect; broccoli crops are not their natural habitat.

Major outbreaks of redbacks appear to coincide with hot, dry summers – as forecast this year. At 25-30 degrees Celsius, a tiny spiderling can mature into an adult female in only six to eight weeks. Although males mature even faster, they are inconspicuous at only 1/50th the size of their sisters, and have a far less venomous bite.

Having found a sheltered spot, the redback makes a distinctive, rather untidy web. This includes a refuge for day use and sticky trap lines to the ground. Redbacks do not clean their webs so leaves, debris, and insect carcasses may all be stuck on the webbing.

When mature, females produce pheromones on their webs to attract and signal to males. Once she has mated (and consumed her partner while doing so) she typically lays at least four egg sacs but sometimes many more. These are protected by a thick layer of water-repellent silk, making them impervious to water-based insecticides.

Each egg sac produces an average of around 110 spiderlings, so a single one can cause a significant infestation. However, unlike other spiders, there is little evidence that redback spiderlings disperse on the wind. Instead, they walk. As a result, roads, watercourses and open areas all act as natural barriers to dispersal.

Population spread mainly occurs through hitchhiking on equipment, machinery and vehicles. This means that if spiders have entered a crop, they have likely done so with human assistance.

The key prey of redbacks includes beetles, millipedes and other ground dwelling insects. These are not usually regarded as pests,

so may not be controlled in crops. It seems possible that the shift to Integrated Pest Management (IPM) has increased survival of both spiders and their prey.

However, it is not yet clear if redback spiders are actually present in broccoli crops or infest broccoli after harvest. If spiders are present on harvesting bins, it is possible they may climb up into the heads during cold storage. Social media photos of redbacks in broccoli heads appear to support this theory, as no webbing is visible on the heads themselves.

Once inside the broccoli head, redback spiders can easily survive the conditions in the supply chain. They can tolerate temperatures below zero and above 45 degrees Celsius and live for months without food.

MAINTAINING VIGILANCE

The best way to reduce the risk of redbacks contaminating broccoli is by thoroughly cleaning the equipment used to grow and harvest the crop. Detergents are deadly to redback spiders, so washing bins and materials before use provides extra protection. Hygiene is particularly important if broccoli follows a crop such as pumpkins, where redbacks can potentially flourish.

No chemicals are registered for controlling redback spiders on broccoli crops. However, there are a number of products which can be used to kill spiders on equipment and machinery and to disinfest harbourages. These contain active ingredients such as bifenthrin (e.g. Terminate 80 SC), chlorpyrifos (e.g. Chlorban 500 EC) and α-cypermethrin (e.g. Fendona).

INFO R&D

An eight-page guide on managing redbacks in broccoli crops is available at horticulture.com.au. For more information, contact Dr Jenny Ekman on 0407 384 285 or at jenny.ekman@ahr.com.au.

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

Project Number: VG17014

Hort Innovation Strategic levy investment | VEGETABLE FUND

L-R: Deborah, Christine, Jennifer and Monica Camilleri.

Photography by Emily Keogh.

NEXT GENERATION CONTINUES THE CAMILLERI FARMING LEGACY

From growing vegetables on 40 acres to owning four properties totalling 440 acres, Frank and Frances Camilleri have certainly expanded their growing operation over the past 20 years. Meanwhile, the next generation is well-established with the couple's six children developing the same passion for growing fresh produce. Four of Frank's daughters – Deborah, Monica, Jennifer and Christine – spoke to Michelle De'Lisle about why they decided to follow in their parents' footsteps.

It is not unusual for multiple generations of vegetable growers to live on the land to provide Australian consumers with clean, fresh produce.

In decades gone by, it was generally men who inherited the farm while women worked in other industries such as nursing or teaching before giving up their careers to care for their children; living and working on the farm wasn't viewed as an option. However, this has changed today with many grandmothers, mothers, daughters, wives and female employees working across various aspects of horticulture – in both on- and off-farm roles.

Deborah, Monica, Jennifer and Christine Camilleri are a prime example of this generational change.

Under the guidance of their father Frank and mother Frances, these four ladies (all aged under 21) are taking the opportunity to cement their position in the vegetable industry and grow Camilleri Farms to ensure it has a sustainable future. They also work alongside their brother Matthew and sister Samantha.

Located in Bathurst, New South Wales, Camilleri Farms grows sweet corn, iceberg lettuce, cos lettuce, cabbage, cauliflower and pumpkin. Additionally, the family produces potatoes for the fresh market and the crisping and peeling sectors.

The Camilleri family first started farming on a 40-acre property in Wallacia, about 20 kilometres south of Penrith before buying two more blocks of land. In 2013, Frank and Frances sold the properties and moved to a 220-acre farm in Bathurst.

"Since then, we have purchased three more farms and now we have a total of 440 acres all under irrigation," Frank says.

Growing vegetables on this amount of land requires a lot of hard work – and Frank's six children have decided to stay on the farm to not only lend a helping hand, but to learn as much as they can so they can take over the day-to-day running of the business in the future.

INDUSTRY TRAILBLAZERS

Deborah Camilleri is head of irrigation, and also has a number of roles including harvesting, seeding corn, preparing the ground, planting and general maintenance.

"I've always wanted to stay on the farm. I considered the challenges of being on the farm, but it's rewarding and also great working outdoors. If you enjoy being outdoors and growing food, it's a good career path to follow," she says.

Monica Camilleri manages a harvest crew, as well as fertilising and hilling potatoes; maintaining weeds around the farm; loading trucks; and planting lettuce and brassicas.

"There is a wide range of jobs and you never get bored. You also get to see vegetables grown from seed to full maturity," Monica says.

While the ladies support each other on-farm, they admit to a bit of friendly competition and challenging each other in their jobs.

"We race each other to see who will perform the better job. This is to keep us motivated," Jennifer Camilleri says.

Jennifer's role includes harvesting, loading trucks, planting crops and general machinery maintenance. She explains that working together has further advantages for the ladies.

"It is very beneficial because when you need a hand with something, there is always help available."

Christine Camilleri plants brassicas and lettuce while assisting with harvesting, seeding potatoes and loading produce on trucks. Christine is reaping the rewards of working on-farm, particularly alongside her three older sisters, whom she looks up to.

"Working in this industry is considered very physically and mentally demanding, which is a challenge but definitely rewarding. We absolutely love working outdoors," Christine says.

"You will never get bored doing this job. There is always something different to do or something new to try."

Encouraging young people to join the vegetable industry is an ever-present challenge and it is one of the reasons the Camilleri daughters decided to pursue the family trade. They reiterated that there are many attractive aspects to working in the vegetable industry; Deborah says that being hands-on with growing your own food and operating tractors is one highlight, while Jennifer echoed Monica and Christine in saying that there are plenty of jobs to choose from.

A SHIFTING LANDSCAPE

Vegetable growers from across Australia encounter ongoing issues that affect production and business operation, and the Camilleri family isn't immune to these issues.

Marketing produce is a challenge and to combat this, the business tries to receive as many contracts as it can in what can be a competitive environment.

Disease is also a major issue facing growers, and maintaining disease resistance and the ongoing sustainability of the farm is important. Steps taken by the Camilleri family include resting paddocks and rotating crops as often as possible.

There have also been many changes over the past 20 years since Frank and Frances started growing veggies in Wallacia.

"The farm has evolved over time by growing in size. The difference is that it is more competitive and you have to grow more to make the same amount that we were earning when we first started on the farm," Jennifer says.

Deborah points out that the increase in land size has meant that machinery has had to be upgraded to accommodate the increased work load.

"When we first started, we used a two-row planter for one bed at a time. We also harvested the crops by hand, but now we have harvest aids," she says.

They may only be between 16-20 years old, but the Camilleri daughters have high hopes for the future – including establishing their own farm. However, at the moment the focus is on Camilleri Farms and its business direction.

"Hopefully our current farm expands and we grow more crops for processing," Monica says.

Frank's advice for his daughters is to "work smarter, not harder". He also acknowledges the work that all six of his children contribute to the growing operation.

"My proudest achievement is raising six hard-working kids who are interested in the farm, as well as how much the business has grown since we first started."

Top: Jennifer, Matthew, Samantha, Deborah and Monica. Bottom: Frank, Frances and Christine Camilleri.

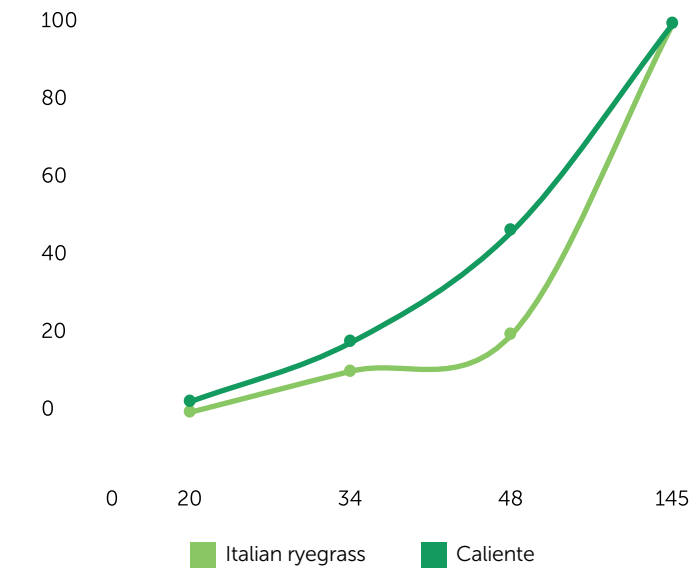
Caliente cover crops at Forthside, Tasmania.

WINTER COVER CROP EFFECTS ON WEEDS: RESULTS FROM TAS AND WA TRIALS

Many growers are now including cover crops in their annual cycle to improve the quality of their soil, and information about soil health benefits will often influence which cover crop type (or mix of types) is selected. But what about their effects on weeds? The project team from the University of New England (UNE) investigates.

Italian ryegrass at Forthside, Tasmania. Images courtesy of M. Coleman.

FIGURE 1: COVER CROP GROUND COVER PERCENTAGES, 20 TO 145 DAYS AFTER SOWING, FORTHSIDE, MAY-OCTOBER 2018



In 2018, a team from the University of New England (UNE) monitored two winter cover crop trial sites to understand the impact of several cover crop types on weed germination and growth.

The two winter cover crop sites included a long-term trial at the Tasmanian Institute of Agriculture (TIA) Vegetable Research Facility near Forthside, and a newly-established trial hosted by Ivankovich Farms near Myalup, Western Australia.

The TIA trial comprises four replicated plots each of Italian ryegrass (*Lolium multiflorum*) and Caliente (*Brassica juncea*) cover crops, as well as four fallow control plots for comparative analysis. These fallow plots received one extra herbicide treatment during the fallow period.

Cover crops were grown for 145 days before incorporation. The Myalup replicated trial includes six cover crop types, grown for 90 days before incorporation: field peas (*Pisum sativum*); cereal rye (*Secale cereale*); Italian ryegrass; Caliente; BQ Mulch (25 per cent *Brassica nigra*, 75 per cent *Brassica abyssinica* or *Brassica carinata*); and a biofumigant mix provided by David Grays (comprising *Brassica juncea* and *Eruca sativa*).

All cover crops were monitored regularly after sowing to measure the growth and canopy cover of each type, and the number and species of weeds present. Immediately prior to incorporation, final cover crop biomass and ground cover data were collected, as well as weed biomass and counts by species.

This research was undertaken as part of the three-year project *A strategic approach to weed management for the Australian vegetable industry* (VG15070), a strategic levy investment under the Hort Innovation Vegetable Fund.

INITIAL RESULTS

A faster-establishing, competitive cover crop can be more effective in suppressing both weed germination (by shading the ground and making it difficult for seed which requires light to germinate) as well as growth (by out-competing weeds that have germinated for resources and space). Figures 1 and 2 show the percentage of ground cover observed in the cover crops across both sites.

As Figure 1 shows, Caliente established more quickly than Italian ryegrass at Forthside, being at approximately 50 per cent ground cover some 50 days after sowing. Italian ryegrass established more slowly, but by the time the cover crops were incorporated (145 days after sowing), ground cover was close to 100 per cent for both.

At Myalup, cereal rye covered the ground considerably faster in the first 14 and 28 days after sowing compared with the other

cover crops, and field peas were relatively slow (see Figure 2). However, by the time of incorporation into the soil (90 days after sowing), all cover crops had similar ground cover.

WEED DENSITY AND BIOMASS

Many common weeds in vegetable production were observed at the two sites including fat hen (*Chenopodium album*), chickweed (*Stellaria media*), milk thistle (*Sonchus oleraceus*) and wild radish (*Raphanus raphanistrum*).

Table 1 shows more weeds were present within Caliente at Forthside than within the Italian ryegrass and fallows, while a higher weed biomass was also found. The very thick canopy of Italian ryegrass at 145 days after sowing means that it may have been more effective at intercepting light at ground-level compared to Caliente at this late stage, where diffused light reached the ground level within the two metre high stalks. To explore the impact of light interception on weeds, this will be measured in year two for both trials.

Caliente also featured uncovered and partially-shaded wheel tracks which did not occur in the Italian ryegrass. In Caliente, this may have allowed weeds such as chickweed, commonly observed at Forthside and capable of growing in moist, partially-shaded conditions, to establish and grow well within the taller stature of this crop.

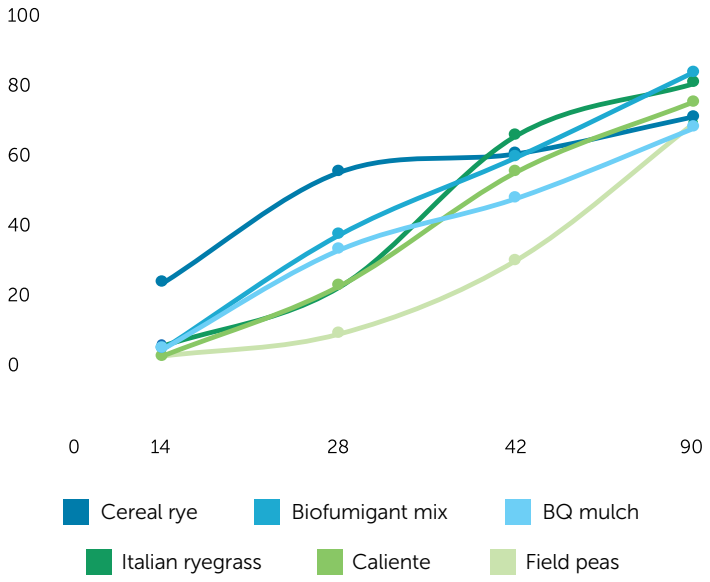
Table 1 also shows that the rapid ground cover establishment of cereal rye in Myalup correlated with a considerably reduced weed burden in the cereal rye plots at the end of the trial, both in terms of the number of weeds per square metre and the weed biomass. This shows that early ground cover establishment is important for cover crops to suppress weeds.

Biofumigant crops such as Caliente can have additional benefits including soilborne disease suppression, and anecdotal evidence suggests that its allelopathic effects (the chemical inhibition of one species by another) may also reduce the weed seed bank and suppress recently-germinated weeds after the crop has been incorporated into the soil. However, like selective herbicides, this effect may only inhibit seeds and seedlings of some weed species and not others. To explore the impact of the cover crop types on the weed seed bank at different depths, soil samples were collected for germination and counting of weed seeds at UNE. Analysis is ongoing, and full results will be published in the project's final report.

Each cover crop species is also likely to establish and perform differently with regard to suppressing weed growth and seed production depending on seasonal variation, local climate, paddock history, time of planting and incorporation, and weed species present.

Both the Forthside and Myalup trials will be replicated identically in 2019. Team members from the Hort Innovation-funded project

FIGURE 2: COVER CROP GROUND COVER PERCENTAGES, 14 TO 90 DAYS AFTER SOWING, MYALUP, APRIL-JULY 2018



Optimising cover cropping for the Australian vegetable industry (VG16068) are evaluating beneficial mycorrhiza and crop yield on these trial sites. Two similar summer cover crop trials are planned for Richmond, New South Wales, and the Lockyer Valley in Queensland (also a Hort Innovation-funded trial site).

The UNE team is very grateful to Hort Innovation for funding this research. In Western Australia, the team was supported by Peter and Anthony Ivankovich (Ivankovich Farms, Myalup); Ian Guthridge and Graham Blincow (Western Australian Department of Primary Industries and Regional Development); Grant Swan, John Cross and Bruce Shaw (David Grays), and Dave Stewart (Elders). In Tasmania, Philip Beveridge and Robert Tegg (TIA) provided generous support of the project and access to the TIA site at Forthside. Doris Blaesing (RM Consulting Group) and John Duff (Queensland Department of Agriculture and Fisheries) provided expert advice on cover crop variety selection.

INFO R&D

For more information, please visit une.edu.au/iwmvegetables, or contact Michael Coleman at mcolema8@une.edu.au or 0437 403 644 or Chris Fyfe at cfyfe3@une.edu.au or 0401 200 045.

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

Project Number: VG15070

Hort Innovation Strategic levy investment | VEGETABLE FUND

TABLE 1: WEED DENSITY AND WEED BIOMASS, MYALUP (WA) AND FORTHSIDE (TAS), 2018

TREATMENT	WEED DENSITY FORTHSIDE plants per m^2	WEED BIOMASS FORTHSIDE grams per m^2	WEED DENSITY MYALUP plants per m^2	WEED BIOMASS MYALUP grams per m^2
FIELD PEAS	-	-	13.5	17.7
CEREAL RYE	-	-	7.8	0.4
ITALIAN RYEGRASS	189.8	55.1	10.5	3.1
CALIENTE	262.3	125.9	15.5	2.7
BQ MULCH	-	-	18.5	2.6
BIOFUMIGANT MIX	-	-	14.5	2.5
FALLOW	22.3	26.1	-	-

OneHarvest Account Manager Tayla Field.

PAVING THE WAY FOR A SUCCESSFUL CAREER IN THE HORTICULTURE FIELD

Tayla Field has been extremely busy since graduating from university, after participating in two leading professional development courses for the horticulture industry, as well as conducting a primary school program and working full-time. In this edition of *Vegetables Australia*, Tayla speaks to Michelle De'Lisle about her journey so far, and what drives her passion for horticulture.

It has been a whirlwind couple of years for OneHarvest Account Manager Tayla Field.

Currently based in Brisbane, Tayla's role at salad producer OneHarvest involves working with major retailers and business managers as well as talking to distribution centres and buyers to make sure they receive correct, on-time deliveries of fresh produce. OneHarvest has four distribution sites around Australia including Brisbane, Sydney, Bairnsdale and Perth, with its own leafy salad growing operation located in Richmond, Tasmania.

After completing her Bachelor of Agricultural Science at the University of Sydney, Tayla relocated to Tasmania to work for OneHarvest and, at the same time, participated in the 2017 *Growing Leaders* professional development program (VG15030), a strategic levy investment under the Hort Innovation Vegetable Fund. And the learning didn't stop there – the following year, Tayla received a scholarship to undertake the *Masterclass in Horticultural Business* (LP15001), a strategic partnership under the Hort Frontiers Leadership Fund. She graduated from the class in December 2018.

BUSINESS PERSPECTIVE

The *Masterclass in Horticultural Business* appealed to Tayla as it filled in the business knowledge gaps to assist in her current sales role. Described as a mini-MBA for the horticulture industry, the 10-month course focuses on several topics, including learning about the global trends in agriculture and horticulture, international business, innovation, value chains, and governance and risk.

Three leading agricultural-focused universities are currently involved in the masterclass, including the Wageningen Research Academy in the Netherlands, New Zealand's Lincoln University and the University of Tasmania.

"I thought the scholarship was a great offering as it's probably not something that I would've been able to fund myself separately," Tayla says.

During the course, three face-to-face sessions with the participants were held over 2-3 days. This provided Tayla with numerous opportunities to network with members from other horticulture industries such as nurseries, cherries and fruit.

"There was a wide range of people in the group who were able to share their experiences, and when we visited other properties that weren't in their industry, they would ask questions you wouldn't often think of. Having that opportunity to listen and learn was really great," Tayla says.

"I've also gained an understanding of the business side of things; how to write a business plan and present it. It's given me key skills on how to understand a change management process, which is something that our business is working on at the moment. I was able to apply what we were learning and the modules to our business."

LEADING THE WAY

Tayla joined the Growing Leaders alumni in 2017, and she describes it as the first step outside her comfort zone.

"It was during the first year of my full-time job and it was pretty challenging. But I think the key thing that links the Masterclass and Growing Leaders is the group of people that you meet and the networks that you develop. Growing Leaders challenges you emotionally, but you find a sense of leadership that you didn't really know you had," Tayla says.

Tayla Field (middle right) pictured with the young farming champions participating in the Art4Agriculture program.

"The Masterclass is more theory-based, but with Growing Leaders I walked away with a fresh perspective and leadership skills.

"I think, leadership-wise, it was a big step up for me to do that. I got a lot out of the networks that I developed, and the feeling that you've really achieved something and you're going to do good for your industry."

Along with the skills that she developed while undertaking Growing Leaders, completing the program boosted Tayla's confidence to continue on her horticultural learning path.

"I think if I didn't do the Growing Leaders program, I wouldn't have been ready to take on the Masterclass. After Growing Leaders, I was looking for the next step – and that fell into it."

COMMUNITY ENGAGEMENT

Tayla's passion for vegetables is evident, and she is spreading the word about the industry through the Art4Agriculture program.

Art4Agriculture connects primary schools with a young farming champion from all sectors of the industry including poultry, beef, wool, horticulture, cotton and grains. The young farming champions attend workshops and learn how to develop their story, which focuses on their involvement in the agriculture industry, and key focus areas relating to the sector that they represent. Students get presented with the "Archiebull" Prize, a life-sized fibreglass bull delivered to their school which they then decorate in their theme.

"The best part is being able to go to schools and tell your story to primary school kids. Seeing the level of engagement from them is really something special," Tayla says.

"We were also able to give one of the schools the opportunity to tour OneHarvest's Sydney factory, which was great."

PATH REDIRECTION

Tayla's path into the horticulture industry appears to be well-paved; however, it wasn't always that way – she completed the Produce Marketing Association (PMA) Career Pathways Program in her final year of university, which opened Tayla's mind to the industry.

"When I graduated, I thought I was going to go straight into a role in cotton. I think the pathways program and the horticulture subject in our last year at uni really shaped what I see as a horticulture industry," she says.

While moving to Tasmania wasn't easy, Tayla's enthusiasm for fresh produce grew (pardon the pun).

"It's a bit of a tough slog down there. But I look back now in my sales role, and I'm well-equipped to understand how the farm operates and the procedures; and how difficult and challenging farming can be, especially with the weather in Tassie," Tayla explained.

"I love the horticulture industry – I love how fast-paced it is; every day is different and I don't think that you get that in other industries. The crops roll over very quickly; they're very weather-affected. It's also great to meet a network of people who are very supportive in the horticulture industry, so that keeps driving my interest.

> (Through the Masterclass) I was able to apply what we were learning and the modules to our business.

"But I love fresh produce – I think it's a great industry to work in, so I really enjoy it from that point of view and I can't see myself leaving any time soon. It's got something special about it compared to other industries."

INFO R&D

More information about the Masterclass in Horticultural Business can be found at hortfrontiers.com.au/leadership-fund.

Masterclass in Horticultural Business is funded by the Hort Frontiers Leadership Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with co-investment from the University of Tasmania and contributions from the Australian Government.

Project Number: LP15001

E.E. Muir & Sons Regional Manager Danny Thornton (second from left) accepts the award from Corteva's Nick Weckert, Bill Bellzer and Krysta Harden.

E.E. MUIR & SONS HONOURED FOR ENVIRONMENTAL STEWARDSHIP

An ongoing commitment to the land and securing the sustainability of Australian agriculture has led E.E. Muir & Sons to be named the Asia Pacific Regional Winner of the 2018 Corteva Environmental Respect Awards. *Vegetables Australia* speaks to Managing Director Ian Muir about the prestigious accolade and what it means for the business.

After more than 92 years of operation and four generations of family leadership, E.E. Muir & Sons knows better than most the significance of sustainability – not only from a business perspective, but also in terms of protecting the surrounding environment. This is particularly important given the company's role as a major distributor of fertilisers, crop protection products, seed and other farm supplies to the Australian agriculture industry.

Established by Edward Eric Muir in Melbourne's Victoria Market in 1927, E.E. Muir & Sons is a family-owned company that has since expanded its footprint from a humble market stall to 42 retail branches located in the key, predominately irrigated, growing regions of Australia.

"We service high value cropping enterprises and our model is to offer service in the field and add value to our customers," E.E. Muir & Sons Managing Director Ian Muir said.

The importance of environmental stewardship is instilled throughout the company's 300-strong workforce. This commitment came to light recently when E.E. Muir & Sons Regional Manager Danny Thornton, in conjunction with Nick Weckert from Corteva, nominated the business for the 2018 Corteva Environmental Respect Awards, the global agriculture industry's premier stewardship program, which recognises outstanding work in preserving the environment through safe, responsible business practices.

Now in its 28th year and previously run under the banner of DuPont before its merge with Dow Agroscience, the Environmental Respect Awards honour fertiliser/agricultural chemical retailers and seed agents across the globe who are operating their businesses in an environmentally sound manner to benefit their customers, employees and the community.

"We were surprised and delighted when we were notified that we won not only the Australian award but the Asia Pacific Regional Winner award. It was quite the feather in our cap for something we did, not for recognition but for the betterment of the industry," Ian said.

"I would like to congratulate Corteva for encouraging agricultural retailers across the world, like ourselves, in aspiring to meet the criteria for consideration of this award."

A FOCUS ON SUSTAINABLE FARMING

E.E. Muir & Sons' involvement in the awards and subsequent success was based around industry workshops held across Australia with Matt Strmiska, a private consultant and specialist in spray application techniques from the United States. Matt held a range of spray application workshops and demonstrations in both the Sunraysia and Bundaberg regions of Australia, with support from Corteva, to help growers become more efficient and environmentally aware of the products they were using.

The workshops assisted growers in areas including on-target application of crop protection products to prevent overuse, waste, run-off and off-target damage. It also highlighted the efficient application of products to limit fuel and machinery use, leading to less soil compaction, and also providing resistance management with the overall objective of using minimal chemicals in the environment.

"Matt took the workshops well beyond what was a simple spray application message," Ian explained.

"We have an attitude for sustainable agriculture, which doesn't mean a non-chemical attitude; but the wise use of chemicals in agriculture, and part of that is effective, minimal use, and using alternative products where applicable. Many softer products need

ENVIRONMENTAL RESPECT IN ACTION

E.E. Muir & Sons was named the Asia Pacific Regional Winners of the 2018 Corteva Environmental Respect Awards, which recognises outstanding work in preserving the environment through safe, responsible business practices. This includes:

- Organising private consultant Matt Strmiska from the United States to hold spray application workshops to help growers become more efficient and environmentally aware of the products they were using.
- Working with the fertiliser industry to minimise run-off into the Great Barrier Reef.
- Offering consultancy field monitoring to minimise the need for spray applications.
- Developing new adjuvants to more effectively carry the chemical and penetrate the target plant, which can ultimately reduce the amount of chemical needed in the environment.
- Implementing and assessing environmental impact projects, including robotics or data management, to increase industry sustainability.

extra stewardship, and bringing someone like Matt into the country helps with that stewardship."

While the workshops were the key driver for the award nomination, E.E. Muir & Sons' promotion of sustainable farming practices and environmental protection extends well beyond this. For instance, the company is also involved in the fertiliser industry's attention to the Great Barrier Reef and minimising run-off through the use of alternative products.

"We also offer consultancy field monitoring to minimise the need to spray unnecessarily and we're developing some new adjuvants which carry the chemical and penetrate the plant more effectively to reduce the amount of chemical needed in the environment. We've developed our own product development team to verify these products and programs," Ian explained.

"More recently Will Gordon (formerly from Hort Innovation) joined us as our Business Development Manager and he is overseeing the implementation and assessment of a number of other environmental impact projects – be it robotics or data management – to help our customers. Again, this is a commitment to make our industry more sustainable. Our team is very proud to represent a company that has an environmentally sustainable attitude."

SPREADING THE MESSAGE

Ian, who joined E.E. Muir & Sons in 1975, has seen the business gradually develop a stronger focus on environmental stewardship over the decades, having progressed from selling agricultural chemicals in large volumes in the 1970s to helping introduce mating disruption technology to sustainably manage codling moth in Australian orchards in the 1990s.

"Our attitude, from the 1990s particularly, is if there has been a safer option that we could develop, we've certainly put resources into it. We really support the newer products because in most cases they are more specific, with minute quantities of active ingredient going on per hectare versus the old days of quite a large chemical impact per hectare," he said.

Ian noted that this shift towards a heightened sense of environmental sustainability runs parallel to increasing retailer and consumer demands for Australian producers to be more environmentally conscious in their farming practices.

"It's a huge direction that we have to adopt. And it's about time that we not only caught up but led the world in some of these areas."

Part of achieving this feat, he added, is for growers and the wider industry to proactively share their stories – and it's something that E.E. Muir & Sons will focus on well into the future.

"As an industry, we probably haven't spoken well enough of the positive impact we're trying to make, at times to our own detriment. As an industry it is time to start talking about the positives, and the Corteva award has been a catalyst to push us forward and make those stories more commonly known.

"It's not the only story around by any means, but maybe others in our industry need to start talking about their good practices as well, and if we can encourage others to do that and also strive to get an award themselves, that's going to be good for our industry."

INFO

For more information, please visit environmentalrespect.com or eem.com.au.

Remote monitoring insect trap installed at the Koo Wee Rup demonstration site in Victoria.

IPM AND PRECISION TECHNOLOGY: UPDATES AND DESIGNING YOUR OWN TRIAL

The Soil Wealth and Integrated Crop Protection (ICP) projects work with growers nationally to put soil management and plant health research into practice. This edition, Carl Larsen provides an overview of two new demonstration sites, as well as resources on labile carbon, farm trial design, and Integrated Pest Management. *Soil Wealth ICP Phase 2* (VG16078) is a strategic levy investment under the Hort Innovation Vegetable Fund.

NEW IPM AND COVER CROP SITE IN DARWIN, NT

Located about 60 kilometres out of Darwin, the Soil Wealth and ICP team's Coastal Plains site is in the heart of the Top End's horticulture district. With support from a number of project partners, we'll be exploring some key issues including Integrated Pest Management (IPM) in vegetables and the value of cover crops over the wet season.

The Coastal Plains Research Farm is investigating the use of IPM in vegetable production in a trial comparing IPM to conventional insecticides in a range of vegetables, with the assistance of Chris Pham and Kevin Huong. Major pests include mites, aphids, bean fly, green vegetable bug and cluster caterpillar.

Both the research station and Chris will look at different cover crop species over Darwin's wet season to protect the soils from heavy rainfall over the summer. These crops will also act as a green manure that will boost soil carbon and provide nutrients for the coming year's cash crop.

You can find out more about the demonstration site on the project website.

NEW PRECISION AGRICULTURE SITE AT KOO WEE RUP, VIC

Adam Schreurs from Schreurs & Sons and the Soil Wealth and ICP team are exploring the application of precision agriculture in celery, leek and baby leaf production systems.

We're aiming to improve nutrition management, irrigation and drainage management and insect pest and beneficial monitoring as a basis for soil and crop health. To achieve this, we're using technology like EM38 mapping, gridded soil sampling, remote monitoring insect pest and beneficial identification traps with cameras, as well as drones.

The team recently installed a remote monitoring insect trap and is about to use a variable rate spreader before sowing the next celery crop at the trial site.

Thanks to our project partners: Stuart Grigg Ag-Hort Consulting, Brown's Fertilisers, Precision Agriculture, Metos – Australia & NZ and OneHarvest.

You can find out more about the demonstration site on the project website.

NEW FACT SHEETS: LABILE CARBON AND FARM TRIAL DESIGN

Labile carbon is the carbon most readily available as a carbon and energy source to microorganisms.

The project team has written a useful fact sheet about labile carbon and its use as a 'leading indicator' of soil health, as well as undertaking your own labile carbon field test to see for yourself.

In addition, trialling different management practices, technologies or varieties on-farm is a great way to 'road test' the change before implementing it at a larger scale.

A fact sheet has been developed to provide practical guidance on planning, choosing sites and data collection for designing your on-farm trial. There's also a handy trial protocol checklist provided to make sure you're covering the right information.

WATCH THE IPM WEBINAR

Missed the recent session on IPM? Not to worry, you can watch the recording when it suits you.

The informative and interactive one-hour webinar provides the latest updates from vegetable industry experts, including IPM Technologies, E.E. Muir & Sons and Schreurs & Sons. Learn about the influence of pesticides on beneficial insects, the recent IPM agronomist training in South Australia, as well as the journey of implementing IPM from a grower perspective.

The session was facilitated by Carl Larsen from RM Consulting Group and delivered in collaboration with the National Vegetable Extension Network (VegNET).

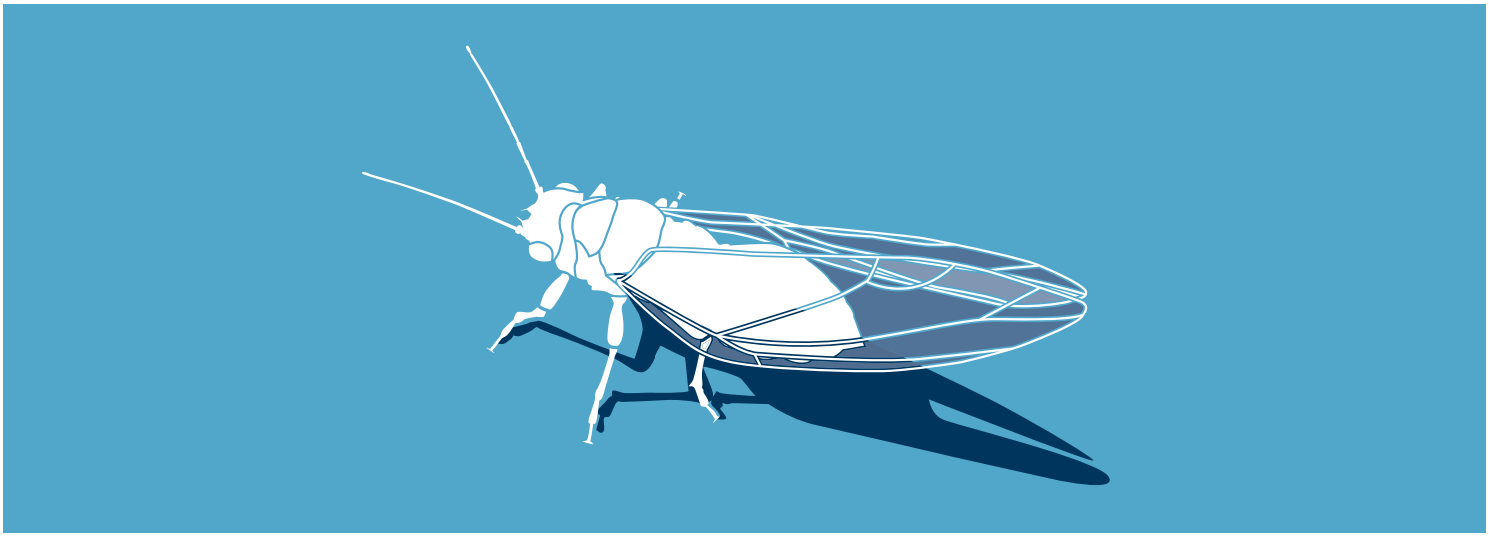
INFO R&D

You can access all the resources in this article, as well as 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@rmcg.com.au.

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

Project Number: VG16078

Hort Innovation Strategic levy investment | VEGETABLE FUND



TPP FORECAST: WHAT'S NEXT ON THE PSYLLID AGENDA

In this edition, National Tomato Potato Psyllid (TPP) Coordinator Alan Nankivell reflects on the TPP control measures that took place in 2018 while looking ahead to activities for 2019 – and what Australia needs to do to ensure it remains free of the bacterium *Candidatus* Liberibacter solanacearum (CLso).

The new year begins with the knowledge that Western Australia now has market access for potato tubers to all jurisdictions, with South Australia granting access just before Christmas. Potatoes were one of the last horticultural products to gain market access.

So why has access for potatoes taken so long? The reason is that potato tubers can be a pathway for *Candidatus* Liberibacter solanacearum (CLso), the bacterium that causes zebra chip in potatoes.

Industry and government stakeholders had to be assured that CLso was not present in the Western Australian tomato-potato psyllid (TPP) population. Last summer/autumn, the Western Australian Government (in collaboration with industry stakeholders) undertook trapping and testing of thousands of TPP and found no CLso present in the trapped population. Area freedom from CLso was accepted by the National Management Group in July 2018.

Having TPP but not CLso is unique. Internationally, TPP and CLso have been found together as TPP is the vector of CLso. Therefore, the importance of ongoing surveillance cannot be underestimated or understated. It is essential and to this end, Western Australia commenced a second round of trapping for TPP in October 2018. The results from the first trapping are in and reassuringly no CLso was found.

With the introduction of the Eastern Bloc (which was reported in the December 2018/January 2019 edition of *Potatoes Australia*), all jurisdictions will be undertaking ongoing monitoring for TPP. It is important to know where TPP is and where it isn't. Data gathered will assist in on-farm management and measures to minimise the spread of TPP while maintaining business supply chains.

COLLATING SURVEILLANCE DATA

Because Australia is such a large geographical area, the risk of TPP arriving into another part of Australia directly from overseas has been and remains a risk – especially through illegal or ignorant behaviour which puts the whole industry at risk.

Australia also has to continue to internationally demonstrate its area freedom status with evidence. To this end, industry stakeholders, state jurisdictions and the Federal Government all need the surveillance evidence about the presence or absence of TPP and CLso. A collaborative approach to gather and use the data is the most effective and efficient approach to address the various needs. There will be further advice in the next issue of *Potatoes Australia* and *Vegetables Australia* about the surveillance activities each of the jurisdictions are undertaking this summer/autumn.

Industry can be reassured that post-entry measures for the detection of CLso in potato tubers has been in place for all potato tissue cultures imported into Australia since 2009, therefore the risk of the bacterium being present in existing potato crops is very low. They will be continuing to test for CLso for the foreseeable future.

With TPP established in Australia, our preparedness for CLso is now heightened. To this end, as part of the ongoing national management plan, there will be a specific preparedness plan for CLso established. During 2019, there will be several workshops and grower meetings to gather advice to frame the plan.

INFO R&D

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

Illustration supplied by DPIRD.

Hort Innovation


Western Australian potato grower Darryl Smith.

REFLECTING ON THE TOMATO-POTATO PSYLLID INCURSION IN WA

Darryl Smith was the first potato grower to discover tomato-potato psyllid on his property in Western Australia in February 2017. At the Tasmanian Institute of Agriculture's Forthside Open Day, Darryl spoke openly about his experiences in the aftermath of the discovery. *Vegetables Australia* reports.

In February 2017, one of the Australian potato industry's worst fears was confirmed: tomato-potato psyllid (TPP), the destructive pest that had devastated New Zealand, was discovered in a Perth backyard.

Soon after it was found in the metropolitan region, testing began on farms in potato growing regions across Western Australia, including the Busselton region which is located 250 kilometres south of Perth. It was Blue Moon Potatoes Director Darryl Smith who received the dubious honour of being the first potato grower to detect TPP on his Jindong property.

PSYLLID DISCOVERY

Darryl opened his presentation at the Tasmanian Institute of Agriculture's Forthside Open Day in October 2018 with an explanation of how the psyllid was found on his farm. The Western Australian Department of Primary Industries and Regional Development (DPIRD) had placed yellow sticky traps on a range of farms (concentrating on seed potato crops, including Darryl's) from Busselton and further south to Albany and Manjimup.

> If you're going to let something on your farm, make sure you know where it has come from and you know that it's safe.

Three weeks later, TPP was detected on his property and DPIRD notified Darryl of the news.

"I knew I was in a bit of trouble because the Department staff parked the car out the front; they didn't even come onto the farm. It was pretty stressful – we'd delivered potatoes to the market the day before, and we had potatoes ready to deliver the next week. As soon as they rolled into our place on that Friday afternoon, they said 'no you can't deliver them'.

"They also said anything that's on this farm, you can't take off. On top of that, over the next three days I had an intense spraying program that involved spraying the boundary and spraying the crop. Ten days after that, after further technical investigation they decided I needed to do more spraying, because at that stage, they were still hoping to eradicate the pest from Western Australia."

POSITIVE OUTCOME

Darryl's farm was placed under quarantine, which meant he was unable to deliver potatoes for a month. He also couldn't transport seed that was stored on the quarantined farm to plant on other properties that were not affected by TPP. Although he lost around 180 tonnes of produce, upon reflection, Darryl is upbeat about the impact of the situation.

"It was a pretty rough couple of weeks. But because Western Australia had signed up to the Emergency Plant Pest Response Deed, we got reimbursed for the total cost of that spraying which was about $6,000, and they reimbursed me for the potatoes I couldn't sell," Darryl said.

TPP can vector *Candidatus* Liberibacter solanacearum (CLso), a bacterium that causes zebra chip in potatoes. Darryl continued to conduct testing for TPP while DIPRD conducted the testing for CLso throughout the spring of 2017 through to the end of autumn 2018 and, at the time of writing, the bacterium has not been detected in Western Australia. The results of sticky trapping also produced an encouraging result.

"Because of the extensive spraying program that was forced upon us, we probably have reduced the burden in the area so it may have been well and truly worthwhile, as it turns out," Darryl explained.

Following the TPP incursion, Darryl has a strong biosecurity message for all growers. He told the audience that, after a couple of scares where his sheep contracted virulent foot rot, he has changed his on-farm biosecurity practices.

"On your own farm, the person who is responsible for looking after your own biosecurity is yourself," he said.

"If you're going to let something on your farm, make sure you know where it has come from and you know that it's safe. I've been farming for 30 years and 18 months ago, I got big biosecurity signs made up on the farm. They're on the gates and say 'if you want to come on this place, give me a ring. But don't go through the gate until you do'.

"It was a hard, expensive lesson to learn – I think you've got an enhanced awareness of the cost when things go wrong."

INFO R&D

For more information, please contact Darryl Smith at darryl@bluemoonpotatoes.com.

GROWER LESSONS LEARNT FROM AN EXOTIC PLANT PEST INCURSION

Recently, industry members heard from a Western Australian potato grower about his experiences following the detection of tomato-potato psyllid on his property. AUSVEG Biosecurity Adviser Dr Kevin Clayton-Greene was in the audience and in this edition, he uses this example to reinforce the necessity of early reporting of suspect pests and robust on-farm biosecurity practices.

While it is always a bit uplifting in temperate Australia as we enter into summer, it is also the time when biosecurity assumes a greater importance. Warmer temperatures and emerging crops awaken pests and diseases and provide opportunities for any unwelcome arrivals.

In a recent 'Biosecurity brief' in *Potatoes Australia*, I mentioned the importance of on-farm biosecurity and the role it can play in helping to minimise new pests establishing in Australia. On the previous page, we hear first-hand from Western Australian potato grower Darryl Smith about the impact upon him and his business following the discovery of tomato-potato psyllid (TPP) on his farm.

Darryl's personal tale is a salutary reminder of the importance of on-farm biosecurity and how we should all be ever-vigilant. I would urge everyone to read the summary of his presentation to industry at a recent event in Tasmania organised by RM Consulting Group and the Tasmanian Institute of Agriculture.

Darryl makes several key points and, despite the inconvenience and disruption to his business, his message was positive.

He was reimbursed for his lost crop and the control measures they now have in place have meant that the population levels of TPP on his farm, and those of others affected, are now a lot lower than when TPP was first discovered. The biggest change since the outbreak is how Darryl now manages his property and the restrictions around personnel access and also entry of material to his farm.

EARLY REPORTING CRUCIAL

No-one wants to be at the centre of an outbreak and get caught up in an incursion, and it is often said by some that even if they found something they wouldn't report it. The lesson from TPP is that this will result in greater pain in the long-term; unless all one's produce is consumed on-farm, someone will eventually find it.

Many of our incursions have been first discovered in home gardens or outside the farm. Once this occurs, emergency measures will be instituted anyway – whether we like it or not.

Crucially, if the pest is already present in large numbers and beyond eradication, then there will be no response plan. Without an eradication attempt, Owner Reimbursement Costs cannot be paid nor can a Transition to Management Plan be cost-shared. The result in this scenario is that growers will be significantly worse off than had the original finder 'fessed up' as soon as the pest was discovered.

It is acknowledged that the current Emergency Plant Pest Response Deed system is not perfect; however, it is a lot better than no system. As noted in previous 'Biosecurity briefs', we can look back upon numerous successful eradications which have saved industry from millions of dollars of potential extra costs or loss of market access.

THE BOTTOM LINE

TPP has provided many valuable lessons for future incursions and also has shown that surveillance is vital. No-one predicted that TPP would first appear in Australia in Western Australia and no-one was looking for it. A more recent example is the discovery of potato mop-top virus in New Zealand. Early reporting may prevent this 'nasty' from spreading throughout the country (it is carried on soil and seed), however if it had gone unreported it would have spread throughout the country on seed from the South Island and been impossible to control.

The take-home message is that on-farm biosecurity is important and while an incursion creates a lot of disruption, it is not the end of the world and can be managed.

The Farm Biosecurity website is easy to find and navigate with many of the tools needed to implement an on-farm biosecurity plan, including templates, checklists and manuals. As we have said many times before, we cannot expect to take biosecurity seriously if we, as producers, do not. Visit farmbiosecurity.com.au for further details.

INFO R&D

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

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

Project Number: VG15023

FarmReady Hub founder Janne Dipple is renovating a former schoolhouse on her property, which will act as a meeting point for on-farm training and education.

FROM CITY TO FARM: JANNE DIPPLE BRINGS A NEW PERSPECTIVE TO HORTICULTURE

Born and bred in the city and hailing from a corporate background, Janne Dipple did not follow a traditional route into the farming industry. However, sometimes a person with a different background, perspective and experience is all that an industry needs to innovate and improve, as Dimi Kyriakou reports.

You wouldn't expect to cross paths with a farmer in a ballroom dancing studio, but that's exactly where Janne Dipple met her now-husband Brendan – and so she began her transition from corporate Sydney to the world of production horticulture in Queensland's Lockyer Valley.

Brendan, who holds a silver medal in the sport, is a fourth-generation farmer and Operations Director of Bare Essentials, which produces leafy green vegetables and herbs in Morton Vale, near Gatton in south-east Queensland.

Janne's chance meeting with this farmer wasn't her first brush with the agriculture industry either. Despite growing up in Sydney, Janne spent much of her childhood with her extended family in central New South Wales on their wheat, sheep and dairy farms.

"I always had that 'two world' thing going on and I really enjoyed agriculture," Janne recalls.

"My interpretation of what farming was, and what I was about to marry into, was a lot different to what it actually is because I didn't understand the difference between broadacre farming and production horticulture, which is much more intensive. I just had to put my skates on and get on with it."

And put her skates on, she did.

Janne was thrown head-first into the small farming business, where she did her best to help out on an operational level. She soon learnt that you can take the girl out of the city, but it's much harder to take the city out of the girl – and so Janne turned her mind to the ways in which she could make the most of her corporate background and experience in training and employment, and apply it to the farm and the wider industry.

SKILLS TRANSITION

Once she had implemented quality assurance procedures, OH&S and employment plans into Bare Essentials, Janne took on the role of Business Manager at Story Fresh, where she learnt about the challenges of a large farming business in production horticulture.

Eventually the extensive travel to the office took its toll and Janne started work at the University of Queensland's Gatton campus as a trainer for agricultural business units. She worked her way up the ranks and built upon her skillset until she eventually became the Operations Manager at the campus.

During her time at the university, Janne came across the Lockyer Valley Alliance's FarmReady Card. The University of Queensland administered this industry-level program, which involved an induction where participants received a card and a skills passport to prepare them to work in agriculture.

When funding for the program dried up in 2005, Janne recognised a new opportunity.

"In my early twenties, I worked in shearing sheds, around livestock and cropping in a very arid farming environment. Listening to family farming issues and hardships, I developed an interest in the day-to-day challenges of a farm. I then dealt with issues on my own vegetable farm and increasing legislation requirements – it's always been hard to find staff with the right skills and personal attributes.

"Then I worked in vocational education and started to understand how our training options are developed and delivered and those constraints. Following my job in education, I also worked in a government role investigating the needs of agricultural employment and training. By the time I finished this job, I was convinced of what I thought was needed.

"Agriculture is so diverse; no two farms are the same and therefore training needs and staffing needs vary between commodities, and individual farms. This is further exacerbated by many workers moving into regional areas to experience farming for the first time and being employed in bulk during

peak season where farmers just don't have the time to manage it all. We have pressing legislation requirements and can only diversify and flex so far.

"I felt the need to do something because I could see there was no interconnection between all the silos on the pathway to employment and training in agriculture.

"I met with the Lockyer Valley Alliance and suggested that we reinvigorate the FarmReady Card and blow the dust off it to sophisticate it into today's needs. We couldn't get the funding, so I bought the IP for it and created a private company."

A NEW ERA

In March 2017, Janne launched FarmReady Hub, which issues the FarmReady Card. This service earned her a position as a Queensland finalist in the 2018 AgriFutures Australia Rural Women's Award and a finalist in the Hort Connections 2018 Women in Horticulture award.

The hub is designed to provide everything that a potential worker needs to have and know prior to arriving on-farm. It is industry preparation training, and an information gathering tool supported by a two-year membership.

"When a job seeker arrives for their first day of work, they have their employment paperwork ready, are dressed appropriately, have an idea of what the work looks like, are connected to quality accommodation and understand living in country Australia. The job seeker also receives training on industry basics – underpinning the employer's on-farm induction and training responsibilities. I've tried hard to ensure that employers and farmers receive the knock-on benefits of streamlined employment and induction processes for free," Janne explains.

"After a job seeker completes the training modules and receives a score of 100 per cent, they are issued with an electronic FarmReady Card as proof of their membership. This card can be shown to other industry providers to receive discounts or to employers to prove their successful completion of the training."

While the website farmreadyhub.com has been offline recently due to a redesign of the original prototype, it is due to reopen for business in early 2019. Starting in the Lockyer Valley, Janne says the service can be easily applied to any region in Australia, across all agricultural sectors.

"FarmReady's ethos is to find solutions through a community approach and provide a platform that benefits everyone, from the job seeker to industry providers as well as educators and employers. It isn't about replacing services that are already out there; it's a linking service – a hub. If there are any employers or industry providers keen to connect, just get in touch via email from the website," she explains.

"The FarmReady Hub website is marketed towards backpackers as they make up the majority of transient workers, however it is suitable for anyone, whether they are Australians, migrants, students or seasonal workers."

GOING BACK TO SCHOOL

While FarmReady Hub is accessible online and through a mobile app, Janne realised she was missing one more essential element: face-to-face engagement, ideally within a workplace, which is often lacking in current agricultural training.

So, when the opportunity came up to purchase the former Plainland Schoolhouse, which dates back to 1886 and housed the local Country Women's Association since 1968, Janne quickly embarked on a two-year mission to purchase the building and transport it onto the farm.

"Now I can use that old schoolhouse to run training and education on-farm and bring all my worlds together – training, education, employment and farming," she says.

The new ideas haven't stopped there. Janne has plans to build a commercial kitchen within the schoolhouse for training and other projects, as well as an agritourism component to promote the local region and its produce. She is also keen to conserve and revegetate the surrounding area of the farm that was damaged in the 2011 floods so it can provide a safe haven for rare and endangered species, as well as welcoming surroundings for visitors.

There seems to be no shortage of new ideas for this innovative woman in horticulture, and she has realised first-hand the unlimited potential of working in the industry.

"I like the diversity – there is something in horticulture and agriculture for everybody. I think that women in the industry also bring a different perspective," she says.

"In any modern business, no matter what it is, you have to cover a lot of skillsets. I think that's where having men and women in horticultural enterprises really works well because you're more likely to cover more of those skills and bring in new ideas."

Clearly, this city-girl-turned-horticultural-entrepreneur is living proof of that very fact.

Photography by Anna Osetroff.

URGENCY FOR RENEWED FOCUS ON FAIR WORK COMPLIANCE HIGHLIGHTED BY REPORT

There have been many developments in the workplace relations space for the horticulture industry in recent months, including the release of the *Harvest Trail* Inquiry from the Fair Work Ombudsman. Growcom's Fair Farms Initiative team reports on the key findings from this report and provides an update on piece rates and changes to the Horticulture Award.

Over the past five years, the Fair Work Ombudsman has coordinated a major inquiry into employment practices and workplace arrangements along the 'harvest trail' of horticulture and viticulture businesses across Australia. The inquiry was in response to concerns among farm workers and the community that many employers in farm business were not complying fully with workplace laws.

The *Harvest Trail Inquiry* report was released in November 2018. Key findings from the report noted:

- The extent of non-compliance with workplace relations law by employers in Australia's horticulture sector.
- The poor practices and outcomes that workers often experience when labour hire arrangements are used.
- The high level of vulnerability to exploitation or underpayment experienced by overseas workers, particularly those with limited English language skills and poor understanding of their entitlement in Australian workplaces.
- The widespread misuse of piecework arrangements.

It is clear from this report that horticulture growers must renew their efforts to understand their obligations and ensure their employment practices, procedures and record keeping meet legal compliance standards.

Australia's major supermarkets have now adopted responsible sourcing policies and fresh produce suppliers will need to demonstrate their commitment to fair employment.

The Fair Farms Training and Certification Program will be launched in the first half of 2019, providing growers with a program that is benchmarked against Australian workplace relations laws and addresses retailers' requirements. Growers can register an expression of interest to participate in the program at growcom.com.au/fairfarmsinitiative/#!form/FairFarms.

GETTING PIECE RATES RIGHT

Piecework provisions are established in the Horticulture Award and while it provides the formula for working out how much should be paid per unit, the variables within and across any given workforce can make this complicated. Nonetheless, growers must set the piece rate to ensure that the "average competent employee" can earn 15 per cent above the minimum hourly rate. If they are casual employees, they also receive the casual loading of 25 per cent.

Some general tips for setting the rate are:

- Make sure all employees engaged on piece rates have a written and signed piecework agreement.
- Check that the significant majority of your competent workers are achieving the set rate as per the formula and adjust where necessary. Skilled workers will earn higher rates, but they will get the harvest in faster.
- Provide workers with adequate training so that they have a reasonable chance of achieving full competency.
- Take into account weather conditions and volume of available produce to pick. If conditions are poor, the piece rate must be set higher to reflect that the rate of harvest will be slower.

Seek advice from your industry association's workplace relations advisory team if further assistance is needed to set a piece rate correctly.

HORTICULTURE AWARD CHANGES

A number of changes have been made to the Horticulture Award this year, including:

- Introduction of a new form of leave to deal with Family and Domestic Violence: All employees, including casuals, are entitled to five days of unpaid leave. The leave is available in full at the start of each 12-month period of the employee's employment. The leave does not accumulate from year to year.
- A person engaged as a regular casual employee may now request that their employment be converted to a full-time or part-time position. This applies if the casual employee has in the preceding 12 months worked a pattern of hours on an ongoing basis which, without significant adjustment, they could continue to perform as a full-time or part-time employee.
- Flexible working arrangements: An employee may request a change in working arrangements because of their circumstances. An employer may only refuse a request on 'reasonable business grounds'. Check the award for notification requirements.
- Minimum engagement period: Casual employees are now guaranteed a minimum engagement period of two hours.

Further details on these changes can be found at awardviewer.fwo.gov.au/award/show/MA000028.

INFO R&D

More 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.

NEW RESOURCES AVAILABLE IN VEG TRAINING INITIATIVE

As VegPRO enters the final six months of phase one and many growers are also entering their busiest time of the year, the project will be focusing on exciting new online training resources as well as developing a career pathway for the vegetable industry. Project Coordinator Sophie Lapsley provides an update.

The long-awaited Veg Inductions course will be released early in 2019. This package has taken longer than intended but, sometimes in life, good things take time.

This online induction resource is made up of 10 individual modules covering topics such as manual handling, chemical safety, emergency prevention and biosecurity. The modules can be taken individually or as a complete course. Although the complete course is 75 minutes in length, it is designed for learners to go through it at their own pace.

The course can be taken prior to commencing a new job or as a refresher for those already in the workforce. Progress is saved along the way, so learners can fit this in with their other commitments. The online induction will offer staff a general base to working in the vegetable sector; what to expect; what the hazards are; and the industry expectations. It's a great base for staff to have when commencing a role in the vegetable industry.

VegPRO will also be developing fresh produce online training as an introduction course to those involved in the harvesting and packing of vegetables. The course will cover all aspects of handling the product, from safety issues to post-harvest concerns.

It has been designed to be taken at the learner's own pace and will be delivered in an engaging video format. The launch date for the course will be in April 2019.

FURTHER TRAINING OPPORTUNITIES

VegPRO's 'train the trainer – tips and tricks for training those in the vegetable sector' will also include a facilitation module this year. Facilitation is a valuable skill for anyone in the workplace. Being a good facilitator isn't the same as knowing how to manage people or run a meeting; it all comes down to understanding the tools and structure that help people collaborate. Done right, facilitation isn't about boring presentations – it's a process for getting groups of people together to solve any problem. This new module will be available on the VegPRO learning portal early in 2019 and is designed for anyone working in the vegetable sector.

The most exciting initiative VegPRO is working on is a 'career pathway' for the vegetable industry. This is a resource that will show what roles are available and the pathway to get into these roles.

GET IN TOUCH

We would love to hear your feedback, which can be submitted via the VegPRO website under the training tab. This is not just for those who have attended training but also anyone in the industry to have your say on how education and training should look for the vegetable sector.

Finally, as the new year has arrived, it is a timely reminder to keep alert with workplace safety so that we all have a good start to 2019. Don't forget the VegWHS carrot USB and resources on the website to help keep you and your workplace safe.

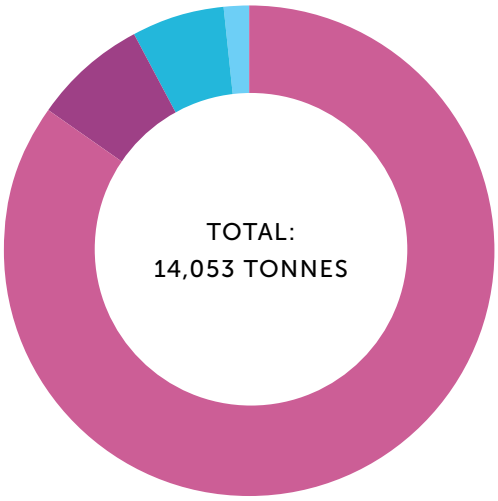
INFO R&D

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

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

VEGGIE STATS: BEETROOT



PRODUCTION BY STATE 2016-17

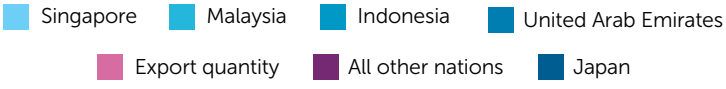
- Queensland continues to have the largest beetroot production in Australia. However, production levels have dropped from around 40,000 tonnes in 2008-09 to around 12,000 tonnes in 2016-17, which coincides with the closure of a major processing facility in Brisbane in 2011.
- New South Wales has also seen a significant drop in beetroot production, down from over 2,700 tonnes in 2008-09 to under 900 tonnes in 2016-17.

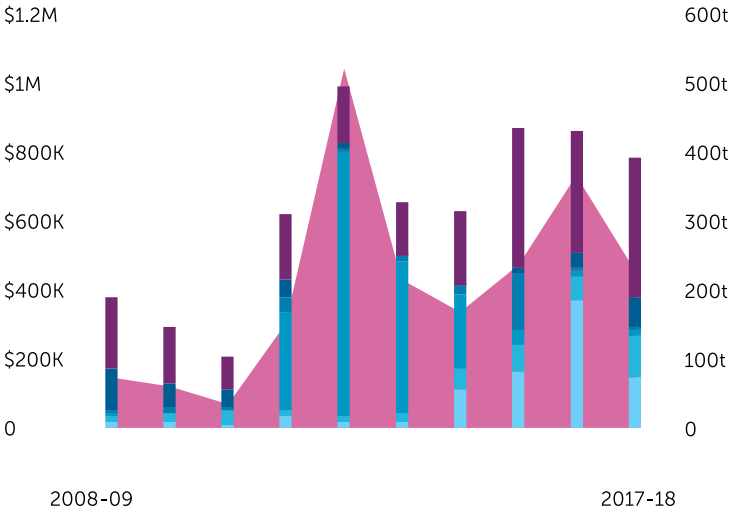
Source: Australian Horticulture Statistics Handbook - Vegetables, Hort Innovation, various years.

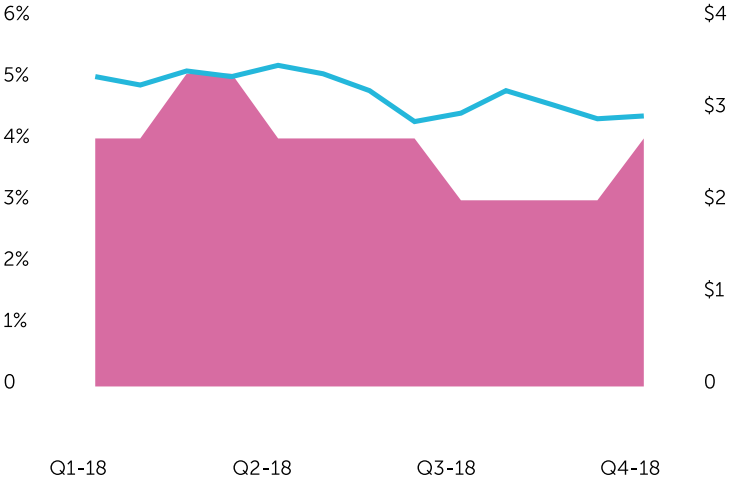
EXPORTS OF BEETROOT AND SIMILAR EDIBLE ROOTS (FRESH OR CHILLED)

- Australian exports of fresh or chilled beetroot and similar edible roots have bounced back from a serious decline into the late 2000s, which was followed by a short-term spike in exports to Indonesia. Singapore has been the major recipient of exports in recent years, with lesser total quantities going to Japan and the United Arab Emirates.

Source: Global Trade Atlas, accessed December 2018



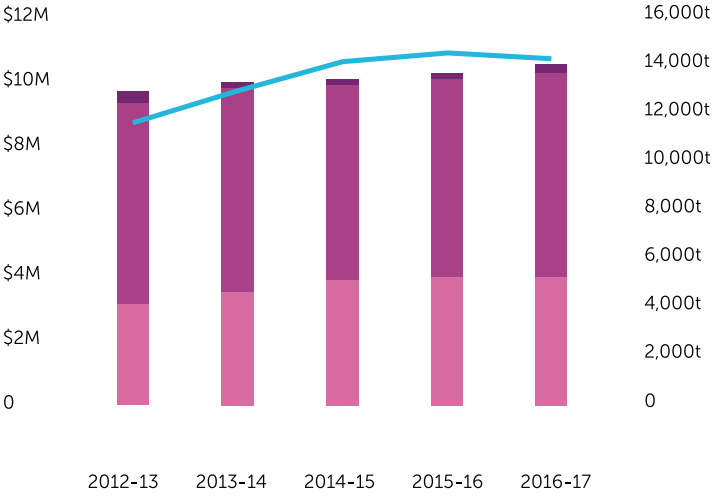




HOUSEHOLD SPEND ON BEETROOT

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

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



KEY STATISTICS

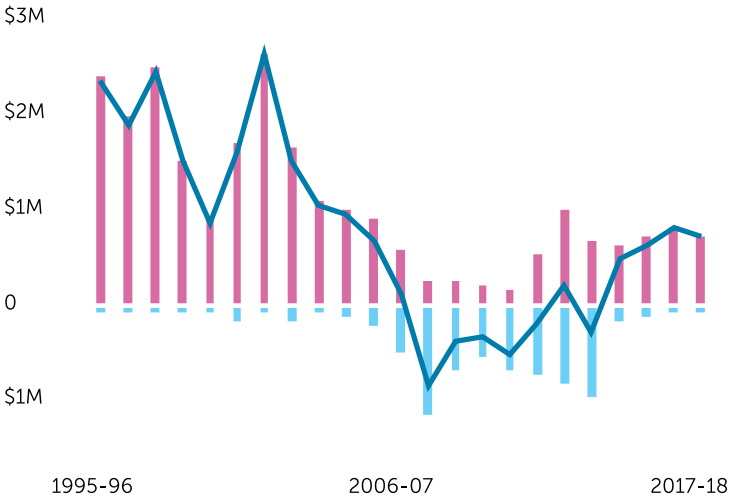
- Australia produced over 14,000 tonnes of beetroot in 2016-17, continuing the trend of small year-on-year increases in production volume.
- However, this is lower than production levels in 2008-09, when Australia produced over 43,000 tonnes of beetroot.
- On average, around 60 per cent of Australian beetroot production volume goes to processing every year.

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

TRADE BALANCE OF BEETROOT AND SIMILAR EDIBLE ROOTS (FRESH OR CHILLED)

- Australia's trade balance for fresh or chilled beetroot and similar edible roots has been largely positive, except for the period 2006-07 to 2013-14 which saw an influx of imports from New Zealand. *Note: International trade data includes beetroot in the same category as salsify, celeriac, radishes and other similar edible roots (excluding carrots and turnips).*

Source: Global Trade Atlas, accessed December 2018



During the Apollo-Soyuz Test Project in 1975, USSR cosmonauts pranked US astronauts by presenting them with tubes labelled as vodka - which actually contained borscht (beetroot soup).

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

Northern Territory Vegetable IDO Laura Cunningham.


Queensland Vegetable IDO Cherry Emerick.

EXTENDING KNOWLEDGE AND SUPPORT TO GROWERS ACROSS NORTHERN AUSTRALIA

Our series of Vegetable Industry Development Officer (IDO) profiles continues in this edition of *Vegetables Australia*, with Laura Cunningham and Cherry Emerick introducing themselves to readers. After originally living and working in Victoria, Laura and Cherry shifted north to further their careers in horticulture before transitioning to the National Vegetable Extension Network (VegNET) IDO role. VegNET is a strategic levy investment under the Hort Innovation Vegetable Fund.

MEET LAURA CUNNINGHAM

Growing up in south-west Victoria, agriculture was part of life. The family property on the Bellarine Peninsula was where I spent a lot of my time. My family grew fruit, vegetables and had Angus cattle on the property.

I furthered my agricultural career by working in the livestock industry, gaining valuable knowledge through short courses and practical on-farm experience, which helped me learn more about cropping, pasture and pasture renovation, cattle husbandry, handling, selection and sales skills.

I moved to the Northern Territory in 2010, where I transitioned to Rural Services comprising horticultural, agronomy and irrigation sales. My experience in the Northern Territory has taught me a great deal in a very short time, but with the wonderful support of many business owners, I have been welcomed and mentored by very experienced government and industry leaders who have been willing to give up their valuable time to teach me the ways of the NT.

PROBLEM SOLVING

My appointment to the NT Farmers Industry Development Officer (IDO) role, funded by Hort Innovation, is a wonderful opportunity for me to give something back to the community. It has helped to expand my knowledge and career by assisting with problems and issues encountered at the farm level. I have assisted in areas such as pest and disease issues; water licensing and land clearing applications; compliance requirements; and general grower concerns.

My IDO role offers growers a support network and facilitates training programs to the NT's predominately non-English speaking Vietnamese and Cambodian vegetable growers through grower levies. Translators are provided to help achieve best practice standards and certification for food safety requirements.

The VegNET program provides scientific, research-based information in many different contexts to help growers gain the knowledge and confidence required to effectively implement practice change to their businesses for a sustainable industry and more profitable outcomes for the community and the NT economy.

You can get in contact with me on 08 8983 3233 or at ido@ntfarmers.org.au.

INTRODUCING CHERRY EMERICK

I was a hands-on vegetable grower for over 10 years across Queensland and prior to that, Victorian growing regions. My learning has been straight from the paddock to the shed, and each day in my conversations with growers and stakeholders I often draw on experiences. My strengths lay in food safety quality; supply chain management; facilitating projects; and fostering vital relationships locally and nationally within the industry. As well as working closely with growers, I find myself advocating and often providing a growers' perspective to stakeholders.

When the VegNET Industry Development role came up, I couldn't pass up the opportunity to support growers. I arrived in a bit of a whirlwind, with Tropical Cyclone Debbie hitting our region within weeks of commencing the role. Thrown into the deep end, my role very quickly became about supporting, communicating and helping growers recover. It was a stressful period, but it gave me an opportunity to develop some valuable relationships, and I learned a lot very quickly.

SUPPORTING INDUSTRY

I'm passionate about the industry, helping people and trying to support them so they can grow profitable and sustainable businesses. I'm quite zealous about women in horticulture and will take the chance whenever I can to encourage and support them to upskill, step up into leadership roles, and grab the opportunities that are available to them with both hands – this is something close to my heart. I'd also love to see more young people on-farm taking on career roles. With the support of our VegNET Industry Development Officers, it all becomes achievable.

R&D, innovation, value-add and export are key to success and growth for our growers and are the stable menu to my day; however, just like the farm and packing sheds, no day is the same for me. This role is like being on a roller coaster some days. You have your challenges and successes with a few thrills and spills along the way, but working for you (the grower) makes me want to go that extra mile and deliver positive outcomes – with a smile of course.

My area covers Cooktown to Mackay, which encompasses some significant vegetable growing areas and a lot of kilometres. The Bowen Gumlu Growers Association hosts me – Bowen and Gumlu is the largest winter vegetable production region in Australia and I've lived in the region since 2002. I'm a steadfast local, proud and passionate.

If you've got a question about the industry or your farm and/or packing shed, please get in touch with me at idm@bowengumlugrowers.com.au or on 0427 701 225.

INFO R&D

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

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

Project Number: VG15049

Hort Innovation Strategic levy investment | VEGETABLE FUND

SHOWCASING THE LATEST IN PEST AND DISEASE MANAGEMENT PRACTICES

In November 2018, a large demonstration site in Queensland brought the horticulture industry together to witness the latest crop protection products available on the market. The site gave growers an insight into how these products impact their crops and what can occur if they are left untreated.

Field demonstrations for growers and advisers in the horticulture industry have taken a new approach after crop protection company Syngenta developed a nine-crop, multi-target site at Gatton, Queensland, to emphasise real-world spray programs.

GrowMore was devised as a way to give guests a sneak peek at Syngenta's research and development pipeline. The demonstration was delivered with assistance from the Queensland Department of Agriculture and Fisheries, and independent agronomist Ant McConville from Eco Ag.

"This is a significant investment by the company and arguably the biggest the horticulture industry has seen in a demonstration site," Syngenta Technical Services Lead Shaun Hood said.

"The GrowMore site is one hectare in size, with nine crops planted to highlight new technology, so that growers and advisers could touch and feel the benefits of products we're bringing to market."

Laid out in three bays, work began on the site six months before the launch date of 14 November 2018.

- Bay one demonstrated a commercial spray program – including a new dual-mode of action fungicide – across cucurbits, leafy vegetables and spring onions. Submitted for registration, this group 11 and 49 product has been designed for the control of downy mildew and suppression of other key diseases including gummy stem blight and white rot.
- The second bay introduced growers and advisers to a pesticide with a new mode of action, which has only recently been submitted for registration. Targeting silverleaf white fly, thrips, aphids and lepidopteran pests, the insecticide was applied as part of a commercial spray program in tomatoes. The bay was also used to demonstrate the benefits associated with the responsible use of Durivo in both cabbage and broccoli. Applied in the nursery, this product controlled both chewing and sucking pests during the establishment period to deliver a uniform crop that could offer harvesting efficiencies.
- Finally, the third bay demonstrated the benefits of a potato disease management program featuring the recently-released liquid seed treatment Vibrance Premium, as well as Miravis, released earlier in 2018 as foliar spray for Alternaria (target spot). While the potatoes were planted late in the season, guests observed the benefits associated with this new chemistry – extended green leaf retention delivered clean tubers that were more uniform in size.

"The feedback from the growers and advisers was really positive, and they were pleased we had addressed resistance management while making sure the spray programs were commercially realistic," Mr Hood said.

DELIVERING VALUE

Syngenta Senior Product Lead for potatoes and vegetables, Richard Packard, said it was rare for growers to see untreated crops and how much damage pests and diseases could do.

"The layout of the site enables guests to compare treated versus untreated crops, allowing us to develop an in-depth understanding of the target; see how much damage these pests and diseases can do if left unchecked; and how to effectively control them as part of a program," Mr Packard said.

"It's brilliant for us to be able to demonstrate the value of our program and the benefits that new innovation is bringing to growers in helping them deliver sustainable approaches to protecting the potential of their crops."

Syngenta Australia-New Zealand Territory Head Paul Luxton opened the site to guests at a dusk dinner function, which kicked off two weeks of grower visits.

"What we really want to achieve with this GrowMore site is to showcase some of this new technology we've got coming through our pipeline and we certainly achieved that," he said.

"We are first and foremost a company that brings new innovations to market. Globally we spend $1.5 billion annually on research and development, and with access to cutting-edge technology, we then get to tailor those solutions specifically for Australian and New Zealand growers, providing them with a competitive edge.

"There are few things more important than putting quality food on the table and taking care of the environment and that's something we are pretty proud of."

INFO

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

HARD WORK PAYS OFF FOR FOURTH GENERATION VEGETABLE GROWERS

NAME: Justin Vanstone
AGE: 26
LOCATION: Crowley Vale, Queensland
WORKS: Vanstone Produce
GROWS: Shallots (spring onions), silverbeet, broccoli, Broccolini (Perfection Fresh Australia) and pumpkin

HOW DID YOU FIRST BECOME INVOLVED IN THE VEGETABLE INDUSTRY?

I am the fourth generation of farmers in our family. Our family started farming in 1912 at Rochedale, Queensland, which was the farm that I grew up on. In 2004 (due to housing developments), our parents purchased two farms in the Lockyer Valley and started vegetable growing in 2008. I now own one of those farms with my brother Zac.

From 2009 until I finished school in 2013, I was not full-time on the farm. However, in late 2013 Zac and I approached our parents to work out a way for us to become more involved and work towards owning the farm and the business ourselves.

It wasn't until early 2015 that we managed to officially own the farm in our names, and at the same time, purchase a neighbouring farm. During that period, our parents also got divorced which made our transition into the business and the farm a little more challenging.

WHAT DOES YOUR ROLE AS MANAGING DIRECTOR AT VANSTONE PRODUCE INVOLVE, AND WHAT ARE YOUR RESPONSIBILITIES?

Overall my brother and I are both very hands-on in all aspects of the business, but over the past 18 months we have split the day-to-day responsibilities to give us a greater focus on different things.

Zac communicates with our customers regarding orders and quantities, which goes hand-in-hand with the management of picking and packing staff, along with the logistics of getting those deliveries to our customers on time with the correct quantities.

I spend a lot of my time on the growing side of the farm, which still naturally has to go with the picking and packing because if there's nothing to pick, there's nothing to pack.

But generally, I maintain an oversight and ensure all aspects of our business are working as smoothly as possible.

OTHER FAMILY MEMBERS ARE ALSO INVOLVED IN THE FARM. WHAT ARE THEIR ROLES, AND HOW DO THEY SUPPORT YOU?

On the farm now are our youngest two siblings, who have come to work in the business since finishing school. Our sister Johanna works in our pack shed overseeing packing and order fulfilment, while our brother Brent generally works outside. His main tasks are tractor work and irrigation.

Our father Ross has stayed involved on the farm to some extent since 2014. Today, he generally helps out on planting days and does some general maintenance around the farms.

WHAT ARE THE BIGGEST CHALLENGES YOU FACE WORKING IN THE INDUSTRY AND HOW DO YOU MAINTAIN YOUR ENTHUSIASM?

Every day presents a different set of challenges which keeps things interesting.

There have been a handful of things that are a constant challenge of late; for example, input costs are going up while sales prices are staying the same or coming down.

Overall the weather is a big factor as it always has been (and more than likely always will be), but we cannot control that.

Finding good staff and the cost of labour is by far our biggest ongoing challenge, especially in the labour-intensive crops we grow.

Changes to water licencing and allocations is probably our biggest new concern. The draft water plans were released in recent months and it is already affecting not only ourselves but many other farms in our area. Multigenerational businesses engrained in the Lockyer Valley for much longer than ourselves all of a sudden have become potentially unviable with one change by a government. Hopefully our state government will see some sense in the new year and come up with a solution for our area which will achieve desired outcomes, without affecting the sustainability and viability of the farms.

YOU RECENTLY JOINED THE LOCKYER VALLEY GROWERS INC. COMMITTEE. WHAT WAS THE MOTIVATION BEHIND YOUR DECISION?

Since joining the grower's group in 2015, I have seen the group's ability to organise meetings and events with great attendance and an increasing number of members. I generally just wanted to get more involved in the industry and hopefully I have something that I can add to the group.

HOW IMPORTANT IS LOCKYER VALLEY GROWERS INC. TO THE LOCAL VEGETABLE INDUSTRY?

I believe the group is growing in its importance and becoming an asset for the entire growing area. It is a great tool for farmers, with many workshops and events organised through the group that provide a number of benefits to everyone that may otherwise pass them by.

Many workshops and events that are organised can be a source of information, covering everything from spray workshops to workplace health and safety. Events like this can be great for receiving information and even having key staff attend.

IN YOUR OPINION, HOW IMPORTANT ARE GROWER GROUPS TO THE WIDER VEGETABLE INDUSTRY?

I believe a grower's group for any farming region will become a great asset. Perhaps it's not a financial asset or a marketing tool (I don't believe a grower's group would be effective and sustainable if it became a business marketing tool), but it gives the growers a common group that has the ability to communicate with other aspects of the industry and provide feedback or local information to those parts of the industry that might otherwise be hard to ascertain.

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

With the Lockyer Valley being such a great vegetable growing area, all of the local businesses have a great wealth of knowledge that we can lean on with help and advice about almost anything farming related.

We have local agronomists from the resellers in town that provide us with an invaluable level of local knowledge and information we can trust.

For ourselves personally, we have also been extremely lucky to have great neighbours and other growers close by who are

Photography by Rowena Dione.

always open and willing to answer any questions we might have as well as lending a helping hand when we need it.

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

I don't know if I can say that we do anything drastically different to any other operation as we are all facing the same challenges. However, we are constantly trying to improve our processes and the level of efficiency in our business. This includes trying to adopt technology that will help on-farm, or new gear or farm equipment that can reduce input costs.

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

The obvious answer is in international markets, but we have to make sure that we are competitive on a global level for that to be a sustainable pathway for the industry.

The second answer is probably in more convenience/pre-prepared and pre-packed lines as that is where customer demand is heading. The two may even go hand-in-hand. While domestically there is a demand for the convenience lines, I am sure there will become an increasing demand for Australian grown and pre-packed convenience products internationally as well.

WHERE DO YOU SEE YOURSELF IN FIVE YEARS?

We have started exploring the possibility of exporting any of the products we currently grow and whether there is a market for them internationally. We would be hoping to grow that section of our farm.

We have been working on a full 12-month supply of all of our crops and this summer will be our first of growing brassicas outside of the Lockyer Valley, so we will be hoping that works well for us and we can also expand on that.

Generally, we would like to continue to keep building on our relationships with our current customers and hopefully find some new ones. The backbone of our business is our family's history of supplying directly to Woolworths (more than 58 years), so I hope that relationship can continue to grow over the coming years.

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

I guess this question is two-sided from my point of view: there is the industry that runs parallel to the actual vegetable farming operations, such as the crop protection companies, the government bodies, the research and development institutes and the suppliers to the industry, of which I am sure there is plenty of opportunity and demand for young people and women.

Then there are the farms and the farming businesses on our side of the industry. I believe many people would be interested if they knew what opportunities there were – many people still have preconceived assumptions of farming in general, which in my opinion do not apply to the vegetable growing industry. With 365 days a year of supply, growing and packing operations are different to what some people may think.

More particularly on our farm and business, we have around 10 'young' people in key roles in the business, and four are women. The opportunities are there – you just need to put your best foot forward.

To be more specific, we have had a few people approach us looking for work after completing their studies in agronomy, of which they are naturally looking for a full-time position. But on a farm our size, we don't necessarily have a full-time role in that capacity. Although if that particular person was open to the idea of a part-time agronomist or part-time spray operator, it may open the door to greater opportunities.

Dino Boratto and Rae McFarlane with Solomon Islands workers.

BORATTO FARMS GROWS WITH SOLOMON ISLANDS WORKERS

In a bid to expand production and secure an ongoing workforce, Boratto Farms hired workers from the Solomon Islands through the Federal Government's Seasonal Worker Programme (SWP). This has provided benefits and opportunities for both Boratto Farms and the Pacific seasonal workers.

"I turned down two million dollars' worth of baby leaf because I was unsure about my staff."

Dino Boratto owns Boratto Farms, one of the biggest suppliers of hand-cut rocket in Australia. It supplies produce to two of Australia's largest supermarket chains.

A few years ago, however, the prospect of expanding his business or talking to new clients seemed futile. The workforce simply was not reliable and new ventures were too risky without guaranteed staff.

"My business would not be able to go ahead without guaranteed workers. Backpackers can be unreliable. Eighty-eight-day workers were better because they had to complete 88 days to get the second-year visa, but that's only two and a half months," Dino said.

In frustration, he turned to the Australian Government's Seasonal Worker Programme (SWP).

Dino had known about the programme for years but had hesitated to sign up because of what seemed like a daunting process. However, with help from the Department of Jobs and Small Business, which manages the programme, Dino has been able to expand his farm.

The 200-acre commercial farm on the outskirts of Melbourne operates according to the weather and light patterns. Workers need to easily slot into the farm's processes and be willing to work through whatever the elements throw at them, to deliver a product that consumers are happy with.

"It took a month or two to settle in. Because none of them had been overseas before, no one knew what to expect," Dino said.

However, once they learnt the farm's processes, these workers became the backbone of the business.

"With the five Solomon Islands workers, we're growing about 15 tonnes of cabbage per week. Having more reliable staff, I can grow more product. I am at a stage in my business that I turn work away now," Dino said.

He also credits the Pacific seasonal workers with maintaining the farm's production levels of lettuce and baby spinach.

"They are fantastic because they are here, and they want to work," Rae added.

Workers at Boratto typically take home around AU$15,000 in savings and they are provided with comfortable accommodation, access to a car and activities to welcome them into the community.

> I turned down two million dollars' worth of baby leaf because I was unsure about my staff.

"It's fearful at first. It's like doing quality assurance the first time – the scheme seems really hard and daunting but after you get to do it, it is really easy."

Boratto Farms Human Resources Manager Rae McFarlane agrees.

"I would encourage any farmer to take it up. It's a bit of a headache to start off in the first place but it is well worth it once you have it set up," she said.

"It is absolutely easy once you have the accommodation and everything like that organised. The workers keep coming and you don't have to stress too much."

FORMING STRONG RELATIONSHIPS

In 2017, Boratto Farms recruited seasonal workers from the Solomon Islands, a country where 80 per cent of the population engage in farming to meet their daily needs. Therefore, workers arrive in Australia with agricultural experience and are ready to work.

Dino wanted the workers to experience Australian culture and feel like they wanted to come back after each six-month season. Over Easter, this included attending the AFL Good Friday match and enjoying Rae's home-cooked roast with all the trimmings.

While the Solomon Islands workers had their minds opened to a different world, Boratto Farms experienced a change for the better and is looking forward to the return of its Solomon Islands team next season. Furthermore, Dino is planning to expand his recruitment next year to also include a crew of women from Samoa for the packing house.

INFO

For further information on the Australian Government's Seasonal Worker Programme visit the Department of Jobs and Small Business website: jobs.gov.au/seasonal-worker-programme.

For more information on Solomon Islands workers contact Solomon Islands Ministry of Foreign Affairs and External Trade, Labour Sending Unit. Email the Labour Mobility Unit at lmu@mfaet.gov.sb or phone: 0478 666 029 or +677 21250. Further details can be found at heretoworksolomons.com.

GROWCOM URGES QUEENSLAND MINISTER NOT TO TURN THE TAP OFF

Australia's salad bowl is under threat from hasty planning decisions and historic under-investment in water assets and management, as Growcom Chief Advocate Rachel Mackenzie reports.

Fair and equitable access to water is critical to the success of the Queensland horticulture industry and we do not underestimate the complexity of the water planning process to address this issue.

For this reason, we are calling for a flexible and supportive approach to preparing growers' submissions on the draft Moreton water plan amendment to ensure that irrigators in the Central Lockyer scheme can provide accurate data and more detailed information about the negative impact the plan could have on their access to water and their property values.

Irrigators are very concerned about how water can be allocated based purely on a record of use without having significant negative impacts and community upheaval.

Given the poor quality of metering in the scheme, some growers on neighbouring blocks can have vastly different water allocations, which could significantly reduce the value of one enterprise compared with another.

Many irrigators are questioning their ability to continue farming based on the proposed long-term entitlements published in the plan.

They also face significant water price increases as a result of the recently-announced review to be conducted by the Queensland Competition Authority. Water supply facilities in the Central Lockyer have a poor performance record in supply water for surface and groundwater take. Paying high prices for poor water supply liability is an added burden for growers.

The changes proposed in the draft plan will jeopardise the viability of the Lockyer Valley, which is arguably Australia's most important vegetable production area.

We call on Queensland Minister for Natural Resources, Mines and Energy Anthony Lynham to provide time for all growers to document the problems they may face if the draft plan and high water prices are implemented. We are aware that many growers may not feel they have adequate understanding of the issues to prepare a submission. The Minister's Department must closely monitor the situation to address these concerns.

In the longer term, we are seeking investment in reliable water for the Lockyer Valley as it would be a shame to waste the productive capacity of the seventh most fertile soil in the world.

We contend that the public will expect the Queensland Government to take a reasonable and measured approach that does not threaten the long-term viability of the Lockyer Valley as a production area and an important provider of local jobs.

INFO

For more information, please contact Rachel Mackenzie at rmackenzie@growcom.com.au.

STEPS TO MINIMISE WASTE WITH SPRAYING

When spraying crop protection products, it is important to ensure the product is applied accurately at the correct rate to avoid wasting product or unnecessarily damaging the crop. Syngenta Senior Technical Services Lead Scott Mathew examines what growers can do to achieve the most efficient and effective spray application of a product.

Spraying is about placing the correct dose of chemical at the right place, at the right time. The cost of under-dosing or poor application practices can really mount up if it leads to sub-standard control. Crop quality and yield can suffer, which impacts directly on profit and is easy to see.

Likewise, over-dosing or unnecessary waste of product comes at a cost, even when the desired level of control is achieved.

There are several things you can do when spraying to avoid wasting product and your time. You should start with knowing the exact area to be sprayed so you can calculate the amount of product/s and water required to complete the spray operation. You don't want spray to be left in the tank at the end of the job because it has to be disposed of. If so, you are literally pouring money down the drain.

To measure the water of volume added to the tank, I recommend using a flow meter fitted in the water filling line. Rather than relying on the graduations on the spray tank, flow meters are often automated to cut off or make a sound when the correct amount of water has been added. Sight gauges in the tank aren't as accurate for measuring the liquid volume, especially when the tank is only part-filled.

When you are busy or pressured to spray due to inclement weather, reducing downtime is a priority. Your aim is to fill the tank as fast and efficiently as possible with spray liquid, not foam.

Excessive foam in the spray tank can cause some of the spray mix to run over the spray tank via the overflow before the sprayer is full. That's an environmental problem and a waste of product, which can affect calibration and the metering of spray mixtures.

The three most common causes of foaming are:

1. Leaving the induction hopper open, resulting in air being sucked in.
2. Air leaks in the pipework. To check for leaks, circulate clean water in the spray tank and inspect for any sign of bubbles on the suction side of the sprayer.
3. Adding product before there is sufficient water in the spray tank. The circulating spray mix shoots upwards inside the tank, mixes with air and creates foam.

Anti-foaming agents can prevent excessive foaming when filling a spray tank. I suggest always having some on-hand – it could certainly save some valuable time.

Where a tank runs out, mark the spot. That will avoid re-treating areas or leaving areas untreated. Besides being costly, re-treating areas may exceed the maximum permitted rate and lead to excessive pesticide residues. Unsprayed areas are likely to harbour unwanted weeds, insects or disease infections, so it's important to 'get it right'.

FURTHER OPTIONS

GPS controlled auto on-off sprayer switching has been well received by many operators and, because of improved accuracy, has reduced the total area sprayed by three to five per cent. Modification of the spray plant can be simple, particularly with newer sprayers, where it may only require the fitting of a GPS antenna and GPS control box which plugs into the existing wiring.

One final suggestion to reduce total farm waste is to consider using larger pack sizes wherever feasible. For example, if you purchase two five litre plastic containers, they typically contain 30 per cent more plastic than one 10 litre plastic pack.

INFO R&D

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

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

THE IMPORTANCE OF TRACEABILITY IN VEGETABLE GROWING BUSINESSES

Food safety, governance, compliance and business efficiencies are at the centre of end-to-end traceability of fresh produce. To assist with this, a resource planning system has been developed to provide fresh produce businesses with a single solution that can store all relevant records to achieve complete traceability from paddock to plate. *Vegetables Australia* reports.

There is growing emphasis on traceability in the horticulture industry; that is, managing the end-to-end production process of fresh food, from ground preparation in the paddock through to the consumer's plate.

According to Dialog Information Technology National Dynamics Solution Manager Terry Ryan, traceability is important for many reasons and its absence could potentially devastate an entire industry, as it almost did following the strawberry tampering incident in Australia, where needles were found in punnets of strawberries from supermarkets around the country.

"It's important for food safety or recalls so that if any issues occur, they're quickly and easily traced all the way back to where the produce was grown; who harvested and packed it; and which retailers it was distributed to. Having that knowledge at growers' fingertips can save them a lot of money," Mr Ryan said.

"That's really the crux of traceability – it's health, it's governance, it's compliance and cost-saving for producers as it tracks their costs of production, their sales and profitability. That's why it's important to have an end-to-end solution that does that traceability."

ONE-STOP OPTION

Currently, the majority of traceability systems that growers use consist of a number of solutions that work independently of each other and are connected through manual processes, so information is often unable to be delivered end-to-end and in real-time.

To assist growers with their traceability requirements from paddock to plate, Dialog delivers the LINKFRESH™ solution – a single solution containing all of the components that a fresh food producer needs to run their business. From a farming module where all growing records and harvest planning details are kept through production, product grading, packing, warehouse management, consignment tracking and logistics, through to sales forecasting, budgeting quality control and full financials, all in the same end-to-end solution.

"It can also track the consignments from harvest all the way through to the retailer, and all the associated costs with it. We also include quality control. Furthermore, we have a mobile solution so that it can be used in the field and in the warehouse with mobile devices," Mr Ryan said.

At each stage the information is stored in the LINKFRESH™ system which is supported by Microsoft Dynamics enterprise resource planning (ERP), offering growers a well-maintained, up-to-date software solution built on the best practices from a global group of fresh food producers.

"This allows a grower to stay agile," Mr Ryan said.

"The industry has, in the last few decades, become immensely complicated. Growers have to be able to automate their operations; embrace remote working in multiple locations; select new technologies as they come down the wire; establish where their priorities lie; and have all of these internal controls at their fingertips to keep pace with their changing environment.

"At the same time, they're working on narrow margins so they've got to stay lean and efficient and be agile enough to plan for the future. Change is still coming."

LOOKING AHEAD

Currently, traceability stops at the supermarket shelf, but Mr Ryan predicts that over the next five years, the industry will see an extension of traceability from the point of purchase.

"We've seen the meat industry trying to create intelligent packaging so that when you look at meat in the supermarket, the packaging changes to tell you the status of the meat," Mr Ryan said.

"We've seen it with companies that are trying to protect their brand and to do that, they need to take traceability all the way to the consumer, using a mobile to read smart codes that will tell you where the product came from. The same is going to happen with the fresh food industry."

INFO

For more information, please visit dialog.com.au or linkfresh.com.

ADVANCING PRODUCTION ACROSS THE AUSTRALIAN HORTICULTURE INDUSTRY

The Advanced Production Systems Fund is one of seven funds developed by Hort Innovation to facilitate longer-term strategic R&D programs that aim to secure the future of the horticulture industry. *Vegetables Australia* spoke to Hort Innovation Business Development Manager Dr Alok Kumar about the most recent investment in advanced production systems involving tree genomics.

To complement traditional strategic levy investment, Hort Innovation has developed the Hort Frontiers strategic partnership initiative to support research that will address major challenges facing the horticulture industry in the future.

The projects within the Hort Frontiers initiative are relevant across the horticulture industry. They are considered long-term investments (with a five- to 15-year horizon) and are likely to attract additional public and private funding as co-investment. The vegetable industry, like all commodities, is set to benefit from the investments made under Hort Frontiers as the diversity of investors includes organisations from along the value chain.

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

LONG-TERM BENEFITS

The Advanced Production Systems (APS) Fund was identified as one of the key needs of the horticulture industry through an open and transparent public consultation process.

Hort Innovation Business Development Manager Dr Alok Kumar said that the key objective of the APS Fund is to develop future "smart farms" for the Australian horticulture industry to address key issues including labour, water, and biotic and abiotic stress.

"It is likely to increase productivity and profitability of Australian horticulture through cropping system intensification, farm automation and innovative tools and technologies," he explained.

There are three investment themes for the APS Fund: tools and advanced technologies; systems design: practice and management; and innovation and disruption.

"The APS Fund aims to develop new tools that are likely to benefit growers by reducing labour (farm automation), crop intensification (indoor cropping), improve genetics and provide tools to manage biosecurity, etc. Several of these programs are likely to benefit the vegetable industry," Dr Kumar said.

MAJOR INVESTMENT

In December 2018, Hort Innovation announced a new investment targeting the innovation and disruption theme of the APS Fund. *National Tree Genomics Project* (AS17000) is a $13.3 million, five-year research project that will deliver tools and technologies for the industry to improve the efficiency of tree breeding, architecture and physiology.

This will include developing a genomic toolkit for tree breeders and researchers to better understand how genes control traits that are valuable to Australian growers. A genome is an organism's complete set of DNA, including its genes, and in this instance the kit will focus on traits such as tree size, yield, disease resistance and tree maturity, etc.

The project aims to build a complete DNA map that will visualise the genetic make-up and variability of the nation's five leading tree crops, which represent 80 per cent of the total volume of horticultural tree crop production in Australia.

"There is a significant gap in the understanding of different aspects of tree biology, particularly in crops such as mango, macadamia and avocado. Other crops included are almonds and citrus," Dr Kumar said.

"It is critical for the future of Australian horticulture that modern tools and technologies are available to diverse stakeholders, including researchers, so that horticulture growers are globally competitive and highly profitable."

The program will be delivered by a number of domestic and international research and commercial partners such as the Queensland Alliance for Agriculture and Food Innovation (QAAFI), which is embedded within the University of Queensland and the Queensland University of Technology. AS17000 is funded through co-investment and there are no levy funds invested in the program.

Western Sydney University, Bioplatforms Australia, Beijing Genome Initiative and Jain Irrigation are also currently involved and Dr Kumar said it is likely that new partners will join the program in the future.

GET INVOLVED

Hort Innovation encourages vegetable industry members to submit a concept or contact Dr Kumar to discuss investment opportunities available in the APS space.

Each Hort Frontiers Fund is guided by an Expert Advisory Panel (EAP), and this includes representatives from the vegetable industry. The EAP for the Advanced Production Systems Fund is:

- Ingrid Roth – Roth Rural & Regional.
- David Bell – Hidden Valley Plantations.
- David Cliffe – Narromine Transplants.
- Ed Fagan – Mulyan Pty Ltd.
- Lachlan Donovan – The Avolution.
- Mark Uebrergang – Agromillora.
- Ian Bally – Department of Agriculture and Fisheries, Queensland.
- Grant Thorpe – Plant & Food Research Australia.
- Dr Alok Kumar – Hort Innovation.

INFO R&D

For more information, please visit hortfrontiers.com.au or contact Dr Alok Kumar on 0418 322 070 or at alok.kumar@horticulture.com.au.

To submit an idea for a future project, visit Hort Innovation's Concept Proposal Form at horticulture.com.au/about/investing-is-our-business/concept-proposal-form/.

This project has been funded by the Advanced Production Systems Fund, part of the Hort Frontiers strategic partnership initiative developed by Hort Innovation, with funding from a range of co-investors and contributions from the Australian Government.

hort frontiers Strategic partnership initiative | ADVANCED PRODUCTION SYSTEMS FUND

CALENDAR

19-20 FEBRUARY 2019: AGRIFUTURES EVOKE[AG] FOOD FARM FUTURE

Where: Royal Exhibition Building, Melbourne

What: evoke[AG] will attract a range of groups including farmers, start-ups, innovators, researchers, businesses, government and investors. Attendees will gain an insight into agri-food tech and related research in Australia, New Zealand and Asia, as well as create a platform for start-ups to display their technologies and create deal flow and investment into Australia.

Further information: evokeag.com

21-22 FEBRUARY 2019: PCA REGIONAL GREENHOUSE TOUR OF TASMANIA

Where: Tasmania, Australia

What: Protected Cropping Australia (PCA) will host a two-day regional tour of Tasmania, visiting several crops, growing systems and greenhouse structures including retractable roofs. It is also an opportunity to network and make industry connections.

Further information: protectedcroppingaustralia.com

5 MARCH 2019: FOOD STANDARDS AUSTRALIA NEW ZEALAND (FSANZ) BIENNIAL STAKEHOLDER FORUM

Where: Sydney Olympic Park, New South Wales

What: With the theme *Fit for purpose food regulation now and in the future*, FSANZ's inaugural Biennial Stakeholder Forum will explore topics relating to the FSANZ food regulation system and will take a look into the future of food regulation, food safety and food science. The one-day event will be followed by a cocktail reception.

Further information: foodstandards.gov.au

24-26 JUNE 2019: HORT CONNECTIONS 2019

Where: Melbourne Convention and Exhibition Centre

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

Further information: hortconnections.com.au

CONTROL OF LETTUCE ANTHRACNOSE USING BIOLOGICAL AGENTS

Inspired by his previous work in agronomy, University of Melbourne PhD student Jose Palacios is currently undertaking a research project into biological measures to control anthracnose in lettuce. Jose spoke to *Vegetables Australia* about his project, the activities undertaken so far and what it aims to achieve.

Anthracnose is a group of diseases which can be caused by different fungal species. It is found commonly in vegetables such as celery, tomato, spinach and lettuce, and the diseases are characterised by the symptoms and damage inflicted on the crop. In lettuce, the symptoms of this disease are characteristic brown spots and holes in the leaves.

University of Melbourne PhD student Jose Palacios, who has a background in agricultural and soil science, is currently completing a research project on anthracnose in lettuce. Jose's research project objective is to evaluate 27 *Trichoderma* strains and their secondary metabolites – the biochemicals they actively produce as a defence mechanism to protect their space in the soil.

Jose is conducting this investigation at the Faculty of Veterinary and Agriculture Sciences at the University of Melbourne in collaboration with Dr Mary Cole from Agpath in Vervale, Victoria, and the University of Naples in Italy.

PROJECT BACKGROUND

Jose has worked with *Trichoderma* since 2001 in Cuba, South America (Peru, Colombia and other countries) and in Australia in organic crops. His research into lettuce anthracnose was inspired by his previous role as an agronomist with Victorian organic salad mix producer Coolibah Herbs.

"I found that lettuce anthracnose was a disease that was very hard to control. Even on conventional farms, only one chemical can control it efficiently, but with reported high risks for human health," Jose said.

"I investigated and found reported uses of *Trichoderma* secondary metabolites to control soilborne diseases in crops, and one day I said, 'perhaps we might control foliar diseases as well.' I searched for help at the University of Melbourne and Agpath and, finally, the investigation project took off in June 2016."

The research spanned across several stages, starting with isolating as many strains as possible from Australian sources and some from commercial formulations; selecting cold-tolerant isolates (as anthracnose is a winter disease); identifying isolates through molecular (DNA) testing; brewing combinations of strains to achieve the production of a more diverse array of biochemicals; and testing in the field in 2017 and 2018.

"An additional aim of this investigation is to make it practical and applicable for almost all foliar diseases in crops by modifying the strains and brewing conditions, but that is a plan for the future," Jose said.

CURRENT PROGRESS

The isolation and identification of cold-tolerant *Trichoderma* strains has finished as well as the isolation of secondary metabolites and field trials. Jose said this had a significant effect in controlling lettuce anthracnose.

"Currently molecular techniques are being employed to identify strains and determine the relationships among them. Together, with the morphological data, it will help to nominate species/strains that are able to control anthracnose," he said.

As a soil scientist, Jose is committed to finding economically feasible and environmentally responsible ways to produce food, particularly in the case of anthracnose disease in lettuce.

"Conventional farmers are dependent on synthetic chemicals to control this disease. I am not against the chemical industry, but I trust there are more sustainable ways to do it," Jose said.

"Even chemicals need conditions to work efficiently, such as water pH and hardness, droplet size, surfactants, air temperature, etc. Biologicals are living organisms and they also need minimal conditions to express all their goodness."

According to evidence in this research, not a single biological control agent can control every disease in all conditions all the time.

"The screening process is essential for success," Jose said.

Furthermore, using biochemicals instead of living spores for foliar applications could be a revolution in crop disease control.

"I understand the nature of the farming business – farmers need to protect their investment, but they should never forget that there are always alternatives to just spraying chemicals by the calendar," Jose explained.

"Integrated Pest Management and Integrated Disease Management both have the principle that the chemical control has to be the last resource, not the first."

INFO R&D

For more information, please contact Jose Palacios at vpalaciosz@gmail.com.

INDUSTRY IN THE MEDIA

The success of Australian vegetable exports dominated industry media recently, with new data showing the industry is on track to achieve its goal of $315 million in fresh vegetable exports by 2020. The Australian vegetable industry experienced an average year-on-year growth of 10 per cent in exports over the past three years, with further work being done to increase market access around the globe and secure the exporting capabilities of the industry's growers.

AUSVEG National Manager – Export Development Michael Coote appeared in print and online media in November discussing the increase in exports for a range of vegetable commodities. Mr Coote noted that while carrots, potatoes and onions comprise over 85 per cent of Australia's vegetable export volume, other commodities continue to see positive growth in the space, including asparagus.

A number of levy-funded activities continue to drive Australia's international trade push, including the *Vegetable Industry Export Strategy 2020*, international trade missions and export readiness workshops for growers.

INDUSTRY NEWS

Labour issues continue to attract media attention, with visa changes and worker exploitation issues spurring further discussion in November. AUSVEG welcomed Prime Minister Scott Morrison's announcement of changes to the current visa programs that are helping Australian growers manage their labour struggles, including changes to the Working Holiday Maker program and the Seasonal Worker Programme.

Following the release of the *Harvest Trail Inquiry* by the Fair Work Ombudsman, AUSVEG held a doorstop in response to the inquiry's findings of the level of non-compliance in investigated workplaces along Australia's Harvest Trail.

AUSVEG Chair Bill Bulmer stated that mistreatment of farm workers in any form has no place within the horticulture industry, and reiterated AUSVEG's strong condemnation of this behaviour. Mr Bulmer noted that AUSVEG will continue to work closely with government, growers, unions, retailers and others in the supply chain to find a solution to this ongoing issue.

Finally, Hort Connections 2019 is gaining traction in the media with the official opening of delegate registrations in November. AUSVEG National Marketing Manager Nathan McIntyre appeared in print media following the announcement of MasterChef winner Adam Liaw as a keynote speaker.

Mr McIntyre noted that Hort Connections is a great opportunity for all areas of the horticulture industry to come together to develop the future of the sector, and that Mr Liaw's contribution to the conference is a great opportunity for the industry to learn about upcoming food service trends.

INFO R&D

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

Project Number: VG15027

Hort Innovation Strategic levy investment | VEGETABLE FUND

Western Australia's permanent trapping grid across the Perth metropolitan area – comprising about 1,900 traps – are integral to surveillance.

Road check points on the Western Australian border are a first line of defence against unwanted pests, weeds and diseases.

STATE BIOSECURITY UPDATE: WESTERN AUSTRALIA

In this edition of *The Front Line*, Madeleine Quirk speaks to the Western Australian Department of Primary Industries and Regional Development about its approach to incursion response and biosecurity preparedness.

Biosecurity is fundamental to safeguarding Western Australia's valuable agricultural resources, the economy, environment and communities against the threat and impacts of plant and animal pests, weeds and diseases.

Department of Primary Industries and Regional Development Western Australia (DPIRD) Sustainability and Biosecurity Executive Director Katherine Clift said without biosecurity systems in Western Australia, pests and diseases such as Queensland fruit fly, Xylella and citrus greening would affect the productivity, profitability and export of viticulture and horticultural products. Invasive species such as red imported fire ants could also have significant impacts on horticulture in the state, as they destroy irrigation systems, machinery and endanger people working in the fields.

Diseases such as karnal bunt and foot and mouth disease could devastate the grains and livestock industries, along with the livelihood of farmers, and the Western Australian landscapes would be taken over by weeds such as pokeweed, which is poisonous to both livestock and people.

"Western Australia is uniquely free from a large number of pests, diseases and weeds that are present in many other parts of the world, not only due to our geographic isolation, but also due to our robust biosecurity systems," Dr Clift said.

"Over the past four years, the Department has been able to strengthen Western Australia's biosecurity defences through a range of activities under the $20 million *Boosting Biosecurity Defences* project, which is funded by the State Government's Royalties for Regions program, as part of the Seizing the Opportunity in Agriculture initiative.

"The project has significantly improved the Department's capacity to manage risks through rigorous trade regulations and import requirements, incursion response mechanisms, preparedness activities, and building the capacity of communities to become involved in pest management."

RIGOROUS TRADE REGULATIONS

As trade and travel continue to increase, more and more challenges are placed on quarantine services in Australia.

In Western Australia, the Department operates the Quarantine WA service. Border checkpoints are the first line of defence against incursions of unwanted pests, weeds and diseases coming from other Australian states, and these checkpoints are located at road, air, rail, sea and mail entry points throughout Western Australia.

"We enforce strict biosecurity legislation on items being imported into the state, ensuring that risk material is inspected, released, treated, re-exported or destroyed," Dr Clift said.

"Inspections and certification services are carried out at our Canning Vale Markets and other metropolitan sites."

In some cases, the movement of goods may be restricted to and from certain areas inside Western Australia. For example, the movement of stonefruit and citrus into the Ord River Irrigation Area is prohibited between 1 April and 30 November each year.

RESPONDING TO BIOSECURITY THREATS

DPIRD is committed to the development and ongoing improvement of emergency management arrangements.

"In the event of a large-scale emergency, our response staff depart from the normal organisational structure and adopt a response structure based on the Australasian Inter-Service Incident Management System (AIIMS), as detailed in our Incident Management System Manual," Dr Clift said.

"The need to increase our capabilities in this area is becoming ever-increasingly important, with increased trade and travel resulting in increased numbers of exotic incursions. In the past two years, the Department has responded to a number of Queensland fruit fly incursions, as well as cucumber green mottle mosaic virus, *Dickeya dianthicola*, tomato-potato psyllid, brown marmorated stink bug, and citrus canker."

One of the 11 sub-projects under the *Boosting Biosecurity Defences* project has a core focus on building emergency response capacity within the Department. As a result, the Department has been able to improve its response capabilities through projects such as emergency management training for staff; simulated response exercises; system improvement to enhance resource management (WebEOC) and case management (MAX); incident recovery activities; skills enhancement programs for dealing with incursions; industry liaison training; and Laboratory Information Management Systems (LIMS).

Dr Clift said that through this work, the Department, industry and community are more prepared to respond to an event and recover from its impact.

Eastern Wheatbelt Biosecurity Group (EWBG) committee member Dean Sinclair from Lake Grace. Image courtesy of EWBG.

Incident staff in the DPIRD emergency control centre. Images courtesy of DPIRD.

PREPAREDNESS IS KEY

While the Department is dedicated to improving emergency management arrangements, preparedness still remains a top priority. Preparedness involves initiating activities that help identify key biosecurity threats, and developing preventative and response strategies.

"The Department has adopted a biosecurity continuum approach with pre-border, border and post-border biosecurity strategies working together to minimise biosecurity risks," Dr Clift explained.

"We deliver a number of preparedness programs in areas such as surveillance and diagnostics, risk assessment, imports and exports, and legislation. These programs ensure that Western Australia is as prepared as possible for biosecurity incursions."

Examples of plant biosecurity preparedness programs include:

- Early warning surveillance: The Department has a number of proactive surveillance programs to ensure early warning of any new incursions of pests and diseases not found in Western Australia. These include activities as part of the National Bee Pest Surveillance Program (involving 'sentinel' hives placed at strategic locations in Western Australia); a Queensland fruit fly trapping grid across the entire metropolitan area (about 1,900 traps); a European wasp surveillance program; and a seasonal trapping and surveillance program in the south-east of the state for starlings.
- MyPestGuide™: A suite of tools, including a Reporter app, three pest identification field guides, a decision tool and a community website that allows the public to report any pest or disease signs instantly to the Department and receive a response within 48 hours.
- Biosecurity Blitz: A Western Australian event that runs annually. It is an opportunity for the community to help identify as many pests (plant and animal) as possible over the period of one month and report them through the MyPestGuide™ Reporter. This helps to inform and support Western Australia's pest-free status. In 2018, the Biosecurity Blitz was held between 19 October and 16 November and received 1,671 reports.
- Diagnostic Laboratory Service (DLS): A service for early diagnosis of endemic and notifiable diseases and specific disease testing for seed crops to meet export requirements.
- Pest risk analysis (PRA): Assessments to determine potential quarantine risks, to develop pre-border and border measures to minimise the risk of entry of pests and diseases to Western Australia.

INFO R&D

For more information on pest management strategies, visit dpird.wa.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.

WORKING TOGETHER TO REACH A COMMON GOAL

Biosecurity officers working for the Department undertake preparedness, regulatory and incursion response activities to support the state's agricultural industry. Major business-as-usual activities include rolling out surveillance programs, diagnostic services, seed testing and certification, animal and plant risk assessments, inspection services, research and education in best practice management.

The *Western Australia Biosecurity Strategy (2016-2025)*, which outlines management processes for emerging and ongoing biosecurity issues across the state, has an overarching vision for industry and community to also become involved in pest and disease management to work with government to minimise biosecurity risks.

"A proactive biosecurity system based on shared responsibilities relies on active participation from all people," Dr Clift said.

"The Department's focus is on preventing and responding to new incursions of declared pests and diseases, with industry and communities being responsible for the management of widespread and established declared pests. To this end, the Department provides all stakeholders with the support they need to become involved in the state's biosecurity systems."

RECOGNISED BIOSECURITY GROUPS CONTRIBUTE TO THE DEPARTMENT'S VISION

Recognised Biosecurity Groups (RBGs) are not-for-profit organisations managed by volunteers and regional representatives to take control of widespread and established declared pests that affect their communities the most.

They are formally recognised under the *Biosecurity and Agriculture Management Act 2007* and complement the efforts of landholders, who all have an obligation under the Act to control declared pests on their land.

"RBGs involve everyone in decision-making about activities and expenditure, which encourages communities to take ownership of pest management," Dr Clift said.

"RBGs can be established for the benefit of any agriculture industry, including horticulture. Each RBG has its own priority pest list and strategy for management activities."

Dr Clift explained that RBG activities are funded by declared pest rates collected from landholders in their areas. DPIRD supports RBGs by matching funds dollar-for-dollar and providing advice and guidance in areas such as engagement, operational planning, administration and governance.

For more information on RBGs in Western Australia, visit agric.wa.gov.au/rbg.

QUEENSLAND FRUIT FLY ERADICATION SUCCESS

Following a dedicated and extensive response program, the eradication of Queensland fruit fly (Qfly) was declared in Western Australia at the beginning of November 2018 and the state has reclaimed area freedom. There have been no further Qfly detections in the quarantine area since May 2018. *Vegetables Australia* provides an update.

The Western Australian Department of Primary Industries and Regional Development's (DPIRD) efforts have once again protected the state's horticultural industry from the devastating impact of Queensland fruit fly (Qfly).

Under the Australian Fruit Fly Code of Practice, the Department's response to the detection of male Qfly in the Perth suburb of Como in May 2018 was immediate. It involved the placement of supplementary traps within 200 metres of each detection point (Outbreak Zone) and commencing weekly baiting and surveillance of all host trees and plants within this area.

A Quarantine Area was established within a 1.5-kilometre radius of the detection points, and a 15-kilometre Suspension Zone was established. This suspended Qfly area freedom and prevented fruit within that area from being sold without treatment. Qfly area freedom for the remainder of Western Australia remained in pace throughout the response.

The Quarantine Area restrictions introduced in May 2018 – encompassing Como, South Perth, Karawara, Bentley and Kensington – have now been lifted, meaning that local people can now share their home-grown fruit and vegetables with others outside of the area.

A COLLABORATIVE APPROACH

DPIRD Plant Biosecurity Manager Darryl Hardie said the eradication campaign led by the Department was a concerted effort involving support from industry, local government, businesses, community gardens and groups, markets and local residents.

"During the baiting program, significant effort went into making direct contact with all residents within the Outbreak Zone to seek access to their properties to check for host plants/trees, and if needed to carry out ongoing bait spraying and surveillance," Dr Hardie said.

"Contact was made with 94 per cent (1,182 properties), and more than 3,500 baitings on 608 properties were carried out throughout the campaign.

"The willingness of residents to accommodate weekly visits from Department officers played a critical role in successful eradication."

Also critical to successful eradication was the participation of the community at large in complying with Quarantine Area restrictions on the movement and disposal of home-grown fruit and vegetables.

While baiting of properties close to the detections finished in August, the Quarantine Area period was extended until 2 November to take into account the winter months, when flies can become dormant.

Dr Hardie said this provided additional assurance that all efforts were being taken to achieve eradication.

"The Department appreciates that ongoing compliance with the Quarantine Area restrictions over such a long period was difficult, but this was a key factor in achieving this great outcome," he said.

"The Department and Western Australia's horticultural growers would like to acknowledge and thank everyone who cooperated and assisted with the outbreak."

POSITIVE OUTCOME

Western Australia is again free of Qfly and it is the sixth time since the 1980s that the Department has successfully eradicated this species.

"Thanks to the Department's permanent fruit fly trapping system of 1,900 traps across the Perth metropolitan area, all new outbreaks have been detected early – allowing the Department to act quickly. This early warning system helps Western Australia to prove area freedom from Qfly," Dr Hardie said.

"If Qfly was to become established in Western Australia, the impact on horticultural industries would be dramatic and devastating, and additionally it would make it difficult to grow backyard fruit and vegetables."

The Department is reminding everyone to be aware of the risk of new pests and diseases becoming established in Western Australia, and to keep a look out for unusual pests or plant damage.

Early detection of serious threats enables the Department to act quickly and ensure there is no spread of the pest.

INFO R&D

Pests or plant damage of concern in Western Australia can be reported via the MyPestGuide™ Reporter app or online – both are available from mypestguide.agric.wa.gov.au.

For further information about the eradication program, please contact the DPIRD Pest and Disease Information Service on 08 9368 3080.

L-R: vegetablesWA CEO John Shannon and vegetablesWA President Dan Kuzmicich.

WA GROWERS GATHER FOR INDUSTRY SUMMIT

From grower tours to keynote speaker sessions and an industry cocktail function, there was something for everyone at the vegetablesWA Grower Tour and Industry Summit. vegetablesWA Operations Manager Rebecca Blackman provided *Vegetables Australia* with a recap of activities across the two-day event.

There were a number of events on offer for growers who travelled from across Western Australia for the annual two-day vegetablesWA Grower Tour and Industry Summit.

Held from 25-26 October 2018, the Summit was an opportunity for growers to connect with one another and learn about the latest in R&D as well as think about how they can utilise the knowledge gained when they return to their businesses. It was a major event for vegetablesWA as part of the National Vegetable Extension Network (VG15043), a strategic levy investment under the Hort Innovation Vegetable Fund.

DAY ONE: FARM VISIT

The Summit began with a grower tour sponsored by Rural Bank and Bendigo Bank, with almost 50 delegates heading to Woodridge, around 70 kilometres north-west of Perth. Here, they visited the predominantly carrot growing operation Center West Exports and were able to view the packing facility as well as hear from engaging speakers about soil health and precision agriculture.

Center West Exports Managing Director Francis Tedesco and his team were very accommodating in showing everyone around the packing facility and explaining how it all worked. It was eye-opening to see the mechanisation and human power working together, from grading through to the palletising machine.

After the tour of the facility, delegates heard from soil health expert Dr Doris Blaesing from RM Consulting Group. Dr Blaesing has conducted soil trials on the Center West property for custom-made compost and the focus was on disease suppression; cavity spot; and maintaining organic carbon and structure in intensively cropped, sandy soils.

Next up was Queensland Department of Agriculture and Fisheries (DAF) Senior Development Horticulturist Julie O'Halloran who presented along with her team Celia van Sprang (DAF) and Angelica Suarez from the University of New England. The trio spoke about precision agriculture and provided insights into the current project running on the property, including ground truthing satellite images of crop variations and the yield monitor which is running on the harvester.

At the conclusion of the tour, there was a cocktail function for the growers attending the export workshop the following day as well as those who had attended the tour. This was a great way for everyone to get to know each other.

FORGING CONNECTIONS

Day two commenced with the HortConnectWA brunch, which was the first major event for the newly-formed group. HortConnectWA aims to bring together like-minded young horticulture professionals to engage in social and professional networking.

Following the brunch, the vegetablesWA Industry Summit commenced with emcee Di Darmody opening the event. With over 115 people in attendance, the room was packed with growers and industry eager to hear from the day's speakers.

The presentations started with a hot topic in Western Australia at the moment: water. There were speakers who focused on water use efficiency and its impact on soil health as well as water licence cost recovery fees. Following this, the focus took a detour into a more technical look at precision agriculture and how you can utilise it in your business.

After a short break, the topic shifted to food innovation and using waste products before moving straight into ag tech and how to robotise your packing area.

The afternoon sessions were completed with a networking function where growers, stakeholders and speakers where able to engage one-on-one.

vegetablesWA would like to thank Hort Innovation, the Agriculture Produce Commission – Vegetable Producers Committee and sponsors Rural Bank and Bendigo Bank Gingin, along with all of the growers and stakeholders who attended.

We have set the date for our events for next year so please keep 17-18 October 2019 free.

INFO R&D

For more information about the vegetablesWA Grower Tour and Industry Summit, please contact Rebecca Blackman at rebecca.blackman@vegetableswa.com.au.

Regional capacity building to grow vegetable businesses – WA (vegetablesWA) has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG15043

Hort Innovation Strategic levy investment | VEGETABLE FUND

Queensland vegetable grower Rob Hinrichsen discusses the on-farm composting process at Kalfresh during a farm tour as part of the Australian Biological Farming Conference and Expo.

REGENERATION: PRODUCTION WITH A PURPOSE

There is a growing need in the horticulture industry to have a healthy side-dish of sustainability with our food, and that is a good thing, writes AUSVEG Environment Coordinator Andrew Shaw, who recently attended and presented at the Australian Biological Farming Conference and Expo in Queensland.

What impact does food production have on the health of the consumer and the planet?

This question was discussed at the Australian Biological Farming Conference and Expo, held from 9-12 November 2018 on the Gold Coast. A passionate community shared their role as curators of soil and consumer health, championing the research and practical methods of their journey.

The headline speaker, Rodale Institute Executive Director Jeff Moyer from Pennsylvania in the United States, encouraged the audience to be proactive in telling their story. He highlighted millennial consumers' desire for positive health and sustainability stories through their food as an opportunity for agriculture producers.

"Doctors are at the back end of health care; farmers are the front line. Our role as farmers is to produce healthy people, not just healthy crops," Mr Moyer said.

This set the tone for the event, with speakers discussing research topics ranging from the health impacts of organic produce to beneficial microbiological soil ecology. The event included a broad range of speakers; trade show; networking sessions; field days; and workshops.

Kalfresh Agricultural Director Rob Hinrichsen delivered the opening address at the conference, noting that a transition into regenerative soil structure and biology techniques has run parallel to the company's commercial success. The key production practices focused on were controlled traffic farming, cover crops, Integrated Pest Management (IPM), biological fertilisers and composting. By managing the composting process on-farm, Rob has been able to produce nutrients to meet the specific needs of his crop.

Delegates also had an opportunity to witness the complexities of large-scale vegetable production during a visit to Kalfresh as well as Bauer's Organic Farm, one of Australia's first certified organic vegetable farms.

At the demonstration sites, growers discussed the many benefits of self-producing compost to control nutrient inputs; cover cropping to reduce tillage and chemical use practices; and the positives of natural, healthy soil-microbe-plant-bug ecosystems on farm. This included a discussion at Bauer's Organic Farm on the use of Lablab (*Lablab purpureus*) as a nutrient-rich cover crop for potato production in-lieu of fertiliser.

SUSTAINABLE CONNECTIONS

There was also a breakout session on transitioning to IPM in large-scale vegetable production, comprising consultants and entomologists from Toowoomba and Bowen. I was also part of this panel to discuss the EnviroVeg program, which enables growers to improve sustainable practices and provides a pathway to be recognised. *The EnviroVeg Program 2017-2022* (VG16063) is a strategic levy investment under the Hort Innovation Vegetable Fund.

EnviroVeg is developing a user-friendly online platform, training and robust certification that leads to branding and a platform for storytelling. Through a national pilot involving growers and the practical extension of expertise, tangible benefits are to be delivered to growers and industry.

I strongly encourage any growers who are interested in furthering their sustainable practices and using this to drive demand for their business to become involved in EnviroVeg.

INFO R&D

For more information about the Australian Biological Farming Conference and Expo, please visit australianbiologicalfarmingconference.org.

More information about the EnviroVeg Program can be found at enviroveg.com.au or by emailing Andrew Shaw at andrew.shaw@ausveg.com.au.

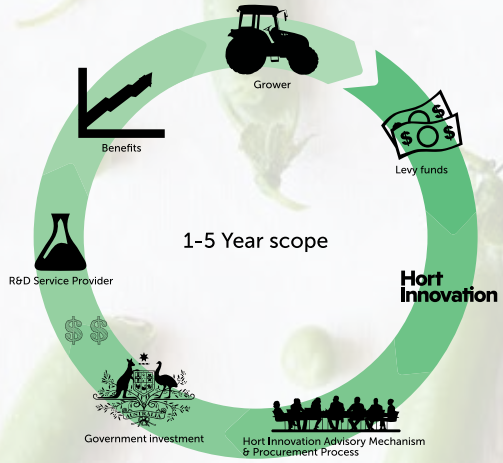
EnviroVeg has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government.

Project Number: VG16063

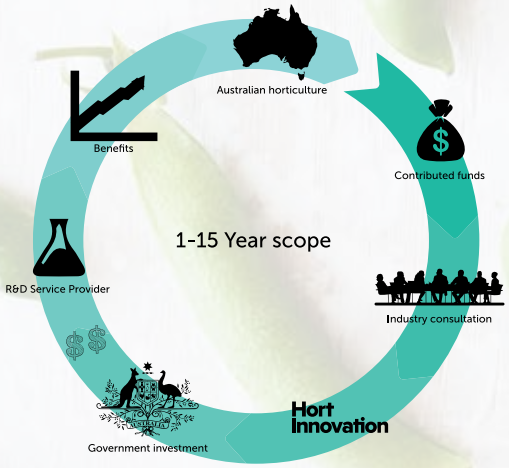
Hort Innovation Strategic levy investment | VEGETABLE FUND

THE VEGETABLE R&D LEVY AT WORK

STRATEGIC LEVY INVESTMENT



HORT FRONTIERS



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/grower-focus/vegetable.**

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

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

HOW CAN GROWERS GET INVOLVED?

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

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

Hort Innovation | VEGETABLE FUND

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

UPDATE ON VEGETABLE LEVY INVESTMENT

NEW INVESTMENTS 2017/18

PROJECT NUMBER	PROJECT TITLE
VG15068	Improving safety of vegetable produce through on-farm sanitation, using electrolysed oxidising (EO) water
VG16031	VegPRO sub-project: AusChem chemical accreditation level 3
VG16031	VegPRO sub-project: VegInnovations 2018 regional roadshow
VG16031	VegPRO sub-project: Chemical handling for vegetable crops
VG16031	VegPRO sub-project: Basic irrigation skills workshops
VG16037	Novel topical vegetable, cotton virus and whitefly protection
VG16042	Pathogen persistence from paddock to plate
VG16062	Field and landscape management to support beneficial arthropods for IPM on vegetable farms
VG16064	Tools and interventions for increasing children's vegetable knowledge
VG16068	Optimising cover cropping for the Australian vegetable industry
VG16071	Boosting vegetable consumption through diet
VG16075	Monitoring and evaluation of vegetable consumer data projects
VG16078	Soil wealth and integrated crop protection – phase 2
VG16080	Vegetable digital asset redevelopment – Veggycation
VG16081	Vegetable market price reporting pilot program – market data
VG16084	Vegetable market price reporting pilot program – reporting
VG16085	Export facilitators
VG16086	Area wide management of vegetable diseases: viruses and bacteria

PROJECT NUMBER	PROJECT TITLE
VG17000	Vegetable business benchmarking
VG17003	National Vegetable Protected Cropping Centre
VG17004	Vegetable knowledge transfer at the 2018 International Spinach Conference
VG17006	Strategic review of the Australian vegetable industry's extension and training programs
VG17013	Building the business case to grow domestic demand for vegetables in Australia
VG17014	Review of issues and options for preventing and removing redback spiders in broccoli
MT17010	World of Perishables, Dubai – Taste Australia attendance
MT17012	Minor use permit renewals
MT17017	Vegetable cluster consumer insights program* *This multi-industry investment replaced another new investment for the financial year 2017/18: Vegetable consumer insights program (VG16069).
MT17022	10th Australasian Soilborne Disease Symposium sponsorship
PH16000	Stingless bees as effective managed pollinators for Australian horticulture
ST17000	Generation of data for pesticide applications in horticulture crops 2018

ONGOING INVESTMENTS

PROJECT NUMBER	PROJECT TITLE
VG13072	Export opportunities for carrots, sweet corn, beans, broccoli and baby leaf – symposia
VG14065	Nuffield scholarship
VG15002	Advanced stable fly management for vegetable producers
VG15003	Using autonomous systems to guide vegetable decision making on-farm
VG15004	VegNET – Bowen Gumlu and Far North Queensland
VG15009	Improving soilborne disease diagnostic capacity for the Australian vegetable industry
VG15010	A multi-faceted approach to soilborne disease management
VG15013	Improved management options for cucumber green mottle mosaic virus
VG15020	Strengthened biosecurity for the Australian vegetable industry – stage 2
VG15021	Sowing success through transformational technologies
VG15024	Vision systems, sensing and sensor networks to manage risks and increase productivity in vegetable production systems
VG15027	Vegetable industry communication program 2016-2019
VG15028	Vegetable industry education and training initiative (known as 'VegPRO')
VG15030	Growing Leaders
VG15032	Global Innovations in Horticulture Seminar
VG15034	Facilitating adoption of IPM through a participatory approach with local advisors and industry – training component
VG15035	Facilitating adoption of IPM through a participatory approach with local advisors and industry – coordination component

PROJECT NUMBER	PROJECT TITLE
VG15036	Facilitating adoption of IPM through a participatory approach with local advisors and industry – evaluation component
VG15037	Optimising the benefits of vermiculture in commercial-scale vegetable farms
VG15038	Investigating novel glass technologies and photovoltaics in protected cropping
VG15039	Precision seeding benefits for processing pea production
VG15040	VegNET – Wide Bay Burnett
VG15041	VegNET – Lockyer Valley and SE Queensland
VG15042	VegNET – NSW
VG15043	VegNET – WA
VG15044	VegNET – NT
VG15045	VegNET – SA
VG15046	VegNET – Tasmania
VG15047	VegNET – Gippsland
VG15048	VegNET – Victoria (South-East, West and Northern regions)
VG15049	VegNET – national coordination and linkage project
VG15054	Data analytics and app technology to guide on-farm irrigation
VG15059	Evaluating and testing autonomous systems developed in VG15003 in Australian vegetable production systems
VG15064	Improved management of pumpkin brown etch
VG15065	Review of the National Biosecurity Plan for the Vegetable Industry
VG15066	Improved knowledge of factors contributing to carrot rot
VG15067	Development of a vegetable education resource – stage 2

UPDATE ON VEGETABLE LEVY INVESTMENT

ONGOING INVESTMENTS

PROJECT NUMBER	PROJECT TITLE
VG15070	A strategic approach to weed management for the Australian vegetable industry
VG15076	Creating value from edible vegetable waste
VG15077	Financial performance of Australian vegetable farms 2016-2017 to 2018-2019
VG16005	ProbiSafe – developing biocontrol agents to inhibit pathogen growth
VG16009	Adoption of precision systems technology in vegetable production
VG16020	Vegetable industry minor use program
VG16023	A review of leadership across the RDC landscape
VG16031	VegPRO sub-project: PMA A-NZ Produce Executive Program scholarships
VG16060	Vegetable agrichemical pest management needs and priorities
VG16061	Vegetable industry export program
VG16063	The EnviroVeg Program 2017-2022
VG16067	Impact of pesticides on beneficial arthropods of importance in Australian vegetable production
VG16070	Research and operations to trial innovative glass and photovoltaic technologies in protected cropping
LP15001	Global Masterclass in Horticultural Business
LP15006	Attracting new entrants into Australian horticulture – promoting careers in horticulture
MT13059	SITplus: Developing and optimising production of a male-only, temperature-sensitive-lethal, strain of Qfly, *B. tryoni*
MT14052	Essential market access data packages
MT16004	RD&E program for control, eradication and preparedness for vegetable leafminer
MT16005	Enhanced National Bee Pest Surveillance Program
MT16010	Horticultural trade data 2017-2019
MT16011	Horticulture trade intelligence reporting 2017-2019
MT16018	National tomato potato psyllid (TPP) program coordinator
ST16006	Generation of residue, efficacy and crop safety data for pesticide applications in horticulture crops 2017
ST16008	AgVet collaborative forum

INVESTMENTS COMPLETED IN 2017/18

PROJECT NUMBER	PROJECT TITLE
VG12083	Understanding the nature, origins, volume and values of vegetable imports
VG13004	Innovating new virus diagnostics and planting bed management in the Australian sweetpotato industry* *This project was funded by the vegetable levy in years previous to 2017/18. Its final year was funded by the recently established sweetpotato R&D levy.
VG13044	New end-point treatment solutions to control fruit fly (2)
VG13076	Soil condition management – extension and capacity building
VG13078	Extension of integrated crop protection information
VG13083	Identifying and sharing post-harvest best practice on-farm and online
VG13092	Improved skill for regional climate in the ACCESS-based POAMA model
VG13101	Effective management of parsley summer root rot

INVESTMENTS COMPLETED IN 2017/18

PROJECT NUMBER	PROJECT TITLE
VG14010	Management and detection of bacterial leaf spot in capsicum and chilli crops
VG14039	Generation of residue data for pesticide minor use permit applications in vegetable crops
VG14062	Process improvements for preserving peak freshness in broccoli (2)
VG14063	Innovative solutions for management of tospoviruses of vegetable crops
VG15023	Consultancy services for strengthened biosecurity for the vegetable industry – phase 2 (VG15020)
VG15050	Regional capacity building to grow vegetable businesses (VegNET) – training and evaluation
VG15071	Understanding consumer triggers and barriers to consumption of Australian indigenous vegetables and Asian vegetables
VG15073	Characterisation of a carlavirus of French bean
VG15074	Export development of Australian vegetables to Japan
VG15701	2016-18 European Industry Leadership and Development Mission – Berlin Fruit Logistica
VG15702	USA Industry Leadership and Development Mission 2016-2018
VG15703	Vegetable Young Grower Development Mission and Women's Development Missions
VG16011	Improving processing vegetable yields through improved production practices
VG16016	Market opportunity for vegetable juices
VG16018	Educational opportunities around the perceptions and aversions to vegetables through digital media
VG16019	Removing barriers of food safety certification for vegetable exporters though GLOBALG.A.P. co-certification

PROJECT NUMBER	PROJECT TITLE
VG16024	Gap analysis and economic assessment for protected cropping vegetables in tropical Australia
VG16025	Increasing consumption and sales by developing community awareness and benefits of vegetables
VG16026	Addressing vegetable consumption through foodservice organisations (chefs, TAFEs and other training institutions)
VG16028	On farm evaluation of vegetable seed viability using non-destructive techniques
VG16031	VegPRO sub-project: Developing valued, visible vegetable products
VG16031	VegPRO sub-project: VegWHS training resources
VG16031	VegPRO sub-project: Negotiation and influencing workshops
VG16031	VegPRO sub-project: Horticulture Code of Conduct workshops
VG16031	VegPRO sub-project: Veg inductions
VG16059	Retailer alignment regarding the use of manures in vegetables
VG16066	Mid-term review of the vegetable and potato communication projects
VG16079	China insights data for the Australia vegetable industry
VG16083	Gap analysis for the next generation of protected cropping in vegetables
MT15032	Monitoring and evaluation framework for the industry Strategic Investment Plan
MT15033	Strategic Investment Plan
MT16016	Surveillance of tomato potato psyllid in the Eastern States and South Australia

During the 2017/18 financial year, all Australian levy paying horticulture industries also contributed to across-industry projects addressing issues that affect horticulture as a whole. Visit horticulture.com.au/across-horticulture for financial documents and information on this program.

AROUND THE STATES

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"We'll all be rooned," said Hanrahan,
In accents most forlorn,
Outside the church, ere Mass began,
One frosty Sunday morn.

The congregation stood about,
Coat-collars to the ears,
And talked of stock, and crops, and drought,
As it had done for years.

"It's looking crook," said Daniel Croke;
"Bedad, it's cruke, me lad,
For never since the banks went broke
Has seasons been so bad."

"It's dry, all right," said young O'Neil,
With which astute remark
He squatted down upon his heel
And chewed a piece of bark.

And so around the chorus ran
"It's keepin' dry, no doubt."
"We'll all be rooned," said Hanrahan,
"Before the year is out."

Said Hanrahan has been one of my favourite Australian bush poems since I was in primary school. It goes on to detail how the drought broke and all of the resulting grass created a bushfire risk where they'd all be rooned before the year is out. First published as part of an anthology, *Around the Boree Log* in 1921 by John O'Brien, the pen name of Catholic priest Patrick Joseph Hartigan, nearly a century later it's amazing how much has changed in rural industries, but how much has also stayed the same.

As an industry it's really easy to always focus on the negative. However, there are also some really good things happening which we should also take the opportunity to dwell upon. Our first year of benchmarking data shows us that the average of the top 25 per cent of growers are making a Return on Capital of 19 per cent. This shows that there are some extremely profitable grower businesses and there are concrete steps other growers can take to emulate this success.

The state and federal governments are making real investments in irrigation infrastructure in Western Australia. We're seeing new opportunities for growers in the Collie Water and Carnarvon districts for example, in addition to new projects in our far north.

The Federal Government has made some initial changes to the visa system to help growers better access labour. While these might not all be helpful, we've got the prospect of further improvements. Industry, governments and unions are discussing these issues together for the first time.

After a terrible time following the tomato-potato psyllid incursion, Western Australian potatoes have just regained market access to South Australia.

Exports of Western Australian vegetables have soared over the last 12 months, leading to significant growth of the industry according to the latest government data.

vegetablesWA continues to provide a range of services to our members, including quality assurance, R&D extension, benchmarking and export development in addition to the advocacy and lobbying we undertake on our members' behalf. If you're not engaged with our programs please do contact us to find out more.

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VGA trading as AUSVEG VIC

AUSVEG VIC has launched its Energy Efficiency Calculator on the AUSVEG VIC website. The Energy Efficiency Calculator enables growers to assess their energy consumption in different areas of their business, ranging from refrigeration, lighting, process, irrigation and hot water. A grower is then able to look at suggested solutions for each area of their business and become more energy efficient and reduce their energy spend.

As we start a new year, there are a few dates for Victorian growers to save into their calendar – starting with the annual AUSVEG VIC Awards for Excellence which will be held at Kooyong Tennis Club on Friday 3 May.

An opportunity not to be missed by Victorian growers is Hort Connections 2019, which is being held from 24-26 June at the Melbourne Convention and Exhibition Centre. This will give Victorian growers a fantastic opportunity to attend and discover new technology while hearing from leading local and international speakers.

The Victorian Labour Hire Licensing Scheme will be enacted in 2019, and growers should be thinking about whether or not their current labour hire contractor is going to comply with the new laws that will be enforced.

AUSVEG VIC is looking forward to working with growers throughout 2019.

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An October announcement of changes to visa arrangements for backpackers and seasonal labour delivered a big win for horticulture in New South Wales.

Lifting the cap on working holiday maker places, and the Seasonal Worker Programme, will give Australian farmers greater access to seasonal labour during harvest and other peak periods. Having access to a productive workforce is essential to our desire to grow the value of Australian agriculture to $100 billion by 2030.

We acknowledge that the Federal Government has listened to the concerns of industry and developed a response in line with industry demands. We will continue to lobby for an Agricultural Visa to manage the longer-term needs of the sector, but for now, the changes will help us manage the pressing labour challenges of the sector.

Australian farmers always prefer to engage local workers when they are available; however, locals don't always apply. Where the government wants to see long-term unemployed engaged in farm work, they should support the grower to provide skilling and training opportunities to aid the productivity not just of the farm, but most importantly the farm worker. We anticipate further detail from the government about the process of engaging a productive local workforce.

There are many different jobs to be done on a farm, and some farms operate with a small staff for 90 per cent of the year. However, when the harvest is on, it is all hands on deck. It is important that we are focused on productivity and getting the job done quickly and safely.

NSW Farmers looks forward to working with Growcom to develop the Fair Farms Initiative. This scheme is yet another example of what can be achieved when the sector, united, works to achieve a common goal.

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This *Around the States* report provides a positive outlook for Tasmanian growers. Pea harvest has commenced after a record dry September and October, with some crops affected by a series of frosts in late October. This has contributed to varying yields and quality throughout the north-west of the state, but it is very early in the harvest season.

Rain in recent weeks has transformed the countryside dramatically for all crops in comparison to what was experienced during spring, where most growers commenced irrigation very early from farm storages or by accessing their district irrigation schemes. The current position for the season is very positive.

Early processing potato crops are looking good in most districts. Later planted crops have started to emerge well, with seed potato growers concluding their planting program very soon. Early processing potato growers will prepare for harvest around late January.

All conversations show high quality potato seed being planted throughout the season. This has contributed to an effective industry-wide virus detection program as well as more advanced seed handling and cold storage systems being constructed.

While pea planting is completed, bean planting is in full swing and again growers are assisted by well-timed rain events and improved soil moisture profiles. At this early stage of the growing and harvest season, it is shaping up to be an above average year in terms of yield and quality, which is attributed to decent rainfall events and the continued investment that producers and contractors have put into on-farm irrigation systems, water entitlements, new machinery, technology and soil health.

The recent price spike in fuel reveals how vulnerable growers are in terms of its effect on gross margins. Coupled with an ancient formula on electricity pricing in Tasmania, these two inputs can soon have a dramatic effect on our bottom line as our irrigation systems are electric and/or diesel, with very little hope of recouping higher input costs from the processor or the market place.

On the export front, various packers are again looking forward to excellent Tasmanian produce being available to showcase to established markets for carrots and onions.

AROUND THE STATES

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In a win for common-sense, Queensland farmers now have clear right to create composts and other organic products on their own farms.

After a three-year review of the regulated waste classification and the waste-related Environmentally Relevant Activity frameworks, the Queensland Department of Environment and Science has finally amended legislation to allow farmers to legally manufacture organic composts on-farm. The decision follows continued advocacy by the Queensland Farmers' Federation (QFF), of which Growcom is a member, on behalf of peak state and national agriculture industry organisations.

While most growers may not have even realised they were potentially breaking the law with something as beneficial as composting (if producing more than 200 tonnes per year), it took significant effort from QFF to get this issue resolved after a Growcom member was threatened with a fine for composting without an Environmental Authority from the State Government.

The horticulture industry recognises the need to improve soil structure and supply organic nutrients to grow a healthy crop. For years farmers have been amending their soils and improving soil quality through the application of their own manufactured quality compost products. However, the sector has never had a clear exemption for the manufacture of these composts on-farm until now.

Composts and organic products can help farmers to meet sustainability outcomes associated with best management practice. They help to build natural soil fertility which can lead to a reduction in the use of inorganic fertilisers. They are a win-win for farmers and the environment, reducing input costs and minimising the use of chemicals. Because of this, Growcom welcomes the new farm compost exemption as the obvious answer to what is a common-sense activity.

In particular, we thank QFF for leading the charge in advocacy to amend the legislation so farmers can legally manufacture compost for use on their own farms.

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While I am writing this column, Cyclone Owen is tracking back across the Gulf of Carpentaria at category 3 and strengthening. Communities around the Gilbert River mouth on the Gulf Coast in Queensland are bracing themselves for an impact. This will bring much-needed rain to the Gulf country of Queensland, but it may also bring destructive winds and flooding. Meanwhile, the Top End of the Northern Territory is sweltering and praying for rain – such an Australian story.

The services provided by the Bureau of Meteorology (BOM) at this time of the year are priceless. Firstly, in the weather monitoring of events such as cyclones and thunderstorms but also by interpreting the climate models that give us a good look at the next week to 10 days here in the tropics. The Top End vegetable growers have all packed it in now except for a few die-hard bitter melon and okra growers.

The NT Government is undertaking a solid program of legislative reform around Environmental Protection, the *Water Act*, land clearing regulations and other legislation. There is an expectation on the industry associations to respond and comment on draft and position papers. This is great in that it gives industry a chance to look at drafts and highlight any obvious negative implications, but is also very difficult to ensure that all the possible nuances of legislative changes have been considered. Often these are large and complex documents and it's easy to miss something.

One of the benefits of a small jurisdiction such as the Northern Territory is a great willingness to share information between the industry associations and to communicate obvious major issues quickly. The Northern Territory Business Council, of which we are a member, recently highlighted a serious issue with one draft piece of legislation and, with the full weight of all the industry associations, had the section of the draft removed. These alliances are extremely valuable to all of our industries.

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AUSVEG SA recently partnered with South Australian logistics company Symons-Clark to secure B-quad road train access for growers along Taylors Road in Virginia. This is a first for the Northern Adelaide Plains region and has the potential to drive significant logistics and transport savings for affected businesses. It also has the potential to be made available more broadly within our industry.

Key benefits for growers include:

- Less overall movements within a business.
- Higher capacity trucks and significant freight savings.
- Integrated logistics support from Symons-Clark to ensure maximum efficiencies are achieved for a business.

Increased access for B-double and B-quad road trains has been an issue for many large horticultural enterprises across the region and state but despite past efforts, progress has until now been largely stagnant on this issue.

In partnering with Symons-Clark with its specialised knowledge and expertise in logistics and transport approvals, AUSVEG SA has been able to work with local growers and achieve the first approval for the region.

Symons-Clark recently came on board as an AUSVEG SA Corporate Partner to work with growers throughout the state who were interested in pursuing B-quad road train access to their properties and integrated logistics solutions as a way to save considerable amounts on their freight and handling costs.

AUSVEG SA is also happy to advocate on behalf of growers and support any future applications.

Interested growers should contact either the AUSVEG SA CEO Jordan Brooke-Barnett on 0404 772 308 or Jason Clark from Symons-Clark on 0408 880 522.

MINOR USE PERMITS

PERMIT NUMBER	CROP	PESTICIDE GROUP	ACTIVE	PEST/ PLANT DISEASE/ TARGET WEED	DATE ISSUED	EXPIRY DATE	STATES
PER86482	Taro	Fungicide	Thiabendazole	Post-harvest rots and moulds	04-Dec-18	31-Dec-21	All states except Vic
PER86599	Celery	Insecticide/ miticide	Bifenthrin	Red legged earthmite	13-Dec-18	31-Dec-23	All states except Vic
PER10918 VERSION 3	Carrot, leafy lettuce, silverbeet and spinach	Insecticide	Imidacloprid	Greenhouse whitefly and aphids (refer to the product label for more information)	30-Jun-15	31-Dec-23	All states
PER86245	Sweet corn	Fungicide	Azoxystrobin/ tebuconazole	Maize rust	17-Dec-18	31-Dec-23	All states except Vic
PER14696 VERSION 3	Head lettuce (field grown only)	Miticide/ insecticide	Abamectin	Two-spotted mite	01-Apr-14	31-Dec-23	All states except Vic
PER86665	Carrots	Insecticide	Fipronil	White fringed weevil, symphylids	04-Jan-19	31-Jan-22	All states except Vic

Hort Innovation is the permit holder for all permits listed. All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at: apvma.gov.au/permits/search.php. This communication has been funded by Hort Innovation using the vegetable research and development levy and contributions from the Australian Government. Project Number: VG15027.

HORT CONNECTIONS

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