

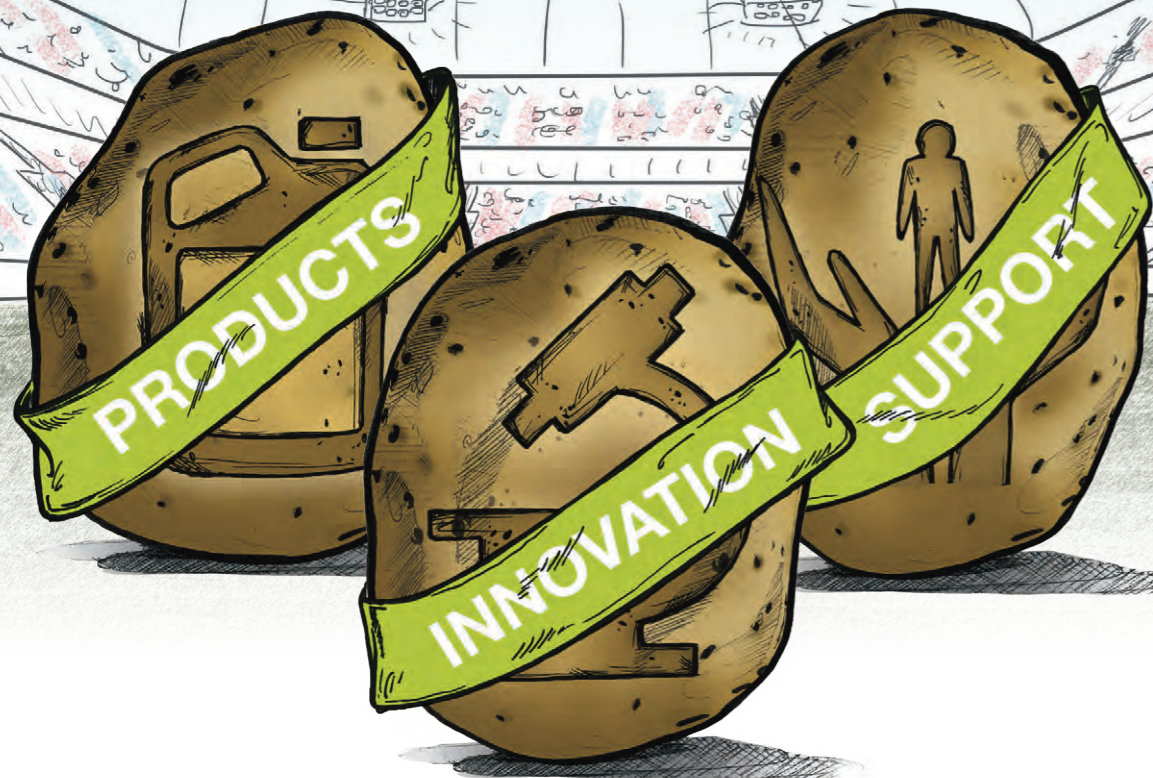
potatoes

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EDITORIAL

You may be wondering why recent editions of *Potatoes Australia* have taken a trip down memory lane to report on previous R&D projects funded by the potato levies, some of which are more than 20 years old.

Bear with us – there is some method to our madness. While it is important to continually invest in new research that tackles issues that threaten the future productivity, profitability and sustainability of the Australian potato industry, it is also important to reflect on the past and see what has already been achieved to avoid reinventing the wheel.

Our thought process behind covering these old projects in the magazine is not only an attempt to make use of valuable, levy-funded research that too easily lays forgotten in the archives of the internet, but also to see how far we've come as an industry in a relatively short amount of time.

In this edition we take a look back at two R&D projects that were conducted over 20 years ago, which focus on common scab (page 24) and soil insect pests of potatoes – namely the whitefringed weevil and the African black beetle (page 34).

It's true that these issues continue to cause some headaches for potato growers across the country, yet a common theme came up during both interviews with the researchers who

worked on the projects. When you consciously take a moment to reflect on where the Australian potato industry was two decades ago, it is somewhat comforting to learn how the industry has progressed since that time – through key research findings, tried and tested approaches to management and developing grower mindsets – to ensure that these issues are no longer as prevalent as they once were.

So if you think that investment in levy-funded research has no long-term benefits, stop to think about the countless research that has already been conducted for the potato industry and the benefits it has provided to growers. It helps us to appreciate exactly how far the industry has come, and how it is continually evolving and developing as time progresses.

We will continue to look back through the archives to see what other potato research has been conducted in the past and what topics are relevant to today's potato growing operation. If there is a particular topic or research project that you would like to see covered, please contact the *Potatoes Australia* editorial team on 03 9882 0277 or email communications@ausveg.com.au. In addition, we'd love to hear your feedback to ensure that we are including the stories and research that you want to read about.



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This project *Potato Industry Communications Program 2016-19* (PT15007) is a strategic levy investment under the Hort Innovation Fresh Potato Fund. Communication of research and development projects has been funded by Hort Innovation using the fresh potato research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture. *Potatoes Australia* is produced by AUSVEG Ltd and is free for all national potato levy payers.

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As we go to print with this edition, there is still no sign of a long-term solution to the agriculture industry's chronic labour shortage from the corridors of Canberra.

The fact remains that the Australian horticulture industry cannot access enough workers to harvest our crops throughout the year, an issue that is particularly clear as we approach the busy summer period.

Forecasts from the Australian Farm Institute at the start of the decade estimated the worker shortage for the agriculture industry at 100,000 – a figure that is most likely higher today.

AUSVEG is calling on the Federal Government to agree to a long-term solution that will alleviate this problem. While Australian growers will always have a preference to hire local workers, the reality is that there are insufficient numbers of these Australian workers in regional communities, or an unwillingness to perform laborious tasks that are necessary on a farm.

Given this, the proposal of an agricultural visa is one such solution that will cater to the urgent needs of our industry.

This type of visa would also complement existing labour programs such as the Seasonal Worker Programme and provide a reasonable pathway for people who want to do the work (be they foreign or local) to be easily able to do so.

One thing is clear – we can no longer afford inaction or political infighting to impede our access to labour and a solution for hard-working growers.

In other industry news, I had the pleasure of attending the 2018 AuSPICA Potato Industry Conference alongside our CEO James Whiteside in August. The conference presented us with the opportunity to not only introduce ourselves to our stakeholders and the growers that we represent, but to address the most important issues affecting the industry.

The panel discussion incorporating the theme *Make potatoes great again* was the perfect platform to address those bigger-picture issues and present ideas around how we, as an industry, can band together to brainstorm solutions. It was also interesting to hear from international experts including Dr Steve Johnson from the University of Maine and Potatoes New Zealand CEO Chris Claridge, who spoke about their experiences in dealing with pest and disease issues overseas.

As a vegetable grower, attending this conference was a valuable way for me to gain a greater understanding of the potato industry and the current challenges our growers are facing. I would like to thank AuSPICA for hosting us and look forward to continue working with Dr Nigel Crump and his team, along with growers, researchers and the wider industry to achieve common goals that will ultimately benefit the long-term sustainability of the Australian potato industry.



Bill Bulmer

Bill Bulmer
Chairman
AUSVEG



James Whiteside

James Whiteside
CEO
AUSVEG

I am pleased to announce that AUSVEG is working out of a new location to support the Australian potato and vegetable industries.

While our phone and fax numbers remain the same, our street and postal address is now 3 Glenarm Road, Glen Iris VIC 3146. If you haven't already, please update your address books to reflect this change.

AUSVEG invited the potato and vegetable industries to our new home on Monday 17 September for an official office opening. This was a well-attended event that coincided with a joint meeting of the Strategic Investment Advisory Panels for the vegetable industry, and I would like to thank everyone for coming along. I look forward to watching our business progress through this next chapter and welcome anyone wanting to see our new office to get in touch.

In other news, AUSVEG has welcomed the finalisation of the Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA), which will prove beneficial to many potato growers who are looking to export their produce. The IA-CEPA will create the framework for a new era of closer economic engagement between Australia and Indonesia and improve two-way trade between the countries.

This free trade deal reflects Indonesia's status as Australia's fourth most important agriculture market and our 13th largest trading partner overall. In the 2017-18 financial year, Australian vegetable exports to Indonesia were valued at \$3.7 million, with potatoes accounting for nearly half of this total. Through the finalisation of this deal, potatoes will have an increased import quota of 10,000 tonnes per year, growing to 12,500 tonnes per year after five years with a decreasing tariff schedule during this time. Meanwhile, carrots will have an increased import quota of 5,000 tonnes per year, growing to 10,000 tonnes per year after 10 years with a decreasing tariff schedule.

Given Indonesia's developing population and its proximity to Australia, this market has strong potential for local growers to boost their fresh potato and vegetable exports. The agreement to increase import quotas and decrease tariffs for potato and carrot exports – two of the Australian vegetable industry's key export crops – should lead to an immediate increase in the trade of these commodities to Indonesia.

It is imperative that we explore the opportunities to send our high-quality produce to international markets such as Indonesia, and the industry is working hard to ensure growers have the necessary tools to be successful in the exporting process through inbound and outbound trade missions that allow buyers from key export markets to see our quality produce first-hand.

Trade agreements such as the IA-CEPA help to provide our industry with confidence that it can continue to prosper through developing export markets, which in turn helps to secure our profitability and competitiveness into the future.



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IMPORTANT CHANGES TO VEGETABLE AND UNPROCESSED POTATO LEVIES FROM 1 OCTOBER 2018

There are changes to the Emergency Plant Pest Response levies that came into effect from 1 October 2018 to pay industry's share of costs to the tomato-potato psyllid biosecurity response and a 12-month Transition to Management program.

From 1 October 2018, the Emergency Plant Pest Response (EPPR) component of the vegetable and unprocessed potatoes levies and charges changed from:

- Nil to 0.01 per cent of the amount paid at the first point of sale for vegetables; and
 - Nil to 10 cents per tonne for unprocessed potatoes.
- The funds raised through the EPPR levy will be used to pay industry's share of costs to the tomato-potato psyllid biosecurity response and a 12-month Transition to Management program. Once the required funds have been accrued, the EPPR levy rate will return to nil for both vegetables and unprocessed potatoes.

The below table details the changes to the overall levy rates for vegetables and unprocessed potatoes that have taken place from 1 October 2018.

The new rate will need to be used when calculating your quarterly return for the October to December period.

If you are eligible to lodge an annual calendar year return, you will need to use the following rates for all vegetables and unprocessed potatoes sold from **1 January to 30 September 2018**:

- 0.50 per cent of sale value for vegetables; and
- 50 cents per tonne rate for all unprocessed potatoes.

You will need to use the following rates for all vegetables and unprocessed potatoes sold from **1 October to 31 December 2018**:

- 0.51 per cent of sale for vegetables; and
 - 60 cents per tonne rate for all unprocessed potatoes.
- GST does not apply to Australian Government levies and charges.

INFORMATION ON THE UNPROCESSED POTATO LEVY AND CHARGE

You can access information about the unprocessed potato levy and charge on the Department of Agriculture and Water Resources website: agriculture.gov.au/ag-farm-food/levies/rates/potato.

WHO CAN I CONTACT IF I HAVE QUESTIONS ABOUT THIS NOTICE?

If you have any questions about the unprocessed potato levy and charge, your levies account or how to lodge your return, please contact the Levies Helpdesk on 1800 020 619 or at levies.management@agriculture.gov.au.

	LEVY COMPONENT	RATE FROM 1 JANUARY TO 30 SEPTEMBER 2018	RATE FROM 1 OCTOBER 2018
UNPROCESSED POTATOES	EPPR	nil	10 cents per tonne
	Research and Development	48 cents per tonne	48 cents per tonne
	Plant Health Australia	2 cents per tonne	2 cents per tonne
	Total	50 cents per tonne	60 cents per tonne
VEGETABLES	EPPR	nil	0.01% of sale value
	Research and Development	0.485% of sale value	0.485% of sale value
	Plant Health Australia	0.015% of sale value	0.015% of sale value
	Total	0.50% of sale value	0.51% of sale value



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AUSTRALIA DECLARES AREA FREEDOM FOR CANDIDATUS LIBERIBACTER SOLANACEARUM (CLSO)

After ongoing surveillance and testing, Western Australia has issued a certificate for area freedom from *Candidatus Liberibacter solanacearum* (CLso), the bacterium vectored by the tomato-potato psyllid. If relevant jurisdictions accept the certificate, market access for potatoes and vegetables from Western Australia will be reinstated. National TPP Coordinator Alan Nankivell explains.

In February 2017, the vector for *Candidatus Liberibacter solanacearum* (CLso), tomato-potato psyllid (TPP), was found in the Perth region of Western Australia. From the current international experience of TPP it was expected that CLso, which causes zebra chip disease, would also be present.

As there was no routine monitoring for TPP taking place, a system of yellow sticky traps was deployed to ascertain the geographical spread of TPP. Within weeks it was found that the spread was extensive and under the Emergency Plant Pest Response Deed (EPPRD), it was agreed by regulatory and industry stakeholders to move to a Transition to Management (T2M) process. A significant component of the T2M was further trapping and testing of TPP for CLso.

During the spring/autumn growing season, traps were deployed and found a level of sampling and detection of 99 per cent level of confidence at one per cent prevalence. In spring 2017, a total of 26,809 TPP were captured from 1,013 properties, at which 4,135 yellow sticky traps were deployed. A sample of 6,348 TPP were tested for CLso, and there were no positive detections. A total 3,169 TPP were captured in autumn 2018 from 425 properties, with 1,472 traps deployed. A sample of 2,265 TPP was tested for CLso, and again no TPP tested were positive for CLso.

Secondary testing by an independent interstate laboratory of a random sample of the original tests validated the original results that no CLso was detected.

This finding that CLso was not known to be present is significant. It appears to be the first time anywhere in the world where TPP has been found but CLso has not.

MARKET ACCESS DISCUSSION

In July 2018, the National Management Group (which is made up of representatives of all the affected parties) accepted the findings of the TPP surveillance and tests carried out during the T2M.

On 6 August, the Western Australian Department of Primary Industries and Regional Development (DPIRD) issued a certificate for area freedom from CLso. The certificate has been sent to all jurisdictions seeking to reinstate market access for potatoes and vegetables from Western Australia to the eastern states. At the time of writing, DPIRD was waiting on responses from the

other jurisdictions. With the next growing season (2018/19) to commence in October, growers are having to make commercial decisions based on market access from the other jurisdictions.

With no CLso found, the area freedom status is unique in the world. Australia is now considered endemic with TPP but not with CLso. By the very geographical nature of Australia, ongoing monitoring of TPP is essential to know where it is and where it isn't.

CONTINUED MONITORING AND SURVEILLANCE

Western Australia and all other jurisdictions are undertaking surveillance again this coming season. In particular, Western Australia will be conducting trapping to determine the reach of TPP and presence/absence of CLso, whilst other jurisdictions will be trapping to determine presence/absence of TPP in the first instance. If TPP is found elsewhere, it will require testing for CLso which continues to be listed as a high priority pest under the EPPRD.

The importance of maintaining TPP monitoring outside of Western Australia cannot be underestimated because another incursion of TPP from overseas could occur. The experience in New Zealand was that five separate incursions had occurred over time at different locations.

To assist in our collective knowledge management, a collaboration of the Department of Agriculture and Water Resources, Plant Health Australia, Hort Innovation, AUSVEG and the state jurisdictions will be gathering data on the presence/absence of TPP with the purpose of identifying possible gaps in surveillance, but more importantly providing confidence to the growing community and our trading partners that Australia remains CLso-free.

INFO

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

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

Project Number: MT16018

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L-R: Virginia Farm Produce General Manager Matthew Farmer and Commercial Business Manager Ryan Densley.

RYAN DENSLEY: LOOKING TO THE FUTURE OF VIRGINIA FARM PRODUCE

Virginia Farm Produce is the quintessential example of a business that has evolved from humble beginnings and adapted to industry challenges to become one of the leading potato growing companies in Australia. Now, new recruit Ryan Densley is tasked with leading the South Australian business further into the future, as Dimi Kyriakou reports.

The key to business revolution is evolution, and Virginia Farm Produce is testament to this fact.

The story of the third-generation family farming group begins with Jack Farmer in 1956. A farmer by name and a farmer by nature, Jack originally began growing potatoes and, over the generations, Virginia Farm Produce has expanded to hold a diverse portfolio of potatoes, onions, almonds and livestock.

Since its inception, potatoes have remained the key commodity for the company, and its diversification into other areas resulted from this commitment. Virginia Farm Produce now spreads across 80,000 acres in two growing regions with different micro-climates in South Australia. Potatoes, onions and almonds are grown on the original farming site in Virginia, north of Adelaide, while potatoes and livestock are located some 250 kilometres away in Keith near the Victorian border, to ensure the year-round supply of potatoes and close the production loop for the business.

In the last year, Virginia Farm Produce has welcomed a new addition to the farming family in the form of Commercial Business Manager Ryan Densley. While second-generation grower Barry Farmer and his son Matthew look after the farming side of the business, Ryan is responsible for taking the

business forward through the construction of a state-of-the-art facility, spearheading new product development and expanding export markets.

Ryan brings with him a rich history in horticulture, growing up on a Victorian lettuce farm and then working in the wholesale markets in Melbourne and Brisbane. This eventually led to a five-year stint at Mulgowie Farming Company, where Ryan was heavily involved in developing its organic vegetable category and export program.

"I had never actually thought about working with potatoes in my wildest dreams to be honest. When the opportunity to work with Virginia Farm Produce came up, I met the family and was inspired by Barry and Matthew and their vision. I left the loving arms of Mulgowie Farming Company and the rest is history," Ryan says.

A TECHNOLOGICAL EVOLUTION

Forward-thinking has held the family business in good stead, particularly through some of the toughest times in South Australia's potato industry. When Australia's then-largest potato supplier Oakville Produce (formerly known as Moraitis Group) entered receivership in 2016, it sparked an era of evolution for Virginia

Photography by Andrew Beveridge.



Farm Produce. Now directly exposed to the retailers, the company quickly expanded on a domestic scale.

“That comes with a lot of growing pains,” Ryan says. “What happened with Moraitis and Oakville helped to spur the innovation and evolution of the business. That got us to a stage where we have future-proofed ourselves with land, water, machinery, equipment and people, and the current customer demands that level of expertise in your business. We don’t have customers; we have partners, and they’re talking to us about five- to 10-year goals. It’s been a big shift and that’s really important.”

A key cog in the wheel of innovation at Virginia Farm Produce is the development of a 6,000 square metre purpose-built facility. The blueprint has cherry-picked the best of global technologies to create what will be one of the most advanced robotic washing, packing and storage facilities for potatoes in Australia.

“The new facility is going to be totally batch managed from seed to plate through connectivity, so it will be well-traced. We have to integrate old systems and new systems and get our farming practices scaled up to produce enough product sustainably to fuel the new facility, so that’s going to be really interesting,” Ryan says.

The facility is designed to meet the requirements of new product developments that are already underway at Virginia Farm Produce, which focus on highlighting the flavour and nutritional value of potatoes.

“We’re going to try to help change the face of the potato,” Ryan laughs.

“We’re a bit excited about our microwaveable bag technology, which is a top-seal, flavoured bag that releases ingredients under pressure in the microwave and coats the potatoes. It is a whole new system and it will need a horizontal form fill, so we’re talking high-care facilities.

“We’re also trialling new potato varieties that are flavour-driven and will be more stimulating for the consumer with better taste profiles. By using nutritional callouts on our packaging and trying

to grow a better flavoured, good and clean product, we’re hoping to get the message out to households about the value of potatoes.”

DEVELOPING NEW MARKETS

Given the limited expansion of the domestic market, Virginia Farm Produce is keenly aware that export is an essential thread in the fabric of the business’s future. Since joining the company, Ryan has helped to build exports from one customer to many in Fiji and the Cook Islands, Singapore, Hong Kong, South Korea, Taiwan, Japan and the Middle East.

The company’s export business was significantly buoyed after securing a tender to send potatoes to South Korea. This developed after a “perfect storm” of events, where South Korea’s domestic production was impacted by severe weather and its supply of imported washed potatoes was hindered by quality issues in the United States.

Enter Virginia Farm Produce, which was called on to deliver nearly 2,000 metric tonnes (or 68 containers) of potatoes to South Korea in the space of three weeks.

“It dislodged their mindset about being dependent on one country, and now they offer up a tender of potatoes where 50 per cent goes to America and 50 per cent goes to Australia,” Ryan explains.

Virginia Farm Produce’s efforts in export and new product development have also overlapped to suit the palettes of domestic and international consumers. Following his participation in the Taste Australia Fresh Produce Display facilitated by AUSVEG and Hort Innovation in Brisbane earlier this year, Ryan is set to launch the flavoured microwaveable bag to the South Korean market in October.

“At the moment our export is really commodity-driven and is probably more opportunistic. We believe the value-added product will give us more stability through market access with different

customers and probably a more sustainable program,” he says.

“We’ve had a lot of support through the export programs at AUSVEG and AUSVEG SA. They’ve been great supporters in making sure that we’ve got the right people in the right places to help in those trade negotiations. If I had done that by myself, I would be well behind where I am now.”

LONG-TERM COMMITMENT

Following his move to South Australia, Ryan is firm on his commitment to the potato industry for the next decade. He is not

industry to increasing consumption of potatoes and vegetables.

“Aligning the potato and onion levy is also one of my bigger, long-term focus points. People need to eat more vegetables, so how do we bring that to the forefront of people’s minds? That costs a lot of money to change people’s habits and how they view their vegetable consumption.”

Back on home soil, Ryan is content in his decision to venture into the potato industry and he has big plans for Virginia Farm Produce.

“I really like the potato category because there are massive opportunities for growth, domestically and globally,” he says.

I want to leave the business and the industry in a better place than when I arrived. To be able to help steer potatoes and onions to a better direction and a better return for growers is ultimately what I would like to do.

only dedicated to the growth and expansion of Virginia Farm Produce, but has also recently joined the AUSVEG SA Board.

“I want to leave the business and the industry in a better place than when I arrived. To be able to help steer potatoes and onions to a better direction and a better return for growers is ultimately what I would like to do,” he says.

Ryan’s priorities range from helping to secure the financial stability of AUSVEG SA so it can have a stronger voice in the

“Fast forward 10 years and we would hope to be one of the main potato exporters in Australia. We want to grow with our chosen partners in the domestic space and be one of the most innovative potato, onion, almond and livestock farming groups in the country.”

Needless to say, evolution is still on the cards for Ryan Densley and Virginia Farm Produce – but in the meantime, we will just have to watch this space.



SAFEGUARDING THE FUTURE OF AUSTRALIA'S POTATO INDUSTRY

Led by Plant Health Australia (PHA), a project is currently being undertaken to decrease the risk of exotic pests affecting the Australian potato industry. This has brought industry together to engage in a process of continual improvement, and also led to the development of the *Potato Growers' Biosecurity Manual*. PHA Project Officer David Gale spoke to *Potatoes Australia* about this project and what it means for the Australian potato industry.

Plant Health Australia (PHA) is the national coordinator of the government-industry partnership for plant biosecurity in Australia. PHA's members comprise all major plant industry bodies that represent Australia's growers and beekeepers, such as AUSVEG and state, territory and Australian governments.

The company works with its members to develop biosecurity plans to identify, assess and prioritise biosecurity risks and provide a framework to mitigate these risks and improve industry preparedness. PHA, in partnership with plant industries and governments, also produces crop-specific biosecurity manuals for growers and consultants. This was undertaken for the potato industry as part of the project, *Review of the national biosecurity plan for the potato industry and development of a biosecurity manual for potato producers* (PT16004), a strategic levy investment under the Hort Innovation Fresh Potato and Potato Processing Funds.

"Pest threats and possible pathways into Australia are changing all the time, so it's important to revisit the assessment and update the plan regularly," Plant Health Australia Project Officer David Gale said.

GUIDING GOOD FARM BIOSECURITY

As part of the project, a group of expert plant pathologists and entomologists assessed potential pests of potatoes in Australia and produced risk ratings for each.

Eighty-four pathogen (diseases) and 142 invertebrate exotic pests which could possibly affect potatoes were reviewed and of those, 13 were identified as being of high priority. These pests include: Colorado potato beetle, serpentine leafminer, black bean aphid, zebra chip, bacterial wilt, and pale potato cyst nematode.

The next step was to assess any gaps in industry preparedness for the top-rated risks. Industry representatives, entomologists, expert pathologists and other scientific professionals met in Adelaide in May 2017 to make this assessment.

"As part of the biosecurity plan development process, industry identifies the steps it wants to take in responding to pest and disease risks with suitable on-the-ground actions. Plans are signed off by both industry and government as the agreed way forward, ensuring that everyone is working on the same priority pests," Mr Gale said.

This group of growers and technical experts identified 50 actions that will guide the improvement of biosecurity measures for industry and government. These actions fall into eight

categories – Capacity and Capability; Plant Biosecurity Education and Awareness; Preparedness and Response; Surveillance; Diagnostics; Established Pests and Weeds; Biosecurity Research, Development and Extension; and Legislative and Regulatory Issues of Importance.

"Many actions relate to prioritisation of specific activities which address the risks associated with each of the 13 high priority pests of the potato industry," Mr Gale said.

INCREASING GROWER AWARENESS

One of the recommendations to arise from the meeting was to develop a biosecurity manual for potato growers.

The resulting *Potato Growers' Biosecurity Manual* (distributed with the June/July 2018 edition of *Potatoes Australia*) is a guide to farm biosecurity measures to reduce the risk of weeds, pests and diseases impacting production. It is separated into six areas of biosecurity practice that will help potato growers safeguard their farm from biosecurity risks, and provides a broader explanation of Australia's biosecurity system including pre-border, at the border and post-border biosecurity procedures.

According to Mr Gale, the manual stands to provide long-term benefit to the industry through increased awareness and practice change, which will decrease the risk of introducing and/or spreading an exotic pest.

"It also provides an ongoing reference for growers in identifying pests which they don't recognise but reinforces the fact that if a grower finds something new it's important that they report this as soon as possible, so that the spread of the pest can be limited for the benefit of the whole industry," he said.

The biosecurity plan is in the process of being endorsed by both industry and government, followed by its e-publication. This project will also include an annual meeting to review any new pests that may threaten the industry; assess biosecurity priorities; and ensure that activities recommended in the biosecurity plan are being implemented.

INFO

Any unusual plant pest should be reported immediately to the relevant state or territory agriculture agency through the Exotic Plant Pest Hotline (1800 084 881). For further information, please contact David Gale on 02 6215 7700 or dgale@phau.com.au.

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

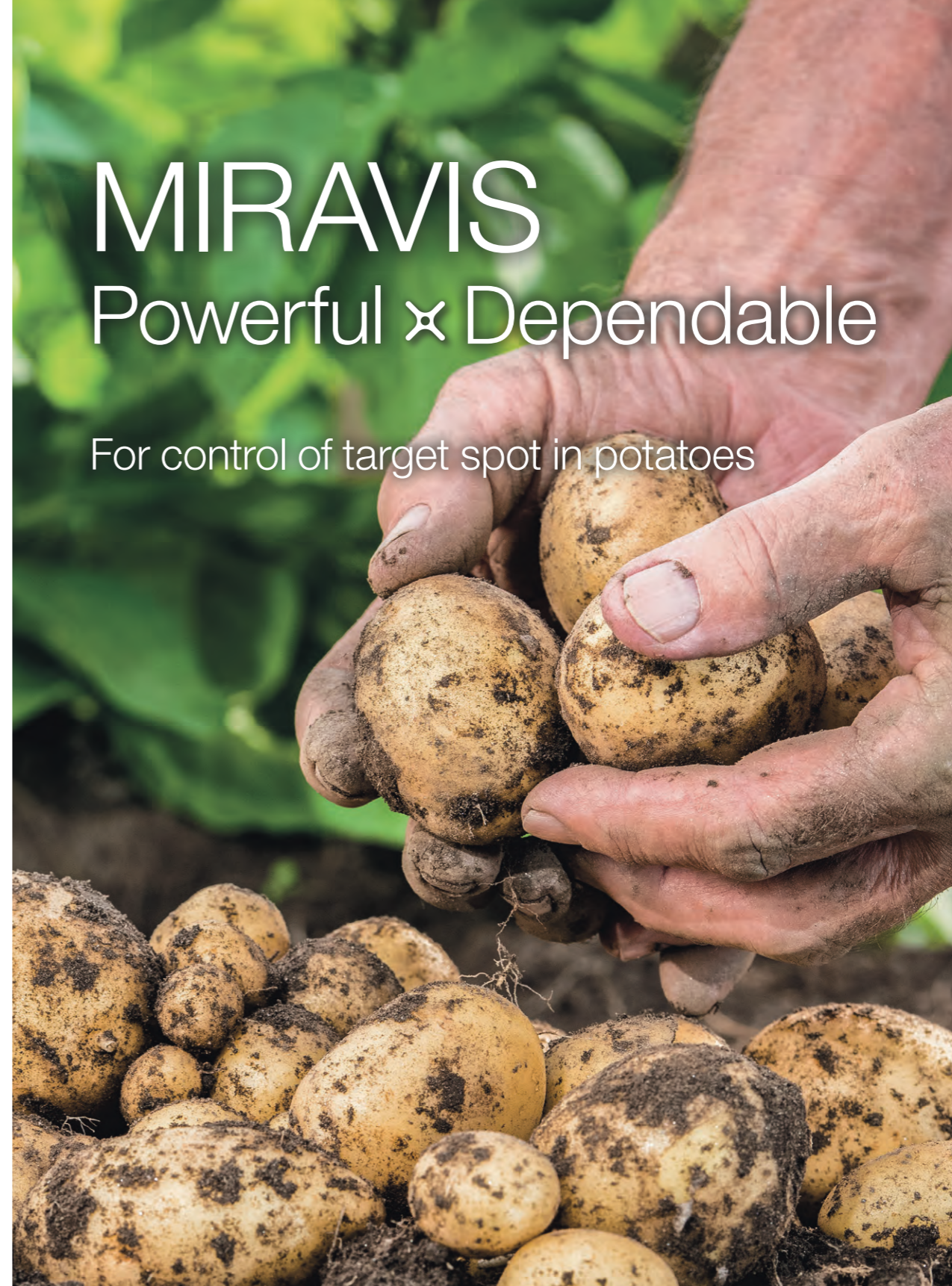
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Laticia Tymensen, daughter of potato growers Lisa and Wayne Tymensen, addresses delegates at the AuSPICA Potato Industry Conference Gala Dinner.

THE ART OF LEARNING AND COLLABORATION EXPLORED AT POTATO CONFERENCE

Potato industry members from around the country gathered in Melbourne to discuss the art of growing potatoes at the 2018 AuSPICA (formerly ViCSPA) Potato Industry Conference in August. The two-day event allowed delegates to share knowledge, explore new technologies and make new connections across the Australian potato industry.

Around 150 delegates converged on the Arts Centre, Melbourne from 12-14 August to attend the biennial 2018 Potato Industry Conference, hosted by seed potato certification authority AuSPICA (formerly known as ViCSPA).

The conference theme was *The Art of Growing Potatoes*, and as AuSPICA Chair Kay Spierings alluded to in her welcome speech, it reflected not only the art of potato growing but also the art of coming together to share business ideas, explore technology and grow relationships.

The two-day event featured international and local speakers who discussed a range of topics, from pest and disease management to the role of industry bodies, including the Potato Processing Association of Australia and AUSVEG. A panel discussion brought the state of the potato industry into focus (see page 17) while AuSPICA General Manager Dr Nigel Crump discussed the value of seed potato certification through an international perspective (see page 18). The conference trade show also featured research facilities along with seed and crop protection companies.

INDUSTRY UPDATES

Both days of the conference began with a presentation from Dr Andrew Robinson from North Dakota State University and the University of Minnesota. Dr Robinson spoke about his experiences in the United States with herbicides and potential risks with potatoes, as well as the soil nutrition required for growing potatoes.

Potatoes New Zealand CEO Chris Claridge offered his insight into the New Zealand potato industry and the activities currently being undertaken across the ditch, including the history and current management practices of the tomato-potato psyllid (see page 19).

University of Maine Crop Specialist Dr Steve Johnson appeared at the conference via video link, where he discussed the lessons learnt from his visits to Australia over the past 20 years and how the potato landscape has changed.

Closer to home, Australian researchers presented on a number of issues affecting current growing practices and gave practical advice on how to combat these challenges. Dr Paul Horne from

IPM Technologies spoke about controlling pests in potatoes and how an integrated approach can assist Australian potato growers, while Tasmanian Institute of Agriculture scientist Dr Robert Tegg outlined two potato levy-funded projects on soil health for potato growers and insights into powdery scab.


Mark Whattam from the Australian Department of Agriculture and Water Resources gave an overview of the import process for potatoes and the challenges with current plant virus tests, and Agriculture Victoria researcher Dr Tonya Wiechel shared the results from past projects conducted on common scab.

LATEST INNOVATION

Syngenta Australia Product Lead – Potatoes and Vegetables Richard Packard spoke about fungicide seed treatments and what they have to offer growers, while Maarten van Delden and Allan Greenhalgh from Tolsma-Grisnich Group discussed the company's cold storage systems for potatoes. Software Objectives CEO and Development Manager Geoff Schaller also explored the modern technology available to assist growers in changing their growing practices.

There was a strong focus on grower health on the second day of the conference, with Dr Jacquie Cotton and Dr Alison Kennedy from the National Centre for Farmer Health discussing agrichemical exposure and its effects, as well as mental health and recognising and managing stress. Dr Kennedy spoke about the flow-on effects of poor grower health and outlined the risk factors for physiological distress and what to expect.

A highlight of the 2018 Potato Industry Conference was the Gala Dinner on 13 August, where 14-year-old Laticia Tymensen, daughter of Victorian potato growers Lisa and Wayne Tymensen, spoke about her battle with osteosarcoma – an aggressive bone cancer that she was diagnosed with at 12. Laticia is now in remission and to help other children battling cancer, a fundraiser was held during the Gala Dinner for Laticia's charity of choice: My Room. Conference delegates raised \$27,730 – a wonderful result and more than double the amount raised at the same event two years ago.

AUSVEG and *Potatoes Australia* would like to congratulate AuSPICA on its successful conference. 



L-R: James Whiteside, Bill Bulmer, Les Murdoch, Terry Buckley and Kay Spierings discuss the potato industry's big issues with Dr Nigel Crump as Donald Trump.

MAKE POTATOES GREAT AGAIN: EXAMINING THE INDUSTRY'S BIGGEST ISSUES

The AuSPICA Potato Industry Conference featured a range of presentations from domestic experts and leading industry figures, including a panel discussion about the state of the potato industry. *Potatoes Australia* was there for the discussion which had the topical title, *Make potatoes great again*.

Addressing the 'bigger picture' issues facing the Australian potato industry was high on the agenda during day two of the AuSPICA Potato Industry Conference, with leaders from multiple facets of the industry taking part in a panel discussion on the topic, *Make potatoes great again*.

Hosted by AuSPICA General Manager Dr Nigel Crump (appropriately dressed as United States President Donald Trump), the discussion aimed to dissect the common problems facing the wider potato industry and how it can work together to address these issues.

AUSVEG was represented in the 40-minute robust discussion, with Chairman Bill Bulmer and CEO James Whiteside joining Potato Processing Association of Australia Chair Les Murdoch, AuSPICA Chair Kay Spierings and potato grower Terry Buckley on stage at Melbourne's Art Centre.

EXTENDING IDEAS

Opening the discussion, Dr Crump acknowledged the fragmented nature of the potato industry and it was agreed that everyone had to get involved and actively contribute to propel it in the right direction.

"We can't make the potato industry great if we don't know where we're going," Mr Murdoch said.

Levy funding was a hot topic for discussion, including how levy funds are spent and where they could be invested to increase industry productivity, profitability, competitiveness and collaboration. It was highlighted that more extension work could be undertaken in the potato industry, similar to what is occurring in the vegetable industry with the National Vegetable Extension Network (VegNET).

"Farmers learn from other farmers. Everyone needs to understand the basics of what they're doing; we need courses for growers on back-to-basics potato growing, so understanding how plants take up nutrients, what's involved in seed certification and storing seed correctly," Mr Murdoch said.

South Australian potato grower Terry Buckley said more needs to be done to communicate the health aspects of potatoes to consumers and give them "permission to eat potatoes again".

Dr Crump called for research and extension to be combined. While speaking from the audience, Victorian grower Wayne


Tymensen said he would like to see more on-farm trials as well as reaching out to young people to get them involved in R&D activities.

CROSS-INDUSTRY COLLABORATION

Mr Whiteside commented on all of the current research that is occurring across horticulture and said this could be shared between industries including the potato industry, if it is relevant. He also called for an industry plan that could be developed with set targets.

"Fragmentation is our downfall. The basics are there, we just need to get cross-industry support," Mr Bulmer added.

Mr Murdoch gave an example of possible cross-industry collaboration, with the vegetable industry's Soil Wealth program potentially being made available to its potato-growing counterparts.

The Australian consumer was also briefly mentioned – Mr Murdoch declared them to be the number one priority when growing potatoes and said that marketing needed to continue in order to meet their needs. 

REBRAND REFLECTS EXPANDING SEED CERTIFICATION SERVICES

The 2018 Potato Industry Conference marked the official launch of AuSPICA, an independent provider of seed potato certification and other services to the Australian potato industry.

Formerly known as ViCSPA, the rebranding of the authority is now reflective of its wider reach. It is now responsible for the seed potato certification schemes in Victoria, South Australia and northern New South Wales (Guyra). In addition, AuSPICA operates an approved quality assurance (QA) program for qualified seed potato businesses to internally conduct quality assurance assessments against the Standards of the AuSPICA Certification Scheme.

For more information, please visit auspica.org.au.



AuSPICA General Manager Dr Nigel Crump.

GAINING AN INSIGHT INTO GLOBAL POTATO SEED CERTIFICATION STANDARDS

In 1968, the United Nations Economic Commission for Europe (UNECE) seed potato program was established, with Australia becoming involved in the past eight years. Dr Nigel Crump spoke at the AuSPICA Potato Industry Conference about the role the UNECE plays in seed certification and how using certified seed potatoes fits in with the United Nation's Sustainable Development Goals.

The United Nations Economic Commission for Europe (UNECE) has developed an international standard for global seed potato certification that includes common terminology and defect tolerances, which can be used to support trade of certified seed potatoes.

At the 2018 Potato Industry Conference, AuSPICA General Manager Dr Nigel Crump took to the stage to explain the UNECE and the role it plays in certified seed. Dr Crump is the Co-Deputy Chair of the UNECE specialised section of seed potatoes, and he told the audience that the role of the Standard is to define commercial quality.

"We have a global standard for seed potatoes. It was created to harmonise the processes involved in a certification scheme, so we all talk the same terminology in relation to seed potato certification," Dr Crump said.

Importantly, an international standard allows for harmonised trade between seed potato producer and seed buyer.

"It's also defined the quality and attributes that it covers: purity; traceability; diseases and pests; external quality and physiological quality; mechanical damage; sizing; and even the label. They're all topics we discuss at UNECE meetings."

Dr Crump said Melbourne hosted a UNECE technical meeting in 2014.

"Generally, the technical UNECE meetings are hosted in various countries around the world, which provides an opportunity to see how local seed potato Schemes operate and creates the exchange in ideas and knowhow. I'm pleased to say that all the delegates that attended the meeting back in 2014 were impressed with the Australian standard and how it operated," Dr Crump said.

SETTING THE STANDARD

Alongside the development of standards, the UNECE sets written guides about various pests and diseases threatening the global potato industry. One publication entitled *Guide to Seed Potato Diseases, Pests and Defects* is available in French, Russian, English and Spanish.

The UNECE guide has been turned into an online app with a view of making it available to growers and industry members around the world. This would give users a more detailed overview of potato pests and diseases and how they impact seed potato certification. The online app has been developed in Australia and will be available to industry soon.

The UNECE seed potato certification program has also published guides for field inspections including how a certified scheme operates, based on discussions at the twice-yearly meetings.

"It's not just the discussion though, we go out on-farm looking at issues and we also look at the current trends on-farm around the world," Dr Crump said.

The UNECE seed potato group has acknowledged how certified seed potatoes fits into the United Nations Sustainable Development Goals, of which there are 17.

The areas Dr Crump outlined included:

- **Responsible production and consumption:** Looking at increased yields and less waste for the entire supply chain, and how industry can achieve that.
- **Partnership for the goals:** Establishing collaboration across countries.
- **Zero hunger.**

"We've seen that certification is a reliable food supplier for nutrition in sustainable countries. But the United Nations is not just about developed countries, it's also about developing countries and how they can set up their seed schemes as well," Dr Crump said.

A NUTRITIOUS CARBOHYDRATE SOURCE

In addition to his UNECE work, Dr Crump spoke about the activities AuSPICA is currently undertaking to increase potato growing in developing countries.

"We're partnering with aid groups such as The Presbyterian Church of Vanuatu and the Prevention of Blindness Program. What they're finding is that the diet in Vanuatu is largely based on rice, which contains no vitamin A (vitamin A deficiency can cause blindness). They're trying to establish a viable potato industry over there to overcome third-world blindness," he said.

"Potato growing is more efficient in using water in comparison to rice production. It's higher yielding per hectare and more nutritious."

INFO

For more information, please contact Dr Nigel Crump on 03 5962 0000 or at nigel.crump@vicspa.org.au.



Potatoes New Zealand CEO Chris Claridge.

PSYLLIDS AND ZEBRA CHIP TAKE CENTRE STAGE AT POTATO CONFERENCE

For the past 12 years, New Zealand has been battling the tomato-potato psyllid and the zebra chip complex, which causes around \$50 million in crop losses annually. Potatoes New Zealand CEO Chris Claridge spoke about New Zealand's response to the incursion at the AuSPICA Potato Industry Conference.

New Zealand's potato industry has been managing the destructive tomato-potato psyllid (TPP; *Bactericera cockerelli*) and the bacterium it vectors, *Candidatus Liberibacter solanacearum* (CLso) since 2006 and 2008, respectively.

The psyllid made its way to Australian shores in February 2017 when it was discovered in suburban Perth. Since then, Australian potato industry members and state departments have been working closely with the New Zealand potato industry to gain knowledge and learn from their experiences.

This collaboration was highlighted at the 2018 AuSPICA Potato Industry Conference, where Potatoes New Zealand CEO Chris Claridge spoke to delegates at length about the psyllid and CLso, including its history in New Zealand, background into TPP/CLso research, and a management plan for both the pest and the bacterium.

BUILDING KNOWLEDGE

Over the past 12 years, Plant and Food Research New Zealand has developed what Mr Claridge described as "world-class" knowledge of TPP and the bacterium it vectors.

"I want to stress that this knowledge has been developed over time, from a baseline of almost no knowledge of the insect and no knowledge of the bacterium," he said.

Following the detection of TPP in New Zealand, it was determined the psyllids were carrying the CLso bacterium, which causes the zebra chip disease in potatoes. There are five different types of CLso identified (A-E), with Type A found in New Zealand.

Mr Claridge outlined the differences between zebra chip symptoms in New Zealand and the United States, which is also battling the disease. The New Zealand strain has less dominant striping in fried potato slices and is found to be less aggressive than the strain in the United States.

Mr Claridge also spoke about the 'psyllid research roadmap' that was established in 2009-10 by the New Zealand potato industry, which included insecticide trials and national monitoring. From 2009-12, the industry worked out a standard sequence for monitoring and also looked at how natural predators and populations could be used as part of a national monitoring tool, such as the use of parasitic wasps.

As grower and industry knowledge is crucial, New Zealand is happy to share research and information with its counterparts across the ditch.

"As growers, you can be happy that there are people here who are in touch with the right people over in New Zealand," Mr Claridge said.

CURRENT ACTIVITIES

Potatoes New Zealand is engaging in research, development and extension activities including plant breeding (only breeding cultivars that are tolerant or possibly resistance to psyllids); studying TPP diversity and the different colonies in existence; examining host plants of TPP and how they can affect behaviour; plus the ecology of TPP and its mating behaviour.

In addition, researchers are looking at productivity improvement across the value chain.

"We're looking at hyperspectral image analysis for grading infected tubers and we're also running research projects on hyperspectral leaf analysis and using Pulsemaster PEF technology to mitigate zebra chip symptoms," Mr Claridge said.

Hyperspectral imaging collects and processes information from across the electromagnetic spectrum, while Pulsemaster is a Dutch company that has released pulsed electric field (PEF) technology. This technology is used in the processing industry to give potatoes an electric shock, which has the ability to change their structure, including disintegrating cells.

This research is extremely important for the New Zealand potato industry, particularly due to the financial impact TPP and CLso has had on the industry.

"We're seeing the loss of yield of about five per cent of crops so if you look at the overall impact of the industry, it's costing us about \$50 million per year."

Mr Claridge concluded that Australia has "dodged a bullet", as there was no evidence of CLso in its TPP-affected potato crops at the time of writing.

"But be vigilant. It could still emerge," he warned.

INFO

For more information about Potatoes New Zealand projects, please visit potatoesnz.co.nz/research-and-development/research-projects.



Learning about farming practices in Ballarat. L-R: Bryan Robertson, Mark Labbett (Labbett Farm), Olivia Ryan (McCain), Leigh Robbins (TriCal Australia) and Daniel Grayling (McCain).

BRIGHT EYES CATCH A GLIMPSE INTO THE VICTORIAN POTATO INDUSTRY

From 15-18 August, members of the South Australian potato industry crossed the border for a tour of Victoria. Hosted by Sebright Adventures, the tour presented delegates with the opportunity to visit growing operations in Ballarat and Gippsland as well as gain an insight into the science behind controlling pests and diseases, and the food innovation underway in Australia. Elizabeth Wharton reports..

New networks and possibilities for collaboration blossomed between South Australian and Victorian potato industry members during a recent tour of Victoria.

The tour was organised by Sebright Adventures Chief Experience Officer Elizabeth Wharton and took place from 15-18 August following the 2018 AuSPICA Potato Industry Conference in Melbourne. Many facets of the Victorian potato industry were showcased to South Australian-based TriCal Australia representatives Bryan Robertson and Leigh Robbins, which provided a comprehensive overview of the industry and highlighted potential opportunities for working together.

The key potato growing regions of Ballarat and Gippsland were explored during visits to AJ Trigg & Sons, Labbett Bros Pty Ltd and GR & LR Jones farms, and conversations with McCain Foods field officers. Of particular interest were growing conditions, soil characteristics and production practices, with options to improve pest and disease management such as fumigation being considered.

SCIENCE IN FOCUS

Victoria's world-class scientific and research capability was demonstrated during visits to the Centre for AgriBioscience (AgriBio) at La Trobe University's Bundoora campus and CSIRO's AgCatalyst event, which was held at Melbourne Park Function Centre from 15-16 August.

The importance and practicality of controlling pests and diseases for farm productivity was discussed with AgriBio staff, with an emphasis on propagating pathogen-free potato plant material using plant tissue culture, molecular diagnostics and current tomato-potato psyllid (TPP) surveillance program activities.

Innovative and nutritious long-life uses for fresh produce developed by CSIRO scientists attracted attention for value-adding to harvests and reducing crop wastage. Currently, broccoli and carrots are being converted into cooking powders, granulated latte powder and tasty snack chips that can be used in lunchboxes. Taste tests were on offer at AgCatalyst, which created a lot of interest due to their novelty. New technology and processing methods like this hold vast potential for potatoes and other perishable crops.

NETWORKING OPPORTUNITY

Decades of experience from all segments of the potato industry was brought together at the industry dinner held on 16 August in

Warragul, Gippsland. Representatives from Potatoes Victoria, Seed Potatoes Victoria, Ag-Challenge, Young Potato People, Thorpdale Potato Festival, and seed and processing growers discussed aspirations for the Victorian potato industry and the role of each organisation.

Angela Betheras from farm gate shop Nickelby at Darnum in West Gippsland shared her insights about diversification, agri-tourism and business practices. Angela is the former International Supply-Chain Manager for Coles Myer and past Chair of the Lardner Park Board, establishing her farm gate shop in 2008. Her wealth of knowledge provided the perfect platform for brainstorming ideas on how to progress the industry by tackling challenges, seizing opportunities and thinking outside the box. The value of collaboration across sectors to leverage new markets, and utilising current trends such as agri-tourism, cooking shows and healthy eating programs in schools was highlighted, with parties keen to develop new pilot programs.

South Australian and Victorian potato industry members have worked together for many years and are keen to continue this in the future. Ms Wharton highlighted the importance of cross-industry collaboration to enable sector growth and efficiencies.

"Bringing together people from different locations and segments of the potato supply-chain is crucial to making the industry more effective and prosperous," she said.

As well as developing business prospects, the tour provided some fun and investigated different business models with meal stops at Bundoora Park Farm, Gippy Goat café and Nickelby at Darnum. In addition, the ingenuity of farmers throughout history was clearly evident at Vin Rowe Farm Machinery and Bundoora Park Farm.

Participants were received with open arms at every site and would like to thank all hosts for their generosity, open discussions and hospitality. Networks formed during the tour and new knowledge obtained will enable TriCal Australia to make more informed decisions and progress business opportunities.

"Our company meetings with the local potato industry representatives during the tour enabled us to maximise our networking potential," Mr Robertson said.

INFO

For more information about this tour or Sebright Adventures, please contact Elizabeth Wharton on 0484 902 702 or sebrightadventures@outlook.com.



L-R: New Marvel Packers Procurement Manager Alistair Walmesley-Cotham, Doug Lind, Angelica Cameron and Michael Harding at a potato IPM trial site in Peebinga, South Australia. Image courtesy of IPM Technologies.

POTATO PROCESSORS WELCOME ALISTAIR WALMESLEY-COTHAM TO THE INDUSTRY

In this edition, Potato Processing Association of Australia Executive Officer Anne Ramsay speaks to Alistair Walmesley-Cotham who was recently appointed to the role of Marvel Packers Procurement Manager.

Marvel Packers is an Australian potato processing company that has been buying and processing Australian-grown potatoes since 1929. It manufactures frozen French fries and potato products and is located in Melbourne's south-east. Plans are well-advanced for expansion, including a new state-of-the-art factory to be constructed on the vacant land adjacent to the existing plant in Hallam.

Alistair Walmesley-Cotham joined Marvel in February 2018 to provide an interface between the factory and potato suppliers, with a view to building that supply to support the new plant.

Based in Loxton, South Australia, Alistair describes his role as "getting spuds from the farm to the factory and working with growers to address on-farm issues".

"I've got a farming background; I started farming in the United Kingdom and have been involved in farming ever since," Alistair said.

INDUSTRY OBSERVATIONS

In his time in the role, Alistair has observed that the biggest on-farm challenges facing the Marvel growers involve input costs, availability of water, and accessing and retaining skilled labour. The biggest input costs are generally related to electricity and diesel prices, as well as the increasing cost of chemicals and fertilisers.

"With increasing costs on-farm and little room to move on prices paid to growers, it certainly makes ongoing improvements in on-farm productivity critical. Unlike the fresh market, frozen chips flood in from enormous overseas factories and despite our superior quality, they restrict our ability to move pricing up of both raw and finished product," Alistair said.

"Investment in potato varieties that are more water-efficient and with greater disease tolerance would be enormously valuable. In the UK, varieties aren't as closely held and it means that more efficient varieties are generally more widely available."

Alistair has been encouraged by several innovative producers that are thinking outside the box in order to address production issues.

"We are often tempted to approach production based on what we know works, and that's a safe option, but taking a few risks and changing the way we approach production is really paying off for some of our growers."

Prior to joining Marvel, Alistair worked in the washed potato industry and was the farming manager with SA Potato Company.

"The washed industry doesn't have the benefits of fixed price contracts. The security that comes with a fixed price contract and the ability to manage a budget around that is a huge bonus for processing growers," he said.

"I've also seen less food waste in the processing industry [compared to washed], but there's a long way to go yet."

In his spare time, Alistair loves to spend time on the Murray River. An active member of the local scouting movement, he is happiest with a fishing rod or watching his kids charge up and down in their kayaks.

INFO

To contact Alistair Walmesley-Cotham, please email alistair@marvelpackers.com.au. To provide your feedback, contact Anne Ramsay on 0400 368 448 or at ppaa.eo@gmail.com.



AUSVEG National Manager – Public Affairs Tyson Cattle.

REPRESENTING VEGETABLE AND POTATO GROWERS AT THE NATIONAL LEVEL

In 2018, AUSVEG made a dedicated investment in its advocacy activities with the appointment of Tyson Cattle to the role of National Manager – Public Affairs. Tyson’s role focuses on building strong, evidence-based cases that AUSVEG can take to Federal Government and other stakeholders to advocate for growers on the issues that are impeding their growth and prosperity. He spoke to *Potatoes Australia* about his role and vision for the future.

A passion for agripolitics and a desire to return to the front line of advocacy lured Tyson Cattle out of Fairfax Media’s Victorian agricultural publications and into the role of National Manager – Public Affairs at AUSVEG, the peak industry body for Australia’s potato and vegetable industries.

Previously the editor of *Stock and Land* and manager of *Australian Dairy Farmer* and *Turf Craft* magazines, Tyson brings a great appreciation for the value of Australia’s rural and regional industries. Hailing from a sheep and cropping background, Tyson grew up on a broad acre property in Lake King, 450 kilometres south-east of Perth, and has a deep understanding of the hard work and commitment that growers and all farmers put into feeding Australia.

GROWER ADVOCACY

As National Manager – Public Affairs, Tyson’s role primarily focuses on AUSVEG’s advocacy activities. As the industry continues to grow in value and importance to the Australian economy, this work is vital.

“My role really is to try and raise the profile of horticulture and the potato and vegetable industries in general. Certainly, to make sure that when policies are formed or governments are making their decisions, that they take into account the impact it has on vegetable and potato growers,” Tyson says.

“It’s important that I have relationships through Canberra, but it’s crucial I have good relationships with growers and understand their business so I can effectively advocate on their behalf.”

Since joining AUSVEG in February, Tyson has been on a self-described “introductory tour” of growing regions from as far as Mareeba in north Queensland, to Tasmania, as well as Gingin in Western Australia to better understand the horticulture industry.

“I’ve been trying to do as many on-farm tours as possible and touch base with growers directly. Growers start to open up more when they’re at their most comfortable and that is on their own property and in their own business,” he says.

“It’s good for them to open up and tell me what sort of situations are going on in their business, and how we can help.”

CURRENT PRIORITIES

While Tyson’s role is to advocate on behalf of growers, he is looking forward to learning more about the potato and vegetable industries and working with industry members to deliver tangible results.

“I’d like to not only campaign but also be able to see some sort of light at the end of the tunnel – particularly for growers and their businesses. With labour in particular, it has been clear across the country that it is probably the number one issue that is impacting farm businesses at the moment,” Tyson says.

Additionally, AUSVEG joined the National Farmers’ Federation’s newly-formed Horticulture Council, representing a renewed investment in AUSVEG’s role in representing the interests of Australia’s vegetable and potato growers and the broader industry. This has already proved to be beneficial for both parties, as Tyson explains.

“We’ve been working very closely through the Horticulture Council and the National Farmers’ Federation around the development of an agriculture/regional visa, and we are making some sound progress on that,” he says.

“That’s really exciting for industry; not only for horticulture but agriculture generally.”

Vegetable and potato growers across Australia are encouraged to get in contact with Tyson to discuss any issues affecting them and their growing operation. As he is new to the industries, Tyson is willing to learn and assist where possible.

“The best way for me to learn is directly from growers, so I’d encourage them to get in touch. We can catch up, sit down and work together in trying to improve the industry.”

CURRENT ISSUES ON AUSVEG’S AGRIPOLITICAL AGENDA

- Horticulture Award – draft determination from the Fair Work Commission on overtime for casuals released (submission being drafted at the time of writing).
- Biosecurity – advocating for a coordinated industry response to outbreaks and management of fruit fly.
- Agriculture/regional visa – continuing to work with horticulture and agriculture groups.
- Food and Grocery Code of Conduct – working with the Australian Competition and Consumer Commission.
- Working with state members and growers on Harmonised Agvet Chemical Control of Use.
- Developing the agenda for the upcoming Federal Election.

INFO

For more information, please contact Tyson Cattle on 03 9882 0277 or at tyson.cattle@ausveg.com.au.



AUSVEG WELCOMES TRADE DEAL BETWEEN AUSTRALIA AND INDONESIA

AUSVEG welcomed the finalisation of the Indonesia-Australia Comprehensive Economic Partnership Agreement (IA-CEPA) in September, saying that the deal will help Australian vegetable and potato growers looking to export to this important market.

The IA-CEPA will create the framework for a new era of closer economic engagement between Australia and Indonesia, which should improve two-way trade between the countries and provide opportunities for Australia’s fresh vegetable and potato exporters.

In the 2017-18 financial year, Australian vegetable exports to Indonesia were valued at \$3.7 million, with the top commodity being potatoes, which accounts for nearly half of this total. Given Indonesia’s developing population and its proximity to Australia, this market has strong potential for local growers to boost their fresh vegetable and potato exports.

Key outcomes for the vegetable industry from IA-CEPA are:

- Potatoes: Increased import quota of 10,000 tonnes per year, growing to 12,500 tonnes per year after five years, with a decreasing tariff schedule during this time.
- Carrots: Increased import quota of 5,000 tonnes per year, growing to 10,000 tonnes per year after 10 years, with a decreasing tariff schedule during this time.

“The efforts of the Department of Foreign Affairs and Trade and former Trade Minister Steven Ciobo who worked together with their Indonesian counterparts to finalise negotiations are greatly appreciated by the Australian vegetable industry,” AUSVEG CEO James Whiteside said.

“In particular, the agreement to increase import quotas and decrease tariffs for carrot and potato exports – two of the Australian vegetable industry’s key export crops – should lead to an immediate increase in the trade of these commodities to Indonesia, a potentially lucrative market for our growers.

“The finalisation of this important deal is timely, given the industry’s increased activities in market development, which included Indonesia’s participation in the recent annual AUSVEG Reverse Trade Mission that allowed buyers from key export markets to visit Australian vegetable growers and see first-hand the high-quality produce for which our growers are renowned around the world.”



Common scab is a prevalent soil-borne disease that occurs in potato growing regions throughout the world, including Australia. Caused by the bacteria-like organism *Streptomyces scabies*, common scab has historically generated uncertainty in the potato industry regarding the prevalence of infected seed in commercial seed lines and their potential for transmitting the disease to new tubers.

This uncertainty led to a three-year project funded by the Horticultural Research and Development Corporation (now Hort Innovation), to determine and clarify the relevance of seed-borne infections, and evaluate methods for their control. This project was led by Dr Hoong Pung and Susan Cross as part of Serve-Ag's Research Division in Tasmania, now known as Peracto, where Dr Pung and Susan Cross still work.

Investigation on Common Scab Disease of Potatoes And Development Of Control Methods (PT96010) was a strategic levy investment under the Hort Innovation Fresh Potato and Potato Processing Funds, and concluded in June 2000.

This project followed preliminary studies conducted by Tasmanian researcher Calum Wilson as part of PT00205 – *Integrated management of potato common scab*, which ran from 1993-95. Dr Wilson's studies showed that fungicide products using fluazinam and flusulfamide had the potential to control common scab, and PT96010 aimed to further evaluate the potential of these products, as well as other low-cost products such as Mancozeb.

Dr Pung told *Potatoes Australia* that although initial studies revealed that seed treatments with high concentrations of Mancozeb were effective, it is rarely used today and has largely been replaced by Maxim seed treatment, which has been shown to suppress seed-borne common scab. Currently, Maxim is the only fungicide registered for seed-borne common scab control.

However, Dr Pung revealed one major outcome of the project which has assisted growers over the past 18 years.

"We found that common scab incidence, based only on the presence of the disease symptoms on seed potatoes, did not correlate to disease transmission in the field for the next crop," she said.

"Only seed that had very high coverage or deep scab lesions could be correlated to transmitting the disease. At the time, in some years, there were shortages of seed because many seed crops were affected by common scab and hence for seed certification, many seed crops were deemed to have unacceptable incidence of common scab."

COMMON SCAB CONTROL: A 20-YEAR EVOLUTION

Over 20 years ago, common scab was highly prevalent in Australia's potato growing regions. This led to the establishment of two projects that focused on the epidemiology of the disease, followed by the development of control methods. Dr Hoong Pung co-led the later project, and she spoke to *Potatoes Australia* about changes in the perception of common scab disease today since the research was conducted.

Common scab present at low levels and in low severity are easily controlled with fungicide seed treatments, as Dr Pung explained. The products Mancozeb, Maxim and Shirlan were shown to give good control of common scab from infected seeds. For example, treating infected seed that had low scab severity with Mancozeb reduced disease transmission from infected seeds by 75-100 per cent compared to the untreated control.

"Rather than putting too much emphasis on getting disease-free seeds, the disease can be better managed by looking at conditions that favour the disease development and trying to avoid those conditions with better irrigation management," Dr Pung said.

"In a follow-on project (PT02016 – *Common Scab Threshold On Tuber Seeds For Processing Potato Crops*, completed in 2006) data generated supports a recommendation to raise the common scab threshold from four per cent to 10 per cent infected seeds."

A SHIFTING LANDSCAPE

The past 20 years have also resulted in many changes in potato production.

"There has since been a lot of changes in irrigation types and frequency, varieties and other practices in potato production. In recent years, growers' concern has shifted to powdery scab disease. The conditions that are favourable between common scab and powdery scab are the complete opposite," Dr Pung said.

While common scab is prevalent in dry soil conditions, powdery scab favours wet soil conditions.

"Nowadays, potato growers have to maximise crop yield by applying more frequent irrigation, and under these conditions, powdery scab is the major disease problem," Dr Pung said.

"Common scab disease is no longer considered to be a major problem under current practices by many growers. For this reason, growers are more interested in powdery scab control in recent years."

INFO

For more information, please contact Dr Hoong Pung at hpung@peracto.com.

The final report for this project is available on InfoVeg. Readers can search 'PT96010' on the InfoVeg database: ausveg.com.au/infoveg/infoveg-database.

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

Project Number: PT96010

**Hort
Innovation**



BEWARE THE PITFALLS OF HERBICIDE CARRYOVER

Residual herbicides may have plant-back restrictions that, if ignored, can cause significant damage to susceptible potato crops. These symptoms can be exacerbated by other elements such as unfavourable weather conditions. Syngenta Solutions Development – Technical Lead Scott Mathew outlines what growers can do to avoid the risk of herbicide injury to potato plants.

Planting potatoes into pasture country or into ground following crops such as cereals can pose significant risk. Growers need to be aware of any plant-back restrictions. Residual herbicides may persist in the soil for quite some time and if taken up by susceptible crops can cause real damage.

Herbicide symptoms can include plant stunting; yellowing of foliage; whitening or bleaching of foliage; malformed roots or tubers; leaf puckering; distorted growth; leaf speckling; and in extreme cases, plant death.

The unfortunate truth is that injury from residual herbicides is not uncommon. As horticultural areas continue to expand into more traditional broadacre farming country, we really need to be more aware of this issue.

Some of the more common herbicide families to cause plant-back issues in potatoes include:

- Synthetic auxin-type plant growth regulators (e.g. carboxylic acids or pyridine or picolinic acid belonging to Herbicide Group I).
- ALS/AHAS enzyme inhibitors (Herbicide Group B).
- Photosynthesis inhibitors (Herbicide Group C).

Carboxylic acid, pyridine or picolinic acid growth regulator-type injury is similar to that from 2,4-D based products. General symptoms are curling of young leaves. Tuber yields can be greatly reduced. Overseas information indicates crop exposure may carry over into seed tubers and affect the following year's crop.

PLANT SYMPTOMS

Inhibitors of ALS/AHAS enzyme include the imidazolinones (e.g. imazethapyr, imazaquin and imazamox) and the sulfonyleurea family (e.g. chlorimuron, chlorsulfuron, metsulfuron and triasulfuron). Symptoms include a light green appearance of leaves, especially new ones. Leaves can be cupped upward, and the leaf may disintegrate leaving the mid-rib. Leaves may also appear drought-stressed. Severe injury results in stunting and purpling, while tuber yield and quality are greatly reduced.

The triazine photosynthetic inhibitors include atrazine, cyanazine, simazine and hexazinone. Carry-over injury can occur when high label rates of metribuzin is used in potatoes after triazine has been applied in the previous crop.

WHAT MAKES THE SITUATION WORSE?

If injury is mild and the crop is actively growing, potato plants will often grow out of herbicide damage to yield a decent harvest. However, unfavourable weather conditions such as heavy rain and subsequent waterlogging or cool temperatures can exacerbate the severity of herbicide injury by slowing early crop growth and plant metabolism.

A worst-case scenario would be if the crop dies or is so badly affected that it won't grow through to produce a viable harvest. In that situation you'll likely have to do your research and replant a less susceptible crop. That's costly, so it's well worth taking the following steps to avoid the risk.

WHAT YOU CAN DO TO REDUCE THE CARRYOVER RISK

- Firstly, pay attention to any plant-back restrictions on herbicide labels. Plant-back restrictions are more than friendly recommendations for you to consider. As part of the herbicide label, they are the law! If you are leasing land to grow your crop, get the herbicide records from the owner.
- Wherever possible, you should be thinking and planning your crop and chemical rotations over the long-term. Aim to manage herbicide applications to minimise persistence in the soil that can impact subsequent crops. Consider factors such as product selection, application rate, application timing, expected rainfall, soil texture and pH and tillage in the preceding crop.
- Where possible, choose herbicides without plant-back restrictions to give you the ultimate flexibility.
- And finally, keep records of all chemical use and conditions. Records are your best tool for unravelling what's really going on.

INFO

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

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



A.S. Wilcox & Sons Pukekohe production shed.

VEGETABLE INDUSTRY GROWER TOUR VISITS KEY NEW ZEALAND POTATO GROWER

As part of the 2018 Young Grower Industry Leadership and Development Mission, a group of young vegetable growers visited A.S. Wilcox & Sons, one of the biggest potato, carrot and onion growing operations in New Zealand. AUSVEG Mission Leader Shaun Lindhe provides *Potatoes Australia* with an update on the lessons from this site visit that apply to the potato industry.

In April, the 2018 Young Grower Vegetable Industry Leadership and Development Mission visited a number of New Zealand's largest vegetable producers. One of the highlights of the mission was a visit to A.S. Wilcox & Sons, a leading potato, carrot and onion grower in New Zealand's North Island.

The group met John Wilcox, Sales Manager (Domestic – Supermarkets), who provided a comprehensive tour of the farm's packing and coolstore facilities as well as an overview of the company, its products and its various growing regions.

Below is an overview of the key areas of discussion during the visit:

- **Direct to consumer:** Wilcox is focused on providing consumers with the best experience of their product, so it works hard to not only supply the consumer directly through uniquely-packaged products, but it also uses customer focus groups to identify consumer trends and predict new products that will work in the market. From this research, it has developed multiple successful products, including potato packs with 'windows' for consumers to look at the product before they purchase it. The business has also trialed different potato varieties for consumers and snacking carrot varieties.
- **People development:** Wilcox has a big focus on developing its staff – as John said, "Its biggest asset is its people." The company invests in its staff and makes it a priority to ensure staff are engaged and provided with ample development opportunities.
- **Machine maintenance:** The company employs 11 engineers and two mechanics amongst its 200 full-time employees to make sure its machinery is regularly serviced. Not only are all farm machines regularly serviced, but also its sorting and processing equipment, with one machine taken out of action every week and given a complete service and clean.
- **Innovation:** Wilcox knows that the threat of imports makes it harder to compete on cost, so to compete on quality, it is necessary to research the latest technologies and production practices that can ensure high-quality produce.

- **Weather:** Given the skinny shape of New Zealand's North Island, the weather is much more variable than it is in Australia, with the weather changing over a short distance from coast-to-coast. This creates problems for planting and harvesting planning as the variability could mean that product needs to stay in the ground longer. To combat this, Wilcox grows in multiple areas in the country so that it can take advantage of the region's specific climates to supply local and international buyers 12 months a year.
- **Urban encroachment:** Auckland is one of the world's fastest-growing cities, with housing pressure pushing residents south into Pukekohe (about 50 kilometres south of Auckland), which is causing a number of issues, including managing relationships with neighbours who may not know the realities of living near a farm.
- **Food safety, forward planning:** Food safety is of utmost importance for the company, and Wilcox remodelled its shed in anticipation of future regulation that may require food producers to maintain similar food safety and preparation processes as food service companies. Employee and fire safety is also a key focus, with the floor completely cleaned at the end of each day.

INFO

AUSVEG would like to thank John Wilcox and Peter Wright from Plant and Food Research New Zealand for organising the site visit.

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

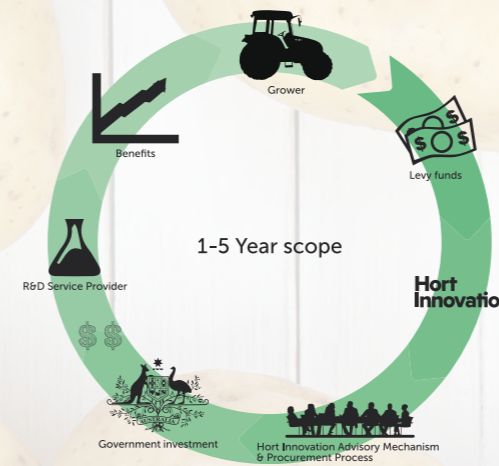
This project has been funded by Hort Innovation using the vegetable research and development levy, contributions from Australian vegetable growing businesses and contributions from the Australian Government. This communication was funded by Hort Innovation using the fresh potato research and development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

Project Number: VG15703



THE FRESH POTATO R&D LEVY AT WORK

STRATEGIC LEVY INVESTMENT



WHO PAYS THE FRESH POTATO R&D LEVY?

The levy is paid by growers who produce and sell either fresh or processing potatoes in Australia.

The total levy charge is set at 60 cents per tonne for fresh potatoes and 50 cents per tonne for processing potatoes and must be paid by the producer of fresh potatoes or the owner of processing potatoes. 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 Potato – Fresh Fund, which is part of the organisation's strategic levy investment activities.

All investments through the Potato – Fresh Fund are made with advice from the industry's Strategic Investment Advisory Panel (SIAP) – a skills-based panel made of panellists from across the fresh potato industry, the majority of whom are levy-paying growers.

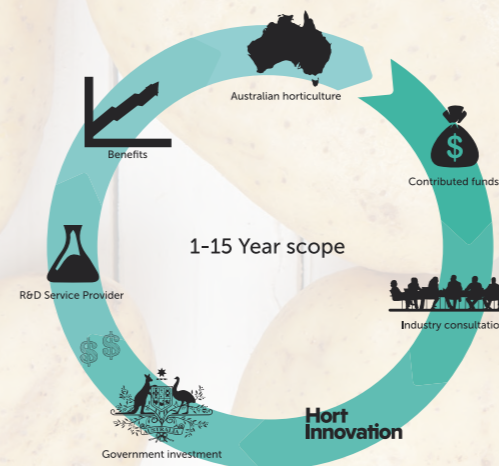
Strategic levy investments have a one- to five-year scope and the R&D is designed to directly benefit growers in the potato industry. Project topics range from pest and disease management to biosecurity matters, with findings communicated through a variety of channels, including *Potatoes Australia*.

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

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

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

HORT FRONTIERS



HOW CAN GROWERS GET INVOLVED?

All potato growers are encouraged to share their thoughts and ideas for the research they want to see, both within the levy-specific Potato – Fresh 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 Potato – Fresh Fund page).



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



SETTING THE FOUNDATIONS FOR A SUCCESSFUL CAREER



NAME: Rachel Gill
AGE: 25
LOCATION: Ulverstone, Tasmania
WORKS: Simplot Australia Pty Ltd
POSITION: Seed Potato Field Officer

HOW DID YOU FIRST BECOME INVOLVED IN THE POTATO INDUSTRY?

I first became involved in the potato industry in December 2017 when I started in this role. Prior to that, I had no potato industry experience at all.

WHAT DOES YOUR ROLE AS A SEED POTATO FIELD OFFICER INVOLVE, AND WHAT ARE YOUR RESPONSIBILITIES?

As a Seed Potato Field Officer, I am responsible for making sure that all of our early generation crops are looked after throughout the season, that they are treated correctly when being brought into the coolstore and to ensure that we are receiving the highest quality of seed potatoes possible for our commercial potato growers. My role involves liaising with seed growers; making sure that planting is going well; conducting crop walks to monitor plant health throughout the season; ensuring that harvesting occurs correctly; and that there are no major issues in coolstore with the seed.

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

Honestly there a lot of things that I enjoy about working in the potato industry! Mostly I enjoy the challenge of potatoes; my fellow field officers have told me that I will never stop learning about potatoes and that no two seasons are the same. There is nothing better than seeing the results of the grower's hard work when they are rolling up the harvester.

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

I think the biggest challenge that I face is my lack of experience and knowledge about the potato industry. It has been an extremely steep learning curve and I am grateful for all of the support from the seed growers, my fellow field officers and my Agricultural Services Manager Les Murdoch. The only way to overcome this challenge is to keep asking questions, listen and keep saying yes when people want to show you things.

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

I rely on the seed growers, field officers and agronomists that you get to know over the course of the season for on-farm practical advice and information. I do love Google also but it's important to validate the information with real world

experience from industry people that have been involved in potatoes, for sometimes their whole lives.

YOU ATTENDED THE AUSPICA CONFERENCE IN AUGUST 2018. WHAT DID YOU LEARN FROM THE TWO-DAY CONFERENCE, AND HOW IMPORTANT ARE EVENTS LIKE THESE TO THE POTATO INDUSTRY?

Events like the AuSPICA Conference are extremely important to the potato industry as growers are quite often time-poor. To find information about topics that they want to learn about is time consuming, so to have it all there over a couple of days is great. I obviously learnt a lot, but the biggest learning curve was just how big the potato industry actually is and that we need to all work together to improve the industry to make sure it's here for a long time.

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

I believe that the issue of powdery scab, water and nutrient efficiency of potatoes are really critical to the potato industry so it would be fantastic to see more research in these areas.

WHAT NEW INNOVATIONS, RESEARCH AND/OR PRACTICES HAS YOUR BUSINESS IMPLEMENTED RECENTLY?

We have really encouraged our seed growers to take the opportunity to use PreDicta Pt to test the paddocks that they

intend to grow seed in, and we believe that it is a good risk management tool for the company and our seed growers.

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

Exporting seed potatoes to not just the Australasian region but further around the world.

WHERE DO YOU SEE YOURSELF IN FIVE YEARS?

I haven't set myself any goals or timeframes as to where I would like to be in five years because I still have so much to learn in my current role. I definitely see myself still with Simplot. I suppose when I feel comfortable in this role, and I have made the changes that I have wanted to, then I will think about it.

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

More education needs to happen in primary, high school and university students about exactly where McDonalds fries come from (from our perspective) and what actually goes into creating the finished product that they know. Agriculture is extremely diverse and the opportunities are endless. This is what needs to be conveyed to young people to encourage them to study agriculture and, in particular, potatoes.

...I will never stop learning about potatoes and no two seasons are the same. There is nothing better than seeing the results of the grower's hard work when they are rolling up the harvester.



Photography by Flick and Dave

Rachel Gill pictured on her home farm.



MODERN SLAVERY LAWS DRIVE TRANSPARENCY PUSH IN FRESH PRODUCE CHAINS

Worker exploitation – and, in some instances, forms of slavery – occur in many industries in Australia, including horticulture. Growcom’s Fair Farms Initiative team reports on new laws that are driving improved worker welfare through increased supply chain transparency.

Governments at both state and federal levels have moved to address insidious forms of slavery, bonded labour and worker exploitation through the introduction of Modern Slavery laws.

In New South Wales, legislation has been enacted requiring entities with an annual turnover of \$50 million or more to publish a Modern Slavery Statement. These companies must also demonstrate actions to address risks of slavery or worker exploitation occurring within their company and their supply chains. Companies who fail to meet these requirements or provide misleading information face penalties of up to \$1.1 million.

A similar bill was introduced into Federal Parliament in June which, if passed, would apply to entities with an annual turnover of \$100 million.

Coles already participates in international modern slavery reporting frameworks and both Coles and Woolworths have adopted responsible or ethical sourcing policies.

Major players in the fresh produce industry, such as Perfection Fresh, Costas and the Fresh Produce Group, are large enough to be impacted by the New South Wales law.

The new laws mean that retailers and the larger fresh produce companies must have mechanisms in place to verify their suppliers’ employment practices. In the short-term, direct suppliers are being requested to demonstrate their employment arrangements are legally compliant; however, in time, second and third tier suppliers will also face greater scrutiny.

The Fair Farms training and certification program will help growers meet emerging requirements for verification and transparency. The program moves into a “proof of concept” pilot phase in October. Up to 10 farm businesses around Australia will help to test each of the key elements of the program.

LESSONS LEARNED FROM SOCIAL AND ETHICAL AUDITS IN FARM BUSINESSES

While scrutiny of employment practices on farms may seem new to many growers, direct suppliers to large companies such as McDonalds or Coles have needed to demonstrate compliance

with social or ethical standards for some years now. Over the last two years, audit firm AUS-QUAL has completed over 1,000 social audits with farm businesses.

AUS-QUAL General Manager of Corporate Services Terry O’Brien has reviewed these audit results to identify matters that commonly trigger corrective actions or findings. The most common include:

- Safety and administration issues (60%).
- Insufficient written policies and procedures (10%).
- Harsh treatment of farm workers (7%).
- Farm workers required to work excessive hours (6%).
- Child labour or poor management of young workers/minors (6%).

Essential administrative matters that auditors check for include:

- Written policies and procedures.
- Current certificates of insurance and licenses.
- Contracts, for example with labour hire agencies.
- Employment records, particularly for induction and training.

Health and safety matters that commonly trigger audit findings include:

- Inadequate assessment of health and safety risks by farm managers (16%).
- Poor emergency procedures and equipment:
 - Evacuation maps, signage, drills or training (22%).
 - Nominated fire wardens, fire-fighting equipment or drills (15%).
 - Qualified first aiders, first aid kits, or out-of-date first aid supplies (15%).
 - Blocked emergency exits (7%).
- Insufficient “test and tag” of electrical equipment.

It is worth conducting a review of these issues in your own business. While most are legal requirements, well-managed health, safety, training and record keeping also helps build a positive business culture and high job satisfaction among staff.

INFO R&D

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

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



RETAILER PROGRAM USES SURPLUS PRODUCE FOR STOCK FEED, COMPOST

While food waste remains an ongoing issue across the globe, a number of programs have been put into place across Australia’s supply chain to lower the volume of produce ending up in landfill. One example is Woolworths’ Stock Feed for Farmers initiative, which allows growers to use surplus produce from the retailer to feed livestock or be repurposed as compost.

As Australia’s population grows, so too does our need to become more conscious of the waste we create not only in our daily lives, but across the horticulture industry. As food waste reduction remains a hot topic, retailers are in a unique position to take surplus fresh produce that would otherwise go to waste and redirect it to other alternatives.

A Woolworths initiative designed to help farmers has alleviated the volume of food entering landfill for almost two decades. The Stock Feed for Farmers program allows growers to collect surplus fruit, vegetables and bakery products to feed their stock or use as compost, in turn reducing the amount of produce that is disposed of at the end of the day.

Woolworths Head of Sustainability Adrian Cullen said the program is one way that the retailer is aiming to lower waste levels through all facets of the supply chain.

“We’re not just looking at food waste and how we manage that in our stores, we’re also now looking at how we manage food

waste throughout the supply chain – so looking further upstream, and working with farmers to reduce food waste,” Mr Cullen said.

“We’re continuing to work with farmers at reducing food waste on-farm, and we’re also looking at how we can reduce food waste as it travels through our supply chain to our stores, and then helping customers reduce food waste in the home.”

Other initiatives include the Odd-Bunch range and donating to food rescue organisations.

In 2017, nearly 30,000 tonnes of produce that would otherwise go to waste was donated to almost 600 farmers who take part in the program. Growers can participate in the program at no cost, aside from the time it takes to visit a Woolworths store and collect their bin of produce.

INFO

For more information, please visit woolworths.com.au/farmerprogram.


 Access InfoVeg for the latest R&D reports for the vegetable and potato industries.
 Online database
ausveg.com.au/infoveg
 Videos
ausveg.com.au/infoveg/infoveg-tv



Lead researcher of the *Innovative cold plasma for horticultural industries* project, Dr Sukhvinder Pal Singh.



Purple sweet corn is one vegetable being used in the *Naturally nutritious and simply red* project.



Dr Tim O'Hare from the Queensland Alliance for Agriculture and Food Innovation is a member of the *Naturally nutritious and simply red* project.

BUILDING CONSUMER CONFIDENCE AMONG AUSTRALIANS

The Health, Nutrition and Food Safety Fund is one of seven funds developed by Hort Innovation to facilitate collaborative cross-industry research to secure the future of the horticulture industry. *Potatoes Australia* spoke to Hort Innovation Business Development Manager Sharyn Casey about the importance of delivering safe, nutritional and healthy products to Australian consumers.

Hort Innovation developed the Hort Frontiers initiative to support research that will address major challenges facing the horticulture industry, which are typically out of scope of levy investments and matching Federal Government funds.

The projects within the Hort Frontiers initiative are relevant across the horticulture industry, long-term investments and likely to attract additional public and private funding as co-investment. The potato 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, including non-horticulture commercial industries; universities; public and private research institutes; and state government agencies and international co-investors.

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.

IDENTIFYING HORTICULTURAL GAPS

In 2012, Hort Innovation initiated an extensive industry consultation process to seek feedback on future priority research areas that have the potential to grow the horticulture sector. Sixteen priority research areas were identified.

"The Board then went through the process of identifying which of the 16 priority areas would be highly attractive to co-investors with sufficient momentum to be fully operational by the end of 2015," Hort Innovation Business Development Manager Sharyn Casey said.

"The five foundation funds included the Health, Nutrition and Food Safety Fund. We then undertook an independent economic

impact assessment of the remaining priority areas which led to the establishment of a sixth fund (Pollination).

"As part of our commitment to continuous improvement, we have just completed a further stakeholder consultation process to seek feedback on the strategic direction of each of the Frontier Funds, including the Health, Nutrition and Food Safety Fund."

Ms Casey said the overarching aim of the fund is to grow the horticulture industry by increasing consumption of fresh, safe and nutritious fruit, vegetables and nuts.

"Food safety and nutrition is a priority for both consumers and growers. Good food safety and nutrition promotes consumer confidence and industry growth for the vegetable and potato sectors and wider horticultural industry," she said.

"The fund is targeted at partners who, like Hort Innovation, share a vested interest in achieving this aim. This includes everyone from growers to researchers to commercial businesses working across the horticultural value chain."

INCREASING INVESTMENT

There are four key investments in the fund at present, with a total investment value of \$19.6 million. Two of these key projects are running over six years and are of particular interest to the vegetable and potato sectors, including *Innovative cold plasma for horticultural industries* (HN15000) led by the New South Wales Department of Primary Industries.

"This project is focusing on the development of a new tool to reduce food safety risks to both consumers and industry," Ms Casey said.

"The first phase of the project will assess the use of 'Supercharged Air' technology (using cold plasma) to

decontaminate fresh horticultural produce and nuts to mitigate the risk of food safety incidents and boost consumer confidence."

Another project that could benefit the vegetable and potato industries is led by the University of Queensland, entitled *Naturally nutritious and simply red* (HN15001).

"One of the main objectives of the *Naturally nutritious* project is to provide initial research into innovative and appealing products that are nutrient-dense, can be differentiated in the marketplace, and are visually attractive and flavoursome," Ms Casey said.

Naturally Nutritious addresses key investment themes within the fund including the development of value-added nutritional foods and meeting consumer expectations for Australian fresh produce. This project currently involves strawberries, macadamias and purple sweet corn.

Two other projects under this fund have included *Consumer insights into nuts* (HN16001) and *Nuts for Life – educating health professionals* (HN17002).

INNOVATION IN FOCUS

These projects are all cross-sectoral, with Hort Innovation providing regular updates to industry on its Hort Frontier investments. Ms Casey said it strives to drive alignment with current initiatives where possible.

Hort Innovation welcomes feedback from growers on any of its projects, including Hort Frontiers.

"To date, we have not received specific feedback from vegetable and potato growers; however, we would welcome hearing from levy payers," Ms Casey said.

INFO R&D

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

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

These projects have been funded by the Health, Nutrition and Food Safety 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.

CALENDAR

23 NOVEMBER 2018: HORT INNOVATION ANNUAL GENERAL MEETING

Where: Brisbane, Queensland

What: All levy-paying members of Hort Innovation are invited to attend the Annual General Meeting on 23 November in Brisbane. Hort Innovation is charged with investing more than \$100 million per year into research, development and marketing activities using industry levies, contributions from the Australian Government and other sources.

Further information: horticulture.com.au/annual-general-meeting-2018

9-10 JANUARY 2019: POTATO EXPO 2019

Where: Austin, Texas, United States

What: Potato Expo is the largest conference and trade show for the potato industry held in North America. It offers educational programming on the top issues facing the potato industry, provides networking opportunities and showcases the latest products and services for potato production and distribution.

Further information: potato-expo.com

24-26 JUNE 2019: HORT CONNECTIONS 2019

Where: Melbourne Convention and Exhibition Centre

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

Further information: hortconnections.com.au

24-27 MAY 2021: WORLD POTATO CONGRESS

Where: Dublin, Ireland

What: The 11th World Potato Congress will be held in Dublin, Ireland alongside the Europat Congress, and it is expected that 1,000 growers, researchers, producers, traders, processors and manufacturers will attend. The event will focus on "the changing world of the potato" and will take into consideration issues such as climate change, sustainable production, food security and making use of modern technology.

Further information: potatocongress.org



Establishment of potato crops can be severely affected by infestations of African black beetle adults. Images courtesy of Stewart Learmonth, DPIRD.



African black beetle chew potato stems at the ground level, resulting in the stem wilting before it dies.



In potato crops with a heavy infestation of whitefringed weevil larvae, high levels of damage to tubers can occur.

PROJECT INVESTIGATES POTATO PESTS AFFECTING THE WEST

Over 20 years ago, a project was undertaken in Western Australia that focused on soil insect pests of potatoes – namely the African black beetle and whitefringed weevil. Project lead Stewart Learmonth spoke to *Potatoes Australia* about the research and its findings, including how the outcomes have influenced current-day growing practices.

African black beetle (*Heteronychus arator*) and whitefringed weevil (*Naupactus leucoloma*) are destructive soil insect pests found in potato growing regions around Australia, and they are particularly prevalent in Western Australia.

Both insects are characterised by their unpredictability, patchy distribution hidden in the soil and a high degree of impact at low densities.

African black beetle can affect potato crop establishment, especially in summer crops when the new adults emerge from the summer population of larvae. The adults chew the stem of the potato plant and can kill it; they can also attack potato tubers later in the crop cycle. During autumn, when conditions are appropriate – that is, high humidity and reasonably high air temperatures – the new population of adult beetles can fly and disperse, invading crops. It is difficult to know whether a potato crop is infested with African black beetle.

Whitefringed weevil larvae cause the most damage to potato crops (rather than the adult weevil). It is at the soilborne larval stage when it attacks, leaving channels and deep holes in tubers. Adults may also be present on the borders of potato crops and feed on the leaves of potatoes; however, this is extremely uncommon.

According to Western Australian Department of Primary Industries and Regional Development (DPIRD) Senior Entomologist Stewart Learmonth, African black beetle is more likely to be a problem in the south-west of Western Australia, while the weevil is primarily a pest in the regions of Manjimup, Pemberton and to a lesser extent, Albany and Busselton.

To assist growers in the battle against these pests, a project entitled *Soil Insect Pests of Potatoes* (PT00021) was undertaken in the state. Facilitated by the Western Australian

Department of Agriculture (now DPIRD) and the CSIRO Division of Entomology, this project was a strategic levy investment under Hort Innovation Fresh Potato Fund.

INVESTIGATING BIOLOGY AND CONTROL

Mr Learmonth led the three-year project jointly with Jon Matthiessen from CSIRO from 1992-95. He said the reason for undertaking the research was to clarify the biology of the insects and investigate different means of control with a strong emphasis on insecticide options, as previous methods of using persistent organochlorine insecticides had become unavailable.

To help clarify the biology of the insects, soil samples were put through a floatation chamber to identify the larval stage of the whitefringed weevil and extract the larvae from the soil.

Soil samples were also taken for African black beetle in pasture before potato crops were planted, which helped to identify insect numbers. It was found that the main source of African black beetle in potato crops were resident beetles that had bred in the preceding pasture. In many summer-planted crops, there was supplementary infestation by small yet significantly damaging numbers of flying beetles in autumn.

Light traps for African black beetles were also used to track flight activity. This had the potential to warn growers when fly-ins were arriving so they could apply a supplementary insecticide during crop growth.

"We tried to marry those two parameters together in looking at pest populations and how to manage them. We were then using that information to generate locations for more detailed work in potato crops based on the use of insecticides," Mr Learmonth said.

MANAGING BEETLES AND WEEVILS

A major challenge in avoiding damage from soilborne pests in a high-value crop such as potatoes is to develop practical, cost-effective monitoring techniques, whereby growers have confidence to decide non-application of insecticides is the correct decision.

Pre-crop monitoring for pest presence was successful in a scientific sense, but probably cost-prohibitive at the intensity required for confidence by growers. Also for African black beetle, the use of a monitoring tool such as a light trap to warn of immigrant flights of beetles in summer is likewise problematic to maintain. As explained below in relation to whitefringed weevil, growers can develop confidence to not treat some paddocks based on experience over time.

The project revealed that application of pesticides incorporated into the soil prior to planting potatoes remained generally the most effective option for the control of these soil insects.

It was found that African black beetle has proved to be highly susceptible to the application of insecticides to the surface of the pasture in late winter/early spring, while testing of insecticide resistance in African black beetle from 1992-94 showed that its susceptibility to chlorpyrifos was unchanged.

"Chlorpyrifos has been under scrutiny but it has been a very reliable soil insecticide for control of black beetle and we just hope that persists," Mr Learmonth said.

There was also major success in improving the effectiveness and consistency of control through the use of the soil fumigant metham sodium, which has been fully adopted by growers in regions affected by whitefringed weevil. The application of metham sodium in late winter/early spring on spring-planted crops was found to have aligned with the biology of the weevil, which at the larval stage has a higher susceptibility to toxins.

"The growers are using metham the way it should be used; putting it underground straight up and putting it at the depth or sealing the soil after it's applied, so it's doing the job in the soil without escaping to be a secondary problem to other people," Mr Learmonth said.

"Having said that, we need to be looking at other strategies in the future for controlling both whitefringed weevil and African black beetle, should we lose any of these very valuable products."

While Mr Learmonth said his team didn't have much success with the option of biological control agents (primarily micro-organisms), there is always room for improvement in this area.

"The use of biologicals, and going down the organic track, is always an attractive proposition but given the pest status for soil insects in potatoes, low numbers of insects equates to high levels of loss to a high value crop like potatoes," he said.

"Biologicals would have to be well-researched and have a really good fit in a production system. In a potato system where low numbers of insects are important, they would have to demonstrate high levels of efficacy and reliability in controlling the pests."

GROWER OUTCOMES

Mr Learmonth said there was some angst among Western Australian potato growers as whitefringed weevil and African black beetle continue to be a problem today. However, there is confidence in the crop protection products and practices proven to control these pests.

"Some growers have confidence in looking for these insects within crops, combined with a few years' experience with the on-farm rotation system for potato growing. They're now able to have confidence both at the time of planting and also the paddock in which they're planting, whether or not there's going to be a risk for whitefringed weevil in particular or if they can break the cycle of these insects," he said.

"Growers are still relying heavily on pesticides for crop protection but they have the confidence that those products are going to do the job and give them a crop that they can sell with little or no soil insect pest damage."

Mr Learmonth added that there is potential for further research into the African black beetle, particularly in terms of a warning device if it flies into a crop, as well as potentially lowering beetle populations through the use of rye grasses that contain endophytes.

INFO

For more information, please contact Stewart Learmonth at stewart.learmonth@dpird.wa.gov.au.

The final report for this project is available on InfoVeg. Readers can search 'PT00021' on the InfoVeg database: ausveg.com.au/infoveg/infoveg-database. This project has been funded by Hort Innovation using the fresh potato research and development levy, co-investment from the Department of Primary Industries and Regional Development and contributions from the Australian Government.

Project Number: PT00021



ON-FARM BIOSECURITY: PREVENTING THE (SEEMINGLY) INEVITABLE

In this edition, AUSVEG Biosecurity Adviser Dr Kevin Clayton-Greene discusses how a robust on-farm biosecurity system can protect Australian potato growing operations from the threat of pests and diseases, particularly those that seem inevitable to spread or arrive on our shores.



I have heard it often said that it is inevitable that pest 'X' will arrive. This is particularly true in discussions around the tomato-potato psyllid; the wisdom being that it will make it to the east. I don't necessarily subscribe to this view. While it is prudent to prepare for this eventuality, it is not inevitable and the use of this phrase can lead to a self-fulfilling prophecy.

Although some things such as death are inevitable, most are not, particularly those that are human-mediated. However, if we adopt the position that an event is inevitable human behaviour, it suggests that we will automatically become less careful about prevention. Alongside this, many also despair at the apparent lack of interest among the public about biosecurity, adding to the feeling of 'inevitability'.

There are many things we can do to prevent so-called inevitable occurrences and in this month's article I want to look at this in the context of on-farm biosecurity. This topic has a particular resonance with potato production due to the relationship between soilborne pathogens and pack out.

CONTROLLING THE THREAT OF DISEASE

In Australia and elsewhere in the world, there have been tens of millions of dollars expended on soil disease research on a number of what I would term 'intractable' soilborne diseases such as powdery scab, *Fusarium* and *Rhizoctonia* spp. While we have made great strides in our understanding and detection of these diseases, it is also true that their control remains problematic.

In the case of powdery scab, this disease (once found) persists for a very long time in the soil and is something that no-one wishes to introduce onto their property. Furthermore, it is not just bacteria and fungi that can persist in soil, but many viruses also have this ability. As producers we are on the front line of trying to control these threats to our livelihood, but we are also pitting ourselves against millions of years of evolution that has equipped these pathogens and pests with very sophisticated breeding systems to help overcome barriers to their existence.

This manifests itself in resistance to plant protection products and the ability to exploit new hosts when these pests are introduced into a new region/country etc.

SO WHAT DOES ALL THIS HAVE TO DO WITH BIOSECURITY?

As producers, we have limited or no control over what happens in the broader community; however, we do have complete control over what happens on our property and also what enters and leaves it via human activity. This is where on-farm biosecurity is important and also one of the 'cornerstones' of a robust biosecurity system.

Curative and prophylactic control of pests/pathogens can be a significant cost and every new pest adds to that burden. It is true that having a good on-farm biosecurity system has a cost, but it is also true that, in most cases, this is repaid by lower pest and disease input costs.

Good on-farm biosecurity can greatly reduce the potential for the introduction of new pests and diseases from elsewhere, but it can also significantly reduce pest pathogen pressure by removing reservoirs of pests. Many weed species proliferate because they are closely related to the cropping species and therefore have the same or similar herbicide profiles as the crop (e.g. nightshade and potatoes, wild radish and other brassicas). Persistence of these weeds will ensure there is a ready source of disease or pests for the next time a closely-related crop is planted, ensuring the 'inevitability' of re-infection.

Similarly, vehicles and people entering the farm or moving around carry a host of diseases on their surfaces.

By implementing biosecurity on our properties which will interact with all visitors, we can also greatly increase awareness among not only our peers but also others such as contractors; friends and family; transport operators; utility providers etc. This can only have a broader beneficial impact by raising general awareness of biosecurity as well as improving our own circumstances.

There are good and comprehensive resources available to assist in developing a biosecurity plan at farmbiosecurity.com.au, a joint effort by Plant Health Australia and Animal Health Australia.

INFO

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



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At the time of writing this report, Crookwell is coping well with the state-wide drought. We are currently taking stock of our own seed supplies and measuring ground to allocate next season's certified seed crop.

Although we have had some late winter rain through August, there was little to no run off into storage dams. Any irrigation dams with adequate water in them are well located or spring fed. This makes it difficult to find a nearby paddock that has enough water. Our paddock rotation in the Crookwell area is quite good. With only a few growers, most paddocks get a 10-plus year rotation but water has now become the limiting factor.

A lot can be said about the benefits of a quick maturing crop in a dry season. The crop is all

but there – needing only one or two passes with the irrigator and you may even escape irrigating completely if you get a storm.

New varieties are continuing to show traits that lend themselves to vigour in maturing and this has become very desirable for a potato grower. When you look at killing a crop off in under 60 days then your management activities are a lot easier, and it takes a lot of money and time out of the growing procedure.

At this stage paddocks are just about to be ploughed and seed is stored in anticipation of more rain and a good seed bed. We are hopeful this will happen at least to a certain degree.

We are looking forward to a wetter 2018-19 season, as everyone else would be, and hoping Mother Nature will come to the party.



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It has been a busy few months for AUSVEG SA in the agri-political space and the association is currently undertaking a broad range of advocacy activities on behalf of South Australian growers.

- AUSVEG SA was recently involved with state-wide reforms pushing for greater skilled and unskilled visa access for South Australia to address sector-wide skills shortages. AUSVEG SA has long worked in partnership with Migration Solutions and the Primary Industry Skills council in pushing for reform.
- AUSVEG SA recently participated in policy discussions with AUSVEG and other state groups on issues including AgVET chemical harmonisation and an agriculture visa which is being developed through the National Farmers' Federation Horticulture Council. We also provided a state-based submission calling for increased off-label chemistry access for producers in line with what is available for South Australian bunch line growers under the current legislated exemption. AUSVEG SA

is also working with leading businesses and transport companies on the Northern Adelaide Plains to facilitate greater road train transport access to improve freight efficiencies for member businesses.

- AUSVEG SA met with senior trade officials from the Department of Investment and Trade and will be supporting a number of inbound delegations of high-level buyers and trade officials from Asia and the Middle East.
- AUSVEG SA continues to advocate on behalf of grower interests with regard to the construction for the \$150 million Northern Adelaide Irrigation Scheme and are working closely with members as part of the current commercial negotiation process engaged in with SA Water.

AUSVEG SA is always keen to hear about the issues facing growers of our state. We pride ourselves on our track record of getting things done and encourage growers to call the AUSVEG SA Chief Executive Officer with any issues.



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Growers must now be aware of recent changes to the vegetable and unprocessed potato levies.

As of 1 October 2018, the Emergency Plant Pest Response (EPPR) component of the levies and charges have changed from:

- Nil to 0.01 per cent of the amount paid at the first point of sale for vegetables; and
- Nil to 10 cents per tonne for unprocessed potatoes.

The funds raised through the EPPR levy will be used to pay industry's share of costs to the tomato-potato psyllid biosecurity response and a 12-month Transition to Management plan.

To find out more information relating to the EPPR levy, please contact the AUSVEG VIC State Manager.

AUSVEG VIC has refreshed and recreated the AUSVEG VIC website which is built to serve its members and the wider Victorian potato and vegetable industry.

The new website is now fully operational with key features that allow growers to conduct dynamic searches for information and allow easy access to fact sheets and a calendar of events taking place across the state. This site has been launched to act as the face to Victoria's vegetable industry. Please visit ausvegvic.com.au for more information.

YOUNG POTATO PEOPLE

G'day again,

I hope you're doing well and your stress levels are not too high.

Stress is a funny thing. It can be an incredible motivator pushing you to get the job done. It can also cripple you to the point that you can't get out of bed in the morning, making it seemingly impossible to do even a basic task. And the hardest thing with stress is recognising when you have too much of it.

The world we live in at the moment is designed to create stressful situations in the hope that this will increase productivity, and in turn increase profitability. We deliberately push ourselves too far on a daily basis in the hope that we will get a bit better.

This can work to motivate us, but when outside forces start to impact our stress levels as well, then we start to get overwhelmed. Things such as drought which, at the time of writing this, a huge chunk of Australia is suffering from.

So, what do we do to de-stress? How do we reduce the stress to stop ourselves getting overwhelmed? I personally really enjoy sport. Once a week I play volleyball and at times get on a motorbike and ride around in the bush. Or go fishing. I also find sitting in the tractor can help settle me down at times. It can also leave you alone thinking about everything that is making you stressed, and make the stress increase.

Everyone has something that they enjoy and makes them forget about the daily grind.

Now I must clarify that I am not in any way an expert in mental health, and I do get stressed from time to time. I think I have started to recognise when I'm getting stressed but it's not something that you can see. It's not as if a big neon sign appears in front of you saying STRESS ALERT (although that would be helpful). The main thing I would recommend is if you're feeling a bit overwhelmed, talk to someone. Your local GP will be able to help.



Also, AUSVEG has published a list of mental health resources which can be found online: ausveg.com.au/mental-health-industry/resources-2. Please feel free to take advantage of these.

- Stu



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