

# potatoes

## australia

| October - 2019



MIA ROSE | GETTING INVOLVED IN INDUSTRY DISCUSSION  
POTATO R&D FORUM | GAINING AN INSIGHT INTO INDUSTRY ISSUES  
RESEARCH UPDATE | INTRODUCING THE SOIL WEALTH AND ICP PROJECT



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biotype B)



Green peach aphid  
(*Myzus persicae*)



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Bill Bulmer  
AUSVEG CHAIR

James Whiteside  
AUSVEG CEO

Shaun Lindhe  
COMMUNICATIONS MANAGER

Michelle De'Lisle  
WRITER/JOURNALIST

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

PRINT  
RA Printing

GRAPHIC DESIGN  
Stray Orbit

COVER PHOTOGRAPHY  
Chris Kershaw Photography

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

CONTRIBUTORS  
Richard Falloon  
Growcom – Fair Farms Initiative Team  
Scott Mathew  
Alan Nankivell  
Wayne Richardson  
Soil Wealth/ICP project team  
Kristen Stirling  
Peter Wright



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**AUSVEG**  
**Hort Innovation**



## Editorial

The forecast is in – we are heading for a hot, dry end to spring and a hot summer. According to outlooks from the Bureau of Meteorology, it is not good news for anyone who is looking for relief from the drought. Rainfall is likely to be below average across most of the country, excluding northern Western Australia, for the remainder of October and November. The dry outlook for southern and north-eastern Australia continues into December.

Daytime temperatures are likely to be above average across Australia for the remainder of 2019 and into early 2020.

Nights are likely to be warmer than average for November in Western Australia, the western Northern Territory, southern and western Queensland and eastern New South Wales. For December to February, nights are likely to be warmer than average nation-wide.

What does this mean? Bushfires, drought, dust, heatwaves and frost are more likely, and it is unclear whether this will ease up in the following seasons.

Australia recorded its ninth driest winter, and the Murray-Darling Basin experienced its driest winter since 1982. It was also the driest January to August on record for the southern half of Australia.

Growing conditions are tough all around the country. Root zone soil moisture remains below average in many key agricultural areas.

This all highlights the struggles that all farmers have been telling industry, politicians and the public for years.

While we cannot control the weather, we can make an effort to look after each other and check in with friends, neighbours and family who are doing it tough.

It is vital to be honest with yourself and the people around you and talk openly about all aspects of your health, including your mental wellbeing. It is critical that people seek help if you or someone you know is experiencing difficulties.

There are mental health organisations that provide resources and advice on how to deal with personal mental health issues or those that arise in your workplace, communities, friendship groups or families. Some of these resources can be found on the AUSVEG website: [ausveg.com.au/mental-health-industry](http://ausveg.com.au/mental-health-industry).

When the conditions are as tough as they are right now, we cannot afford to neglect our community, our friends or our families – but we also cannot afford to neglect ourselves. As we all deal with the weather, let's not forget that we need to look after ourselves as well.



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## Message from the CEO

The horticulture industry's struggles to access a reliable and competent workforce continue to be at the forefront of AUSVEG's advocacy agenda. This month a delegation comprising AUSVEG Chair Bill Bulmer, Deputy Chair Belinda Adams, National Manager – Public Affairs Tyson Cattle and myself headed to Canberra to advocate on behalf of growers for practical solutions to the horticulture's labour challenge.

We met with:

- Tasmanian Senator Jacqui Lambie.
- Minister for Immigration David Coleman.
- Assistant Minister for Regional Development Nola Marino.
- Member for Mallee Anne Webster.
- Shadow Minister for Immigration Kristina Keneally.
- Victorian Senator Raff Ciccone, and
- the offices of the Minister for Agriculture Bridget McKenzie, One Nation leader Pauline Hanson, Attorney General and Minister for Industrial Relations Christian Porter and Minister for Employment Michaelia Cash.

AUSVEG advocated for improved information for backpackers, allowing for them to make informed decisions about where they choose to work in horticulture, as well as the introduction of a National Labour Hire Licencing Scheme and a Horticulture Industry Labour Agreement, to allow growers around Australia to have greater access to a semi-skilled and skilled workforce.

Feedback from various Ministers was extremely positive, and AUSVEG will continue to work with government to get the best outcome for growers.

If you have any feedback or comments regarding skilled shortages in your business, growers are encouraged to get in contact with AUSVEG National Public Affairs Manager Tyson Cattle at [tyson.cattle@ausveg.com.au](mailto:tyson.cattle@ausveg.com.au).

**James Whiteside**  
CEO  
AUSVEG



L-R: James Whiteside, Belinda Adams, Minister for Immigration David Coleman, Bill Bulmer, Tyson Cattle.

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## Opening a new chapter for Australian horticulture

Horticulture is Australia's second-largest agricultural sector by value and, having grown in value by 40 per cent over the five years to 2017-18, is the fastest-growing sector in agriculture. To plan for and tackle issues facing horticulture, Hort Innovation has released its strategy for 2019-2023, with three strategic pillars at its core.

Launched on 1 July 2019, the Hort Innovation Strategy 2019-2023 lays out the organisation's focus, goals and key activities for the next four years, all of which are closely aligned to the industry's needs, now and into the future.

The strategy was developed with vital input from growers and horticulture members through consultation workshops and via an online form.

### Purpose and role

Hort Innovation exists to drive a prosperous and healthy Australia by providing the best knowledge and solutions; connecting growers and consumers to drive demand; and investing in solutions to improve productivity. These combine to increase the sustainability and prosperity of Australian horticulture. Hort Innovation is committed to sustainable growth in horticulture, with the overarching aim of increasing the sector's value to \$20 billion by 2030.

### Focus areas

The Hort Innovation Strategy 2019-2023 is defined by three strategic pillars:

- Drive knowledge and innovation into horticulture industries.
- Deliver the highest value R&D, marketing and trade investments across industries, now and into the future.
- Enable activities that drive all strategic imperatives.

Under each strategic pillar, the Hort Innovation Strategy 2019-2023 lays out key initiatives and activities.

### Extension and adoption

There will be the development of a new Hort Innovation Extension & Adoption function and framework, focusing on communicating and extending practical investment outcomes, resources and knowledge directly to growers to drive adoption.

### A sustainability framework

Hort Innovation will build a sustainability framework for Australian horticulture to help the sector proactively manage emerging issues now and in the future. This will include setting benchmarks to show progress over time.

### Work around markets and consumers

This new strategy will see Hort Innovation sharpen its focus on consumer insights and the understanding domestic and international markets. To help growers boost productivity and quality to act on these insights, the strategy will guide Hort Innovation to invest in innovations and the delivery of high-value trade and marketing investments to support them to change and adapt practices.

### A change in approach

Under the new strategy, Hort Innovation will work to deliver more multi-industry collaboration in RD&E, marketing and trade – supporting more effective and efficient outcomes for growers and the wider horticulture sector.

Find out more 

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

# A strategic investment: Potato panels unite

At the joint Fresh and Processing Potato Strategic Investment Advisory Panel (SIAP) meeting held on 26-27 June 2018 at The Park Royal Hotel, Melbourne Airport, members recommended Hort Innovation consider amalgamation of the two SIAPs.

Reasons cited included having a more streamlined approach in giving R&D investment advice, making sure that the SIAPs can review the same investments and reducing the cost of holding SIAP meetings.

## Coming together

After consultation with SIAP members over a six-month period, Hort Innovation advised it would amalgamate the Grower and Processor SIAPs into one SIAP of 12 members. However, **the levies will remain separate**. The new SIAP is a mix of previous and new members, with all new SIAP members undergoing an interview process before being chosen.

SIAP members represent fresh, seed/tuber and processing potato growers, and the crisping and frying processing industry.

The next SIAP meeting is planned to be held in November 2019. This will include a review of current investment areas in line with the Grower and Processor Strategic Investment Plans 2017-2021 and identification of areas for future investment.

## The new SIAP members: Fresh Potato and Potato Processing

Name	Company	Position	Based in
Daryl Lohrey	Lohrey Pastoral	Grower	Tasmania
Ben Dowling	Dowling AgriTech	Grower	SA
Pennie Patane	Patane Produce	Grower	WA
Tim Heysen	Heysen Partners	Grower	SA
John Cresswell	JE & JA Cresswell	Grower	Tasmania
Ian Simpson	The Mitolo Group	Head of Seed and Procurement	SA
Kathy Ophel- Keller	South Australian Research and Development Institute (SARDI)	Research Chief – Sustainable Systems	SA
Callum Fletcher	AUSVEG	Biosecurity Coordinator	Victoria
Jo Tubb	Simplot Australia	Agricultural Manager - Devonport	Tasmania
Josh Opas	McCain Foods (Aust)	Agriculture Manager	Victoria
Brett Pemberton	Pepsi-Co Australia and New Zealand	Agronomy Manager	Queensland
Anne Ramsay	PPAA	Executive Officer	Victoria



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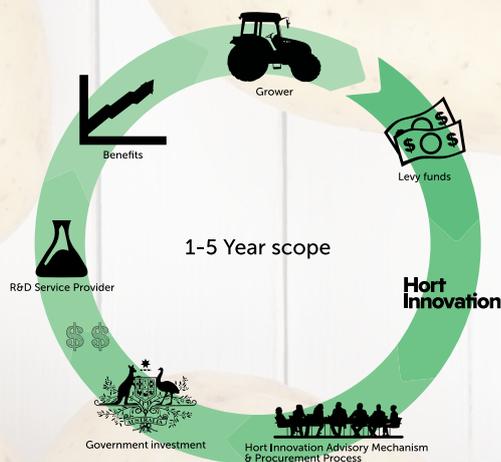


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# THE FRESH POTATO R&D LEVY AT WORK

## 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.

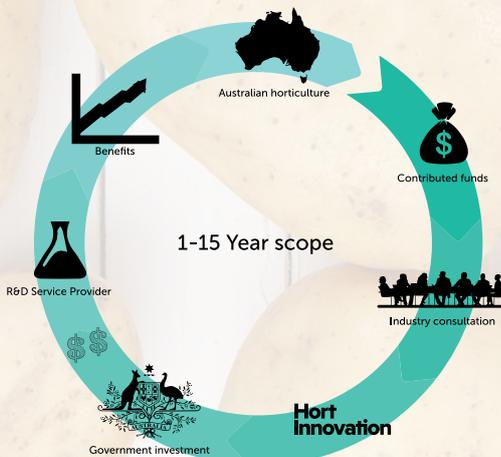
Strategic levy investments have a one- to five-year scope and the R&D is designed to directly benefit growers in the potato industry. Project topics range from pest and disease management to biosecurity matters, with findings communicated through a variety of channels, including *Potatoes Australia*.

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/growers/potato-fresh-fund/](http://horticulture.com.au/growers/potato-fresh-fund/).

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

You can read more about Hort Frontiers and the seven funds within it at [hortfrontiers.com.au](http://hortfrontiers.com.au).

## 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/about/investing-is-our-business/concept-proposal-form/](http://horticulture.com.au/about/investing-is-our-business/concept-proposal-form/). Growers are also encouraged to reach out to the SIAP panellists for the industry (available from the Potato – Fresh Fund page).



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Photography by Chris Kershaw.

## A rosy future for WA potato growing family

From milking cows in Europe to growing spuds in rural Western Australia, Mia Rose has enjoyed a varied career in agriculture – and she has no plans to hang up the boots just yet. Michelle De'Lisle speaks to Mia about the challenges she and her family have faced, the importance of getting involved in potato industry discussions, and her love for the farm.

Mia Rose's career in agriculture has spanned three countries. Originally from Sweden, Mia worked in a dairy operation before jetting off on exchange to New Zealand for eight months to pursue her farming passion. From there, Mia met her now-husband Graham (a third-generation grower) and moved to Myalup, a fertile potato and vegetable region in Western Australia.

That was 30 years ago, and the pair haven't looked back. Along with their 24-year old son Matthew and his girlfriend Isabelle, Mia and Graham produce ware and seed potatoes; Broccolini; lucerne hay; cattle and sheep; and dabble in garlic and sweetpotato.

### Tackling challenges

Like all potato growers across Western Australia, the Roses' growing operation was impacted by the arrival of tomato-potato psyllid (TPP) and the outbreak of *Dickeya dianthicola* in 2017.

Although the trade restrictions between Western Australia and the rest of the country have now lifted, it was a difficult period for growers over in the west.

"It's been tough for everybody here in the potato industry," Mia says.

"But I think sometimes when times get a bit tough, you need to look at other opportunities."

### Giving back

Until recently, Mia was the treasurer of WA Potatoes, formerly known as the Potato Growers Association of Western Australia, which is the peak industry body representing around 80 potato growers across the state.

The organisation negotiated with the state government for an assistance package for the west's potato growers when the potato industry underwent deregulation in 2016, and it assisted again when TPP and *Dickeya dianthicola* were detected the following year.

"WA Potatoes is looking at different things and helping as much as it can, looking at new opportunities and help for growers when needed. I think it's good to have a body like that just for potatoes, even if Western Australia is not that big," she says.

"WA Potatoes is doing such a good job for the industry. When we had the deregulation of the potato industry in 2016, it was working so hard for growers to create the best outcome in the situations that they were in.

"We wouldn't have gotten anything out of the Government if we didn't lobby hard for it. The package that the potato industry received has been spent on worthwhile research and development for potatoes."

Although she is no longer with WA Potatoes, Mia remains a member of the Agricultural Produce Commission's Potato Producers committee. She relishes her position on the committee, and enjoyed her previous role too.

"You're there to implement plans and help to make the industry better for growers, which is really rewarding," Mia says.

"The growers who are involved on these committees have got expertise across different sectors, which gives you a better foundation when it comes to discussing industry issues and making decisions."

Mia recommends other potato growers get on-board and join in industry discussions.

"People are so busy, and a lot of people don't want to be involved, but it's really good if they can. If you want to be part of making decisions, you've got to be there to help."

### Love of the land

Mia's passion for farming has taken her halfway around the world, and it hasn't waned. When AUSVEG spoke to Mia, she was helping Matthew in the potato paddock – he was on the harvester; her on the bin trailer.



Mia Rose with her husband Graham (left) and son Matthew.

"I love farming in general – it's great being outside all the time and you're seeing how the crops grow," she says.

"I don't come from a farm but I was always interested in farming, and when I chose to study, I went to ag school. I never regretted it because you just meet so many wonderful people in the agriculture industry."

According to Mia, the agriculture landscape has changed over the years.

"Farming is not what it used to be. It's so technical and you've got to know so much – chemistry, new technology, computers – even buying a tractor these days; you don't just buy a new tractor, you have to say what you need in it," Mia says.

Each year, Mia extends her knowledge to overseas students who are undertaking an exchange program like she did over three decades ago. They stay for six months and gain an insight into all aspects of the farm.

"I think a lot of people go on exchange programs because they want to go to their own farm back home with their knowledge. Wherever you go, you always learn something."

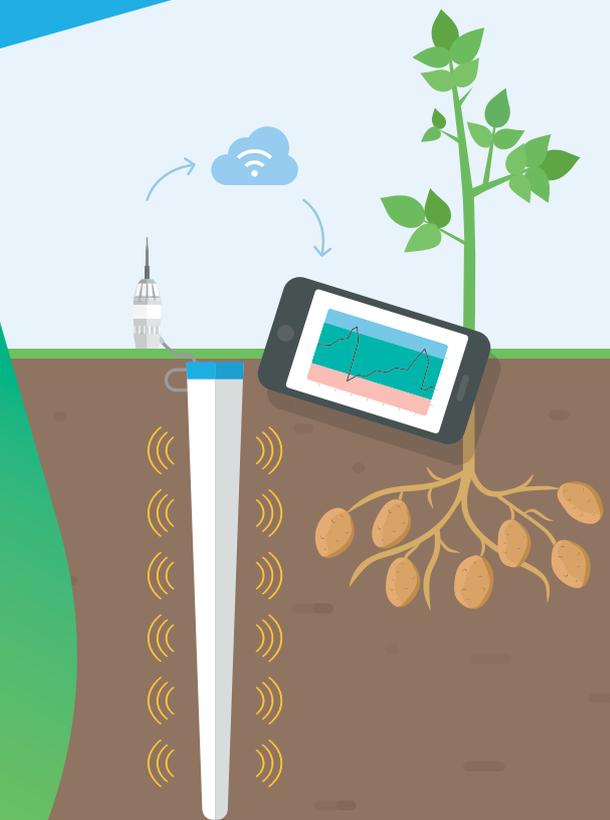
There are changes afoot in the next decade or two, including potentially handing the business over to the next generation. However, Mia remains upbeat about the future of the farm and the business.

"You have to evolve, otherwise you get left behind," she says.

"You've got to be forward-thinking. Time is money, so it's about doing things as well as you can. We just want to continue to do that."

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## Tackling the Australian potato industry's biggest issues

Over 80 potato growers, service providers, and industry representatives gathered for the Potato Industry Pest and Disease R&D Forum, which was held in Melbourne on 26 June during Hort Connections 2019. Attendees heard from thought-provoking speakers and received the most up-to-date information on a range of issues facing the potato industry, as Kristen Stirling reports.

International speakers, researchers, agronomists and growers converged on the Melbourne Convention and Exhibition Centre during Hort Connections 2019 to present the latest R&D outcomes, as well as discuss their experiences of managing key pests, diseases and biosecurity risks facing the Australian potato industry.

The Potato Industry Pest and Disease R&D Forum focused on the management of pests such as tomato-potato psyllid (TPP), natural soil suppression of the soil-borne disease powdery scab, and ways to promote soil health. A mix of short presentations, panel sessions and plenty of time for Q&A was used to keep attendees engaged.

### Forum highlights

Powdery scab continues to be a problem for the Australian potato industry, resulting in estimated losses of \$13.4 million per year. The powdery scab pathogen attacks plant roots, adversely affecting root function and plant growth, progressing to the formation of unsightly powdery scab lesions on potato tubers. The good news is that there are a number of research projects currently investigating these diseases and how they may be effectively managed.

In New Zealand, Professor Richard Falloon and his team from Plant and Food New Zealand have been conducting pot trials using the naturally *Spongospora*-suppressive Pukekohe soil to determine how these soils affect this pathogen. A key finding was that some suppressive soils have naturally high manganese levels compared to soils that are conducive to powdery scab. This suggests that the application of manganese could be investigated to understand its role in disease suppression. Suppressiveness of *Spongospora* could be transferred by adding some suppressive soils to a conducive soil, indicating that the suppressiveness could be induced by the specific microbial populations. Soil

microbial profiling has shown differences between suppressive and conducive soils. However, microbiomes are complex and diverse, so it is unlikely that practical disease management treatments could be developed by relying on microbiology alone. More about Professor Falloon's project can be found on page 36.



Images courtesy of RM Consulting Group.

Professor Calum Wilson (pictured above) at the Tasmanian Institute of Agriculture leads a large team of researchers who recently commenced a project investigating how powdery scab attacks roots and if it is possible to block early infection. They will also identify the gene markers associated with resistance to root binding and using this information to determine if some potato varieties are better at resisting root attack by powdery scab than others (e.g. the susceptible variety Russet Burbank).

Good soil health is the base for effective disease management and protection against pests. Carl Larsen from RM Consulting Group highlighted the range of online resources and activities available for the potato industry through the Soil Wealth and Integrated Crop Protection



(SWICP) project, which focuses on building soil health and protecting crops by providing growers with the opportunity to learn, experience and connect on topics such as biofumigation, composting, strip tillage, good nutrition and irrigation and precision agriculture. The SWICP project conducts events such as field walks and masterclasses, develops resources, and implements demonstration sites on-farm. It also provides a monthly e-newsletter, social media updates and has a wealth of other resources online at [soilwealth.com.au](http://soilwealth.com.au). Find out more on page 33.

Dr Chad Hutchinson was an engaging speaker from the United States who presented research that the TriCal Group has sponsored to document the response of the soil microbe community to strategic soil fumigation over time using DNA analysis.

## PREDICTA Pt

PREDICTA Pt is a DNA-based soil testing service that allows growers to assess the level of soil-borne pathogens in a paddock prior to planting. Based on the test results, growers are provided with an indication of risk for multiple diseases, where the research on thresholds has been completed. Armed with this knowledge, growers can make better informed decisions on when and what to plant in the paddocks available for potato production.

Following its successful introduction in 2013, the PREDICTA Pt testing service has been expanding to help minimise the impact of soil-borne diseases on Australian potato growing operations. New tests for the pathogens that cause pink rot (*Phytophthora erythroseptica/drechsleri/cryptogea*), silver scurf (*Helminthosporium solani*) and Sclerotinia rot (*Sclerotinia sclerotiorum/minor*) have been developed within the last 18 months. Testing of isolates and symptoms has demonstrated that these tests correctly detect their target pathogens in Australia. Work is

underway to determine their sensitivity for pre-plant risk assessment.

Frank Mulcahy from Simplot provided an overview of the R&D that his team has been conducting to better understand variations in crop performance due to constraining soil conditions, in-field variability and pathogen populations. Frank has been using EM38 soil conductivity mapping, aerial NDVI imagery and yield mapping on harvesters to create maps that will guide management of particular cropping zones.

GPS mapping of locations within potato crops that have been tested for disease risk using PREDICTA Pt is also helping to determine the timing of disease proliferation and allowing for more strategic disease management. NDVI imagery has provided valuable crop vigour data that is easy to gather and is essential for the development of site-specific management of nutrition and irrigation/drainage in potato production.

The team will continue to improve the existing retrofit load cells on harvesters, and he encourages industry to push harvest machinery manufacturers to develop factory-fitted systems.

## TPP Panel

The potential impact of TPP in Australia; what we can learn from the incursion of TPP in New Zealand and Western Australia; and how the industry can best manage TPP and the risk of it spreading in the future was explored in a panel discussion.

Panel members were invited based on their experiences with TPP incursions in other areas, current surveillance activities or research on TPP. These included:

- Duncan McLeod (NZ Seed and Field Services) and Chris Claridge (Potatoes NZ).
- Paul Horne – IPM Technologies.
- Alan Nankivell – AUSVEG National TPP Coordinator.
- Callum Fletcher – AUSVEG Biosecurity Coordinator.

• Darryl Smith – WA potato grower. Questions to the panel were invited from the audience. This topic generated a lot of questions and discussion by attendees and there is clearly confusion/concern around the risk of TPP, and the bacterium it can vector, *Candidatus Liberibacter solanacearum* (CLso), spreading in Australia and how this would be managed. The issues raised and discussed included:

- How the TPP outbreak was handled in Western Australia, and lessons learned for the handling of similar situations. Of special concern was the lack of communication to industry (by regulators) leading to a high level of uncertainty and stress in the industry.
- The make-up of the 'eastern bloc' and what the arrangements actually mean for growers. The eastern bloc is the agreement between South Australia, Queensland, New South Wales and Victoria to ensure that trade between all states remain if TPP (without CLso) is found in any of the four states.
- The industry-driven New Zealand TPP/CLso management approach and how it could work in Australia, given the federal system.
- The lack of actual preparedness and vigilance on Australian farms (e.g. responsibility for biosecurity is mostly seen as an issue for regulators or organisations, not individual farm businesses).
- Monitoring for TPP and CLso – methods and whether it is adequate.
- The reluctance of growers and agronomists to report 'something unusual' given the potential repercussions.

The discussion clearly showed that those present had many unanswered questions about TPP/CLso, biosecurity arrangements in general and what they could do to protect their farms and their industry. →



## IPM extension

Paul Horne and Jessica Page from IPM Technologies have been working with potato growers in South Australia, Victoria, Western Australia, Tasmania and Queensland to demonstrate the effectiveness of an integrated (IPM) approach to managing key insect pests in commercial potato crops. The process involves conducting an initial workshop with interested growers and advisors to develop an agreed strategy and basis for implementation. This is followed by field demonstrations where Paul and Jessica help growers and advisors identify beneficial species, as well as pests, and assist with decisions on insecticide applications. The workshops and demonstrations are ongoing in Tasmania and Victoria, with expansion to other districts planned for 2019 and 2020.

David Oddie, an agronomist at DJ's Growers Services in South Australia, worked with Paul and Jessica as part of the IPM Extension project. David invited Paul and Jessica to work with him and potato growers on Kangaroo Island to build their confidence in identifying pests and beneficials and using a range of control measure (not just chemical) to manage pests. David identified the key changes as:

- Using a more holistic approach rather than prescribed.
- Learning to be comfortable with 'doing nothing'.
- Targeted use of insecticides.
- Learning how and what to monitor.

## R&D priority setting session

After the presentations, attendees were asked to identify the three pest and disease issues keeping them up at night and what they thought could be done

about them. Attendees were asked to break into groups based on their location (state) and discuss these issues and solutions as a group and then report back to the whole forum.

Discussion with industry members and researchers identified the following pest (insects and diseases) to be of greatest concern overall at the moment:

- Powdery scab.
- Blackleg complex.
- Zebra chip (CLso)/TPP.
- Nematodes.

The key opportunities to address these, and other pests, included enhancing Australia's biosecurity capacity by:

- Improving Australia's biosecurity preparedness for pests such as TPP through developing a national response plan, greater surveillance and collaboration/learning from other countries, such as New Zealand, who are already managing this pest.
- Managing pest incursions through better forecasting, particularly in view of climate change and greater unpredictability of weather conditions.
- Improving surveillance and diagnostic ability to detect, monitor and manage pests through the development and application of new technologies such as:
  - Automated 'smart' traps for rapid detection and early warning of pests.
  - Loop-Mediated Isothermal Amplification (LAMP) and Next Generation Sequencing (NGS) for rapid identification of pests.
  - Decision support tools such as CropScout app.

Achieving greater integration of how the industry manages key pests through:

- Increased uptake of an IPM approach to insect and weed management (particularly in view of increasing

resistance to key chemical groups or deregistration of products) and focusing on:

- Improved soil health (through controlled traffic, organic amendments, reduced tillage, better root health).
- Better understanding of pathogen/root interactions and mechanisms of resistance.
- New technology such as iRNA as an alternative control method.
- Up-skilling service providers/agronomists – their knowledge needs to be spread across a range of crops to help increase the benefit to the industry. Due to the distance between and isolation of growers, information exchange can be difficult.
- Improving seed quality – by addressing the gap between growers and the seed scheme, communicating/ extending current guidelines and harvest protocols better, and providing better 'care' for seed once it leaves the paddock.

### Find out more

The Potato R&D Forum is an annual event organised by Dr Kristen Stirling and Dr Doris Blaesing from RM Consulting Group to showcase pest and disease R&D of relevance to the Australian potato industry.

If there are particular topics or speakers that you would like to see at the 2020 Forum, please get in touch with Kristen on 0488 908 416 or at [kristens@rmcg.com.au](mailto:kristens@rmcg.com.au).

*Program Approach for Pest and Disease Potato Industry Investments* is a strategic levy investment under the Hort Innovation Fresh Potato and Potato Processing Funds.

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.

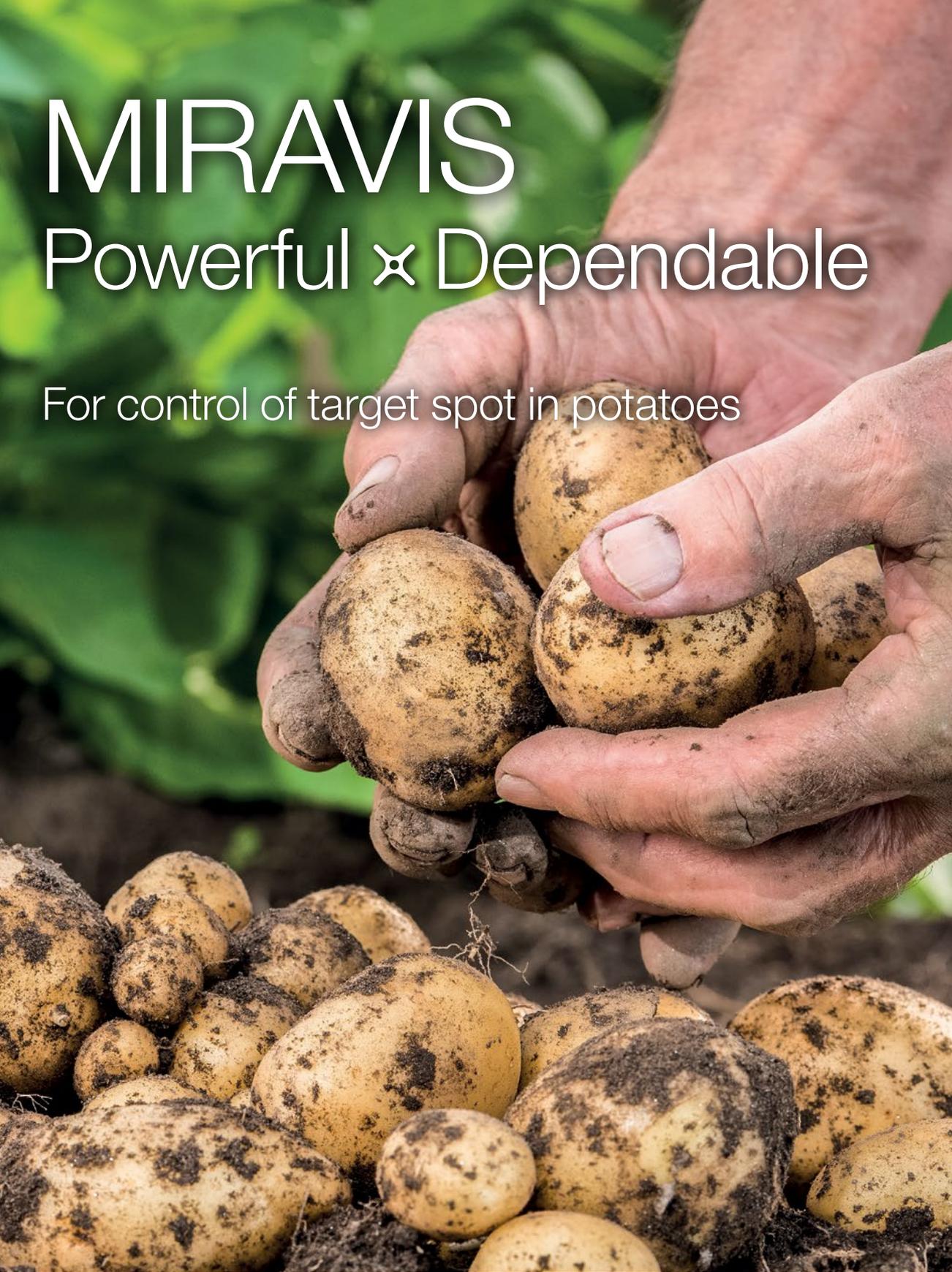
Project Number: PT17002

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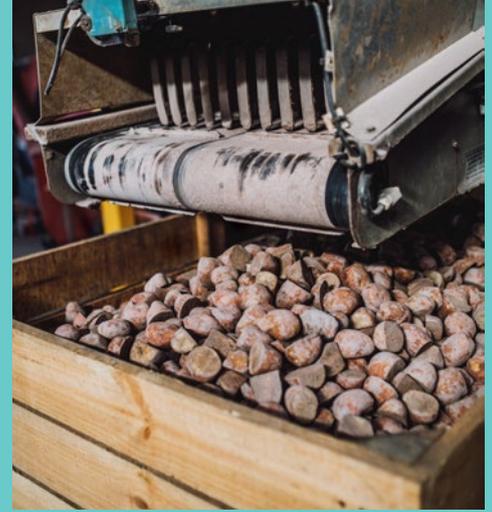
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## Tasmania's technologically sophisticated coolstore grows, boosting the Tassie potato industry

**A Federal Government grant has allowed seed potato operator Agronico to expand its coolstore operation, which will allow for increased production capacity for potatoes and other horticultural produce, as well as providing export opportunities to Tasmanian seed growers.**

Agronico is extending its services to more Tasmanian growers following the recent expansion of its coolstore.

The business's most recent project has expanded its coolstore to hold almost 14 and a half thousand tonnes of potatoes. This project included the extension of its coolstores, as well as opening their service to more Tasmanian growers.

Chief Executive Officer Robert Graham said that the project encompassed a 56m x 67m extension to the coolstore, and the project also included the introduction of hopper covers and a new machinery shed.

"Completion of this project enables Agronico to double production capacity, access new interstate and national export opportunities and support the region's potato industry by increasing overall productivity," Agronico Chief Executive Officer Robert Graham said.

The coolstore extension adds eight rooms to the existing ten, with each room holding 800 tonnes of potatoes. Storage capacity is now almost 3,000 cubic metres.

"The coolstores provides ideal storage conditions for potatoes until shipping, and we've continued to use the most advanced technology available," Mr Graham said.

"By varying the internal condition of the coolstore extension, which mirrors the

original space, we can expand the variety of fruit and vegetables we accommodate. This includes carrots, broccoli and onions. The facility is also ideal for storing berry canes and corn."

Mr Graham explained that the hopper covers make a difference to the quality and life of freshly-harvested potatoes by protecting them from frost and rain.

"Having a cover over the hoppers also meant harvest was completed in record time, processing around 300 tonnes per day, and we are now assisting other farmers in the region with their downloading and grading," he said.

### Booming business

For Agronico, the quick harvest resulted in a fast turnaround in sales, with most varieties selling within a month.

"Increasing the production of seed potatoes creates a flow-on effect for farmers and contractors around the state. For customers, the product is better because it is less stressed by carbon dioxide buildup and the seed potatoes have excellent vigour," Mr Graham said.

To support further development of the Tasmanian potato market, Agronico, has announced plans to build a large mini-tuber facility next door to the newly expanded coolstore.

Mr Graham said the new facility would have state-of-the-art equipment.

"It will comprise of 1,440 square metres of glasshouses and a tissue laboratory and it could be operating by autumn next year," he said.

"In our business, we start with tissue culture. We started doing research on hydroponic mini-tubers about 18 years ago, and it took probably seven to eight years to perfect it to the point we could

make it commercial."

Mr Graham said this is the only facility in Australia that is involved in the whole process from tissue culture to final generation seed production.

### Becoming export-ready

As the export markets for Tasmanian seed potatoes develop, it is important that only the very best quality is offered to overseas customers. Agronico will be able to provide the high quality storing and packaging in an export-accredited facility to meet this export opportunity. This will assist other Tasmanian seed growers to enter the export market that will, in turn, boost the Tasmanian economy.

"An important benefit of the expansion and increased production is the opportunity for more local employment. The business' permanent staff has grown from less than 10 to almost 20 in the past five years, as well as up to 16 casual employees. We are currently looking for additional staff to help with the growth," said Mr Graham.

The business currently services the needs of some of the larger interstate potato businesses, and the completion of the project reinforces its ability to meet these needs and look to other Australian and export markets.

A \$1.6 million Federal Government Regional Jobs and Investment Package Business Innovation Grant contributed to 'The Agronico Project', with the construction coming in on-time and on-budget.

Find out more

Please visit [agronico.com.au](http://agronico.com.au).



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## Increased Yield

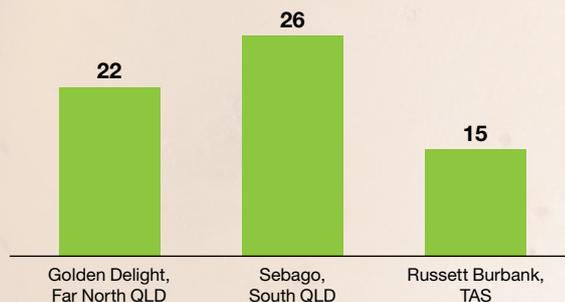
Queensland and Tasmanian results showed higher potato yields in several varieties.

*Golden Delight* (below) showed improved early tuber set



Golden Delight, Far North QLD

YIELD INCREASE WHEN COMPARED TO STANDARD PRACTICE (%)





The contribution of the mother tuber drops significantly as the canopy begins to drive tuber production.

## Banding together to advise potato growers

Two industry organisations have joined forces to deliver a potato grower resource that will be available throughout the upcoming growing season. This resource will be released in four parts, and combines the broad knowledge of technical teams that have years of experience working in the field.

Healthy, productive potato crops require careful planning and care at key points throughout the growing season.

This season, Syngenta and Yara, two industry leaders in research and development, will provide growers with tips and advice as a resource available in select publications and free online.

“Sustainable crop production practices that increase nutrient use efficiency, reduce the impacts of weeds, insects and diseases – while preserving soil structure – ultimately support grower profitability,” Syngenta Product Lead for Potatoes Peter Werbenec said.

“The strategic use of the right type and quantity of fertiliser, alongside the right crop protection technology, should be considered industry best-practice.”

This grower resource draws upon the significant knowledge of Yara and Syngenta’s technical teams through years of work in the field.

“The role nutrition plays in crop growth, yield and quality is well known,” Yara Agronomy and Crop Solutions Manager David McRae said.

“However, mineral nutrition also has additional and often unexpected effects on plants by altering chemical composition, resulting in an increase or decrease in resistance or tolerance to pathogens and pests.”

The resource will be delivered in four parts. The following is an overview of the series.

### Planting

Optimising the nutritional needs of potatoes is a challenge as the plant has a relatively sparse, shallow root system.

High and low soil temperatures can also reduce root growth rates and development. This can limit access to nutrients, particularly immobile nutrients such as phosphorus and zinc. It can also increase effects of soil-borne diseases.

Syngenta Technical Solutions Lead Scott Mathew said the strategic use of the right type and quantity of fertiliser, alongside the right fungicide, should be considered best-practice.

“Like many soil-borne diseases, *Rhizoctonia* spp. is a relatively weak pathogen,” he said.

“It penetrates the young, succulent tissue of germinating tubers and reduces early growth and vigour.”

“Having good supplies of phosphorus and zinc will support general root development and health and, as we know, an actively growing, healthy plant is better able to resist these pathogens.”

### Canopy establishment

Establishing a healthy leaf canopy is essential for high yielding potatoes. Potatoes are a rich source of carbohydrates in our diets, but that energy must be produced over a short period.

Good crop canopy size and leaf health are required to intercept sunlight and absorb carbon dioxide, driving the production of plant energy.

Once the new shoots emerge from the soil, the developing leaves become the primary source of carbohydrate production. The importance, or contribution, of the mother tuber drops significantly.

Good early leaf development is important for establishing a healthy leaf canopy. It also plays an important role in weed and disease management, as shading of the ground helps to reduce weed germination and reduces the

distribution of disease such as early blight (*Alternaria solani*) from rain drop splash.

### Canopy development

Balanced fertiliser programs support healthy canopy development. As the plant grows, the whole canopy must be managed to maintain an effective carbohydrate factory.

The combination of adequate nutrient supply and a protective fungicide application strategy works together to manage diseases and maximise plant health.

“Nutrients increase the plant’s own ability to fight off disease. Nutrients can maximise the inherent defence of plants, facilitate disease escape through increased nutrient availability or stimulated plant growth and alter the external environment to influence survival, germination and penetration of pathogens,” David said.

“Here it becomes important to select and use the right type and quantity of fertiliser at the right time.”

The value of a quality, preventative fungicide application is that it affords the plant protection beyond what nutrition alone can deliver.

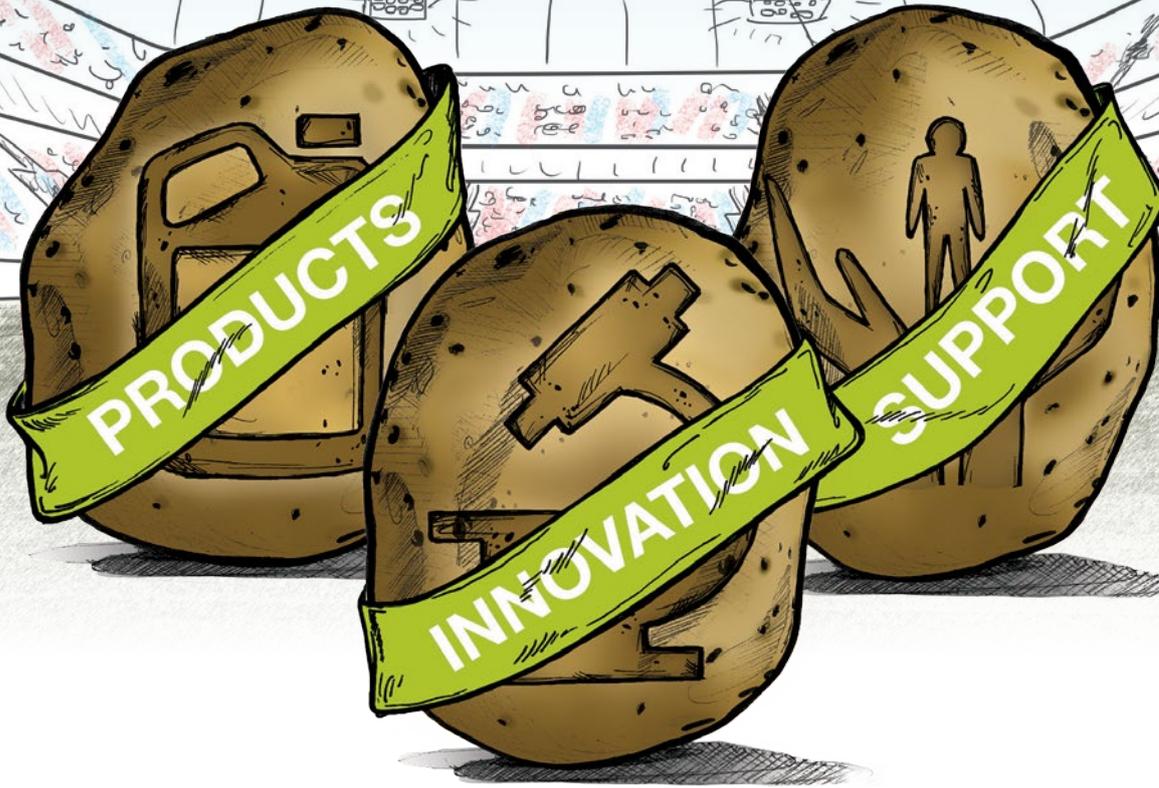
### Tuber bulking

Unlocking plant potential begins at planting and continues throughout the life of the crop. Pre-row closure is a ‘last chance’ to help the potato crop, as it moves into the tuber bulking phase, and achieve the desired market specifications.

Applying a quality fungicide prior to row closure is critical for controlling a disease like target spot and helps to retain green leaf area, protecting the plant’s photosynthetic potential, which is important for tuber bulking.

#### Find out more

For updates on this series or for further advice, please visit [syngenta.com.au/potatopartners](https://syngenta.com.au/potatopartners) or [yara.com.au/crop-nutrition/potato](https://yara.com.au/crop-nutrition/potato).



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**australia**  
February/March - 2019

**R&D | INDUSTRY COMMUNICATIONS AND DEVELOPMENT**

**Future heading the conference and bringing together thousands of local and international speakers, researchers, growers and industry leaders, will focus on the future of food production.**

**Potato Industry R&D Forum**  
Wednesday 26 June, 9.00am - 2.00pm, MCEC

Potato growers and industry partners are invited to the Potato Industry R&D Forum and networking lunch, which will feature international speakers, researchers, agronomists and other growers discussing R&D outcomes and their experiences of managing key costs and risks. In particular, the forum will focus on:

- How do suppressive soils work and what can you do to create them?
- How does secondary soil affect potato yields - do more tillage, soil tillage?
- Use of precision systems (e.g. GPS, yield, nitrogen) and DSS mapping to improve overall productivity.

**Trade Show**

- Lessons from the New Zealand and Western Australian experiences.
- Preventing the spread of TRV in Australia.
- How can TRV be managed on-farm?

The forum will also include brief sessions and interactive workshops on:

- Managing pests using an integrated Pest Management (IPM) approach, experiences of long lived greenhouses using IPM.
- Experiences using PREDICTA on-farm and in research trials how testing can benefit your bottom line.
- How soils available as part of the PREDICTA scheme.

The forum will also showcase the Potato Grower Economy Award and updates to the Stakeholder Plan, as well as outcomes from the recent review of seed handling and quality.

**Range of speakers confirmed**

**Plenary Session**

Delegates will hear from keynote speakers during the Henry Seaton, sponsored by Hort Innovation, on Tuesday 25 June from 10.00am - 11.00am. Keynote speakers include industry chief, author, TV presenter and MasterChef winner Adam Liaw, who will bring a unique view of the food industry to Hort Connections as he shares his expert insights in the food service sector with delegates.

Sandra Bennett, an experienced medical professional and co-host of the ABC's 'Rural Medical Series: All the Doctors', has written for the United Nations and now leads CAT, the science-based, global platform for food systems transformation, as well as speak to delegates about his interest in improving the health and nutrition of Australia.

Meanwhile, Samantha Gash will draw on her experience as a corporate lawyer, business adviser, writer and social entrepreneur to introduce delegates with a different perspective on achieving social change through the vehicle of adventure and tourism.

**Concurrent Sessions**

A range of concurrent speaker sessions will be held during Hort Connections 2019. Firstly, the AUSVEG Women and PMA A-NEZ events will be held from 2.00pm - 4.00pm on Tuesday 25 June.

**Celebrate excellence at the Gala Dinner**

Wednesday 26 June, 7.30pm - 11.00pm, Crown Palladium

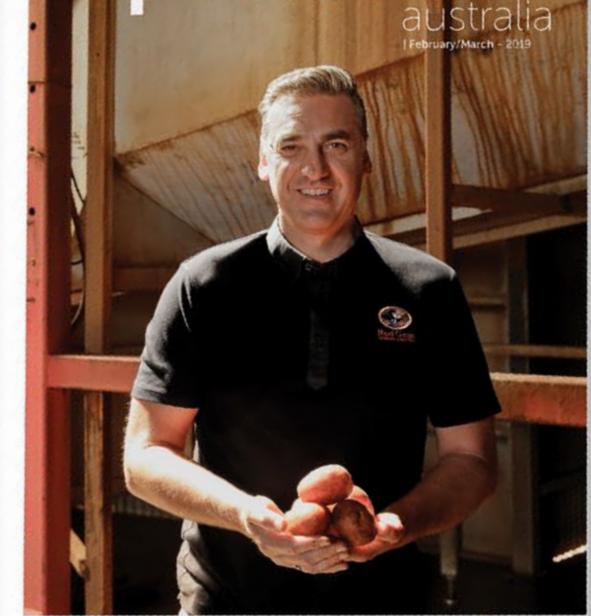
This year's Hort Connections Gala Dinner will be held within the spectacular setting of the Palladium at Crown, described as Australia's premier ballroom. The 2019 National Awards for Excellence will be presented during the Gala Dinner to acknowledge and recognise the outstanding contributions that individuals and companies make to the Australian horticulture industry. With 10 award categories to present, there are plenty of opportunities for our industry to recognise the hard work that countless individuals and to help our industry succeed.

Nominations for the National Awards for Excellence are now open, so if you know a grower or other industry member who deserves recognition, fill out our online form at [hortconnections.com.au](http://hortconnections.com.au).

**Visit hortconnections.com.au for more information on the program, speakers or to register online.**

**You can also email [info@hortconnections.com.au](mailto:info@hortconnections.com.au)**

April/May - 2019 123



**ROBERT CERCHIARO - X-RAY VISION DELIVERS QUALITY SPUDS**  
CHURCHILL FELLOWSHIPS - APPLICATIONS NOW OPEN  
RESEARCH UPDATE - TIPS TO IMPROVE POTATO SEED QUALITY AND MANAGEMENT



**Colin Ayres: Representing seed potato producers in the west**

Colin Ayres is Chair of the Seed Potato Growers Association of Western Australia, an advocacy group that looks after the interests of the state's seed potato growers and the wider industry. As a respected third-generation potato grower in his own right, Colin runs a 200-hectare certified seed potato operation under a state scheme that he describes as "valuable".

"Having an independent certification body in Western Australia has been one of our biggest assets, from an industry point of view. And we're looking for that to continue," he said.

"The biggest asset of OPRD doing the seed certification is what we made overseas, we have Department of Agriculture oversight, which is pretty transparent. It gives customers confidence that what they're buying is authentic."

"Since the introduction of pathogen-tested mini-tubers, we've seen the virus levels really cleaned up and that's now to a great extent our virus levels are very low in Western Australia. The WA scheme is probably well ahead of the game."

That scheme is ever-evolving, and Western Australian seed producers can now draw on what changes should be implemented.

"We're continually looking at different things to improve, so the scheme is always in progress at any given time. It certainly hasn't been written and forgotten," Colin said.

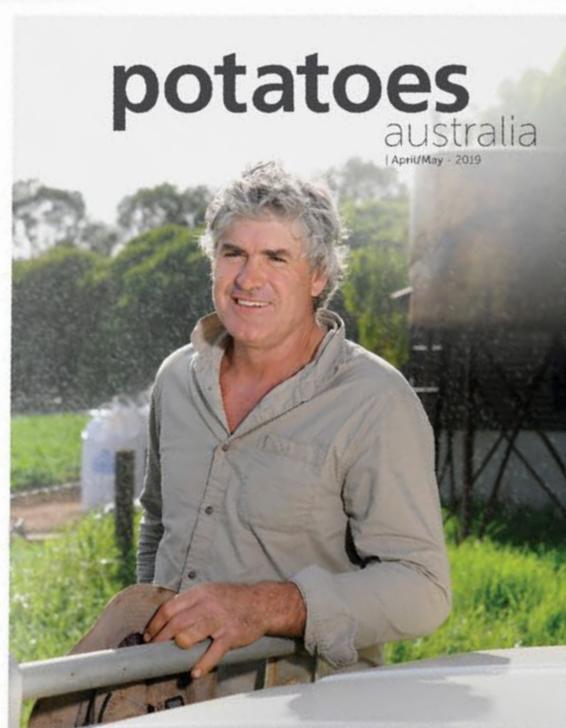
"We have a world there and if there's a national, responsible approach, chances are it will gain some traction. There are some good checks and balances along the way to keep that scheme working strong."

Colin said that hygiene and traceability are key to growing clean quality seed potatoes. Pathogen-free and high germination crops remain priorities. It is also vital to clean machinery when moving between production varieties and generations.

Recently Colin has with Jarrod and John Crilly invested in a state-of-the-art potato seed grading line after seeing it in action in Europe. "The Visual Optical Sorter can spot unmarked potatoes consistently and efficiently, and recognise up to 16 types of defects in an unmarked potato. It can also allow for manual input to tailor the size of any tuber in a particular line during grading."

Colin said that high-quality grading is critical to producing high-quality seed and it is vital to have a consistent product - particularly with the opportunity of increased domestic and international trade.

"It gives us our nation the grade to a very high standard without the labour costs. We can take it to whatever our customer requires. It gives us a lot more options to give our seed a better outcome for our growers."



**potatoes australia**  
April/May - 2019

**VAUGHAN CARTER | WA GROWER LOOKS TO THE FUTURE**  
MARKET DEVELOPMENT | AUSSIE POTATO EXPORTS STRENGTHEN IN 2018  
PREDICTA PT UPDATE | SOIL TESTING SERVICE EXPANDS FOR POTATO GROWERS

# Reflecting on the last three years of industry communications

In February 2016, AUSVEG began a three-year project to communicate the outcomes of industry-funded research to levy-paying growers and the wider industry. This project included the publication of *Potatoes Australia*, as well as a number of other old and new communications materials to promote the benefits of the levy investment system. Project Lead Shaun Lindhe provides an overview of the project.

Communicating research outcomes effectively is essential to increase awareness and adoption of research outcomes by horticulture levy payers to improve productivity, competitiveness and profitability. As Australian horticulture transitions to meet the challenges of operating in a globally competitive marketplace and faces other challenges such as rising costs and competition in domestic markets, it is important that grower levy payers are given every opportunity to learn about innovations and improvements that can enhance their businesses.



**potatoes australia**  
June/July - 2019

A strategic levy investment under the Hort Innovation Potato – Fresh Fund, *Potato Industry Communications Program 2016-2019* (PT15007) was undertaken by AUSVEG to increase awareness of the outcomes of research projects.

By communicating research results to growers and highlighting the practical on-farm benefits that can be gained from adopting the findings of relevant levy-funded projects, the program aimed to inspire Australian growers to take advantage of the ground-breaking and world-leading research taking place in the industry to gain real-world benefits on-farm and encourage business innovation, with the ultimate aim of improving profitability for the Australian potato industry.

## How did AUSVEG communicate to growers?

PT15007 was an amalgamation of two previous communications projects:

- PT12004 – *Potato Industry Communication Strategy (PICS): management and implementation*
- PT12019 – *Potatoes Australia (continuation of PT09014)*

The amalgamated project ensured that potato levy-paying growers, researchers and industry members had a cost-effective and efficient model for research communication.

The project's outputs included the production and distribution of a number of hardcopy, online and social media communications materials to ensure that the outcomes of industry-funded research reaches as many growers and industry members as possible to maximise the impact of the project. The communications materials produced by AUSVEG as part of PT15007 included:

- Traditional hardcopy publications:
  - *Potatoes Australia*
  - *Potato Grower Success Stories*
  - *Potato Industry Annual Report 2014/15*
- Online communications:
  - The management, maintenance and promotion of the InfoVeg national R&D database
  - InfoVeg TV videos
  - The AUSVEG Weekly Update e-newsletter
  - Media and social media relations to promote industry-funded research and related news items to growers and the wider industry.

## What R&D was communicated to growers?

In total, 97 different industry-funded projects featured in potato industry communications across all of its different communications platforms during the life of the project.

- 20 editions of *Potatoes Australia* published **375 pages** dedicated to industry research (an average of **19 pages** per edition), as well as a re-design of the publication to modernise its look, increase readability and more clearly promote industry research.
- **168** Weekly Update editions published over 540 potato industry-related articles covering **50 R&D projects** funded by the fresh potato levy and other Hort Innovation-funded sources.
- **Three** editions of *Grower Success Stories* highlighted **18 growers** who have benefited from levy-funded research and development.
- **17 Final Reports** from industry-funded projects were uploaded to the InfoVeg R&D database.
- Media releases and direct media engagement that resulted in **827 media mentions** on potato industry-related research (an average of **21 per month**).
- Social media promotion of levy-funded and industry-related research, news and events resulted in **1,391 tweets published (8 per week)**, a 235 per cent increase in Twitter followers, as well as the increased output of other social media channels to promote potato industry-related content.
- **9** videos highlighted levy-funded research projects for the AUSVEG YouTube page, which achieved an average of **169 views**.

## Grower feedback

AUSVEG regularly surveyed growers and industry members to monitor the effectiveness of project PT15007. This was done in conjunction with VG15027 *Vegetable Industry Communications Program 2016-2019* due to the similarities of the two programs.

In the final survey, when both vegetable and potato growers were asked if they had implemented R&D that they learned through AUSVEG's communications, 43 per cent of grower respondents had indicated that they had implemented some research outcomes. This is particularly high, given that neither

PT15007 nor VG15027 incorporated any extension element. It is expected that, with the potato industry investigating more resources into extension, the two components of research adoption can achieve significant practice change in the industry.

AUSVEG industry communications have been highly successful in improving industry understanding of how Hort Innovation's Strategic Levy Investment system works, with over 80 per cent of respondents from AUSVEG's most recent annual survey indicating that they have a greater understanding of the levy investment process (and Hort Innovation's role) through information produced by AUSVEG.

Furthermore, growers and the wider industry are more informed on how the Hort Frontiers investment system operates, with over 60 per cent of respondents from AUSVEG's most recent annual surveys indicating they have a greater understanding of the Hort Frontiers Funds and investment system through industry communications.

### Find out more

For further information on this project, please contact Project Lead Shaun Lindhe at [shaun.lindhe@ausveg.com.au](mailto:shaun.lindhe@ausveg.com.au) or on 03 9882 0277.

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

Project Number: PT15007



Two Grimme representatives hosted the group on the final day of farm visits.

## Aussie growers and processors get a taste of the European potato industry

In September this year, a group of Australian potato growers and processors embarked on a six-day potato study tour, where they attended a major European potato industry event, as well as visiting growing operations, research organisations and agribusinesses in Belgium. *Potatoes Australia* shared some highlights from the tour.

PotatoEurope was the main event for five Australian potato industry members when they travelled to Belgium as part of the 2019 European Potato Conference Study Tour held from 1-7 September.

The six-day tour, led by AUSVEG, incorporated the two-day exhibition, which was held in Kain near Tournai. The group included representatives from all facets of the Australian potato industry. Tour attendees included Matt Steendam from Durkin Produce, Western Australian seed grower Alan Parker, Zerella Fresh Farm Manager Phil Gorman and agronomists Olivia Ryan from McCain, and Angus Galloway from Simplot.

The *European potato conference study tour* (PT18002) is a strategic levy investment under the Hort Innovation Fresh Potato and Potato Processing Funds.

### Grower insight

On the opening day of the tour, the group travelled south to Gembloux in the French speaking Walloon region, where it was joined by Daniel Ryckmans, an agronomist employed by the Walloon Potato Growers' Association (Filliere Wallonne de le Pomme de Terre; FIWAP).

There, participants visited a seed potato cooperative, Condi Plants, which has seven grower members, produces around

200 hectares of seed potatoes, and shares a common storage and seed preparation facilities. Much of their seed is exported around the world and the growers were impressed with the infrastructure and machinery in use.

The group then met with experienced potato growers Lieven and Stefan Holvoet and were fortunate to receive a tour of the Holvoet brothers' property. Participants gained an insight into the vast amount of high quality machinery that is being used and the advanced concrete storage facilities Lieven and Stefan have established. They saw the very large number of tiny (by Australian standards) potato paddocks spread throughout the area they farm. It was eye-opening to see the effects of the two-year drought that the majority of Europe has experienced, along with the impact that Colorado potato beetle, a pest not yet found in Australia, has had on their crop.

### Research focus

Following a busy first day, the group travelled north to Kruishoutem in the Dutch speaking Flemish region. The first stop was a visit to Interprovinciaal Proefcentrum voor de Aardappelteelt vzw (PCA), which is an association for independent practical research and information on potato cultivation. In close collaboration with the potatoes research group of Inagro, the PCA offers a wide range of services and advice for growers and other potato industry stakeholders. In their modern research facility, the group met with Dr Pieter Vanhaverbeke, a world expert on potato late blight. He presented on the late blight warning system, which uses weather data, and a broad range of data inputs to provide predictive models of risk that are individually tailored to each grower in the region.

Over the many years that it has been in operation, the predictions have been



Colorado potato beetle.



The group visited Condi Plants, a seed growing cooperative.

refined to be highly accurate. They are used by growers to manage the risk of crop infection and to justify the use of preventive fungicides, which is regulated in the European Union. The late blight pathogen *Phytophthora infestans* is a major problem in Europe for potato growers, which has many genotype populations, each characterised by various levels of aggressiveness and fungicide resistance. None of these exotic populations are yet present in Australia, so the group was very interested in the management approaches taken in Belgium and were impressed by the predictive services provided by PCA.

The rest of the day was spent at the Dewulf potato harvester factory in Roeselare, Belgium. The group viewed two and four row self-propelled harvesters in various stages of construction, along with a range of other powered and unpowered machinery. It provided the group with an excellent background to then see the finished product in action the next day.

## Potato machinery in action

Days three and four were spent at PotatoEurope, which is an outdoor and covered event that takes place annually in one of the four main potato-growing countries across Europe in a four-year cycle. After France, the Netherlands and Germany, it was Belgium's turn this year, where it was held on a farm near Kain in south-east Belgium.

The event brought together representatives from the entire potato supply chain to consult with experts in the field of cultivation, materials and potato processing. This year, the event attracted 10,683 people from 40 countries involved in potato production, which is a significant increase from previous years. There were 225 exhibitors from 17 countries in attendance who were showcasing the latest potato products and services.

An important and appealing component of PotatoEurope – that differentiates it from other events – is the practical demonstration of machinery.

This year, there were 14 machines harvesting 20 hectares of potatoes, pulling up a healthy 50 tonnes/ha from the site. Each member of the tour was able to focus their time and attention on what they were most interested in. Feedback was highly positive, and participants wished that there was something similarly potato-focused back home in Australia.

## Harvesting knowledge

Rounding out the tour was a meeting with Grimme representatives Paul Menz and Alex Stärk, who travelled with participants to two potato growing operations. As a result, the group was able to see Varitron 470 harvesters in action.

The first stop was a family farm of 330 hectares in Gosselies, where they grow and process fresh market and French fry potatoes, some of which are sold and delivered directly to restaurants throughout the region. The second site was a contracting operation run by two brothers and a son in Berloz. The visitors were impressed by the scale of the operation, which was harvesting

approximately 1,200 hectares of potatoes while relying on only small number of staff. In each location, the group was treated to fantastic grower hospitality where all aspects of the business were freely discussed.

Participants appreciated being able to discuss the similarities and difference of growing potatoes on opposite sides of the world with their peers. Upon their return, participants are encouraged to share knowledge and networks gained with the wider Australian potato industry.

### Find out more R&D

AUSVEG would like to thank those who gave their valuable time to meet with the delegation.

The final report for this project will be made available on the InfoVeg database at [ausveg.com.au/infoveg](http://ausveg.com.au/infoveg).

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

Project Number: PT18002

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Participants on the final day of the tour. They met with Grimme representatives, who took them around to two potato growing operations.



## Matt Cunzolo

**Age:** 29

**Location:** Tolga, QLD

**Works:** Cunzolo Farms

**Grows:** FL's

### How did you first become involved in the potato industry?

My grandfather started growing potatoes in the early 1960s, so I grew up on a potato farm. I did an apprenticeship as a diesel fitter before deciding to come back to the farm to help the family.

### What does your role in the business involve, and what are your responsibilities?

I have been self-employed for eight years. I have all the responsibilities of forward planning and meeting my projected budgets from planting to growing and then harvest. Plus, I'm involved in the day-to-day things that need doing to achieve quality produce.

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

My parents were growing potatoes for Snack Brands Australia and doing well from it. Because of that, I focused on securing long-term contracts with Smith's Chips. Dealing with Smith's Chips, I find them to be very innovative with trialling new varieties that they have coming through their system and working out what grows best in my growing window as well as achieving good results, with the ability to increase my production as I expand.

### What are the biggest challenges you face working in the industry, and how do you overcome them?

The biggest challenge I have had is matching varieties for my growing window. I have been buying seed from Dowling AgriTech and have found that they make my job easier with their broad knowledge and a real understanding of timing, so I can achieve the best outcome.

The weather itself is a challenge but we do our best with extra watering/labour during drier periods and ensuring harvesting potatoes out of lower areas of paddocks before any water damage from rain can be done.

### Where do you receive your practice advice and information from?

My family has been growing potatoes for 50-plus years. I never hesitate to get advice from Dad, but generally I try to work it out myself.

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

In far-north Queensland, we have a lot of unpredictable weather conditions throughout the year. Therefore, I have learnt how to read weather forecast charts, which allows me to spray the right fungicides and nutrient products with a computerised spray rig. We also have high maintenance on our harvesting equipment to ensure there is no down time and every load is on time.

### What areas of research are important to the potato industry?

I think there should be more research undertaken in plant diseases such as potato virus Y and zebra chip. Preventing the spread of these diseases is important for the future of the potato industry.



Photography by Michael Petersen.

**Where do you see opportunities for growth in the Australian potato industry?**

I think the potato industry is on the right track, with the new varieties being developed to increase yields as well as being a better product for consumers.

**Where do you see yourself in five years?**

In five years, I hope to have doubled my production and keep up with the new technology to make farming easier.

It's good to look at what other growers use in technology both overseas and Australia. There are always new things out that can make farming easier and more cost-effective.

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

With the new technology coming into the growing operations every year, I think that young people could find a real passion in the potato industry; particularly in learning the agronomy side all the way through to developing new varieties.



## A guide to effective inductions

In this edition, the Fair Farms team discusses inductions to the workplace and business, plus provides an overview of the information that needs to be made available to new workers and potential issues to consider when hiring workers from overseas, including language barriers.

An induction is a process of introducing workers to their job and to the business. When workers fully understand their role, surroundings and relations to co-workers, they will have all the information necessary to perform their job confidently, effectively and safely.

The Fair Farms Standard promotes that businesses have a well thought out and documented induction procedure. Businesses need to induct workers they hire directly as well as workers hired through a labour hire provider.

## Meet the Fair Farms team



**Thomas Hertel**  
Fair Farms Program Manager

As Program Manager, Thomas has overall responsibility for the successful implementation of the Fair Farms Initiative.

Before joining Fair Farms, Thomas led the contracting and legal department of a global international development project management firm. He is skilled in complex contract negotiations, government, effective stakeholder engagement, management and leadership, with more than a decade of professional experience as a commercial lawyer, policy advisor, project and operations manager, tutor and mentor.

Thomas completed undergraduate law at Humboldt University of Berlin and holds a Master of Laws degree in international law and dispute resolution from the University of Queensland.



**Lucy Kluck**  
Fair Farms HR Officer

After growing up and working on a tomato farm in the Lockyer Valley, Queensland, Lucy studied a Bachelor of Psychology and a Bachelor of Business at Queensland University of Technology. Lucy specialised in Human Resources and statistical analysis, and is experienced in providing employment relations advice and support to growers across the horticulture industry.



**Donna Mogg**  
Fair Farms Trainer

With over 25 years' of workplace relations experience, Donna Mogg was responsible for the management of Growcom's Workplace Relations unit, with a focus on understanding the horticulture industry and its workplace challenges as well as providing support and training to assist growers to meet their legal and ethical workplace obligations. Donna has been engaged with matters at the national level, e.g. both development and review of the 'modern' Horticulture Award, and in making submissions to, and appearances at key inquiries, including the Senate Education and Employment References Committee Review, the 457 Integrity Review, the National Forum on Overseas Workers, and the Migrant Worker Taskforce.

Donna holds a Bachelor's Degree in Communications, a Certificate IV in Training and Assessment, and the Associate Certificate in Applied Management and is leading the development of the training program for the Fair Farms Initiative.

## What to include in an induction procedure

Every business is different, and therefore every business' induction process will cover different areas. However, at a minimum the induction procedure should cover:

- Workplace information, such as the location of break rooms and toilets.
- Worker role, such as job descriptions and general duties.
- Employment terms and conditions, including probations and piecework arrangements (where relevant).
- Worker rights and entitlements, including a copy of the Fair Work Information Statement and the Fair Work My Employment Checklist.
- Work health and safety risks, requirements, policies and procedures.
- Other workplace policies and procedures.
- The reporting structure of the business.
- Process for handling of disputes and grievances.

When deciding what other topics to cover in your induction process, think about the unique features that contribute

to your business values (e.g. always sending out deliveries on time) and workplace culture (e.g. having morning tea together once a week).

## Inducting overseas workers

It is important to consider that workers from overseas may have limited English skills and experience in horticulture businesses. When designing your induction process, keep these issues in mind and create a procedure for communicating induction information to those workers. This may include photos and diagrams, physically showing and demonstrating topics or teaming new workers up with experienced employees who speak the same language.

## Documenting the process

Use a checklist to ensure every aspect has been covered. Ensure workers sign the checklist to acknowledge they have received an induction and understand the information they were given. Make sure to keep the signed checklist with the rest of their employee records.

## Keep in mind

Some employers make the mistake of not paying workers for the time they spend on inductions. However, being inducted is a mandatory work activity and therefore workers are entitled to their normal rate of pay.

These, and other important topics, are covered in the Fair Farms Standard, which sets out the accepted principles of fair and ethical employment in horticulture. For more information, including how to become a Fair Farms certified employer, visit [fairfarms.com.au](http://fairfarms.com.au) or email [fairfarms@growcom.com.au](mailto:fairfarms@growcom.com.au).

### Find out more

Visit [fairwork.gov.au](http://fairwork.gov.au) and [growcom.com.au](http://growcom.com.au) for more information regarding your obligations as an employer.

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.



# Tolsma, setting the storage standard

What to control in your store for the highest product quality:

- Airflow
- Air Speed
- Temperature
- CO<sub>2</sub> level
- Running hours
- Humidity level



Need free advice? Get in touch with your storage specialist Maarten Van Delden (Ph. 0468 894 099), Allan Greenhalgh (Ph. 0434 774 430) or send an email to [Australiansales@tolsma.com](mailto:Australiansales@tolsma.com)

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Members of the Tolsma-Grisnich Group



The yellow form of adults, and nymphs, of tomato-potato psyllid (*Bactericera cockerelli*).



The eggs of tomato-potato psyllid (*Bactericera cockerelli*, Triozidae). Images courtesy of Western Australian Agriculture Authority, 2017.

## Know where TPP is... and where it isn't: The 2018-19 edition

The second year of surveillance for tomato-potato psyllid and testing for the bacterium it can vector, *Candidatus Liberibacter solanacearum* has been completed. AUSVEG National TPP Coordinator Alan Nankivell reports on the 2018-19 results from each Australian state.

Tomato-potato psyllid (TPP) was found in Western Australia in February 2017. As a result, an initial surveillance program was established and within weeks. It was found that TPP was over an extensive area in WA – and that it would not be possible to eradicate. Testing of trapped TPP for the existence of *Candidatus Liberibacter solanacearum* (CLso) which causes zebra chip complex was undertaken. The importance of the link between TPP and CLso is that TPP is the only known vector of CLso.

All jurisdictions agreed to undertake trapping for TPP during the Transition to Management (T2M) to ascertain if TPP is absent. The programs conducted last season found no TPP in other jurisdictions apart from WA and found no CLso.

A second round of TPP monitoring was carried out by jurisdictions during the 2018-19 growing season.

### Western Australia

As a follow up to last year, a focused trapping program was undertaken in Local Government Areas where TPP numbers were highest compared to the previous season. A total of 1,171 traps were put out and 10,454 TPP collected. Of these, 2,600 TPP were tested for CLso. No CLso was found. In addition, the infested zone was expanded to include Albany and Esperance districts.

Three seasons of TPP trapping and testing have now been conducted in WA. While TPP continues to be found, there has been no CLso detected.

### South Australia

South Australia's surveillance strategy is based on targeting host crops that are susceptible to attack. Properties have been sampled across the state.

The objectives of this Surveillance Strategy remain the same as last year:

- To confirm that neither TPP nor CLso are known to be present in South Australia.
- To inform national decision-making by following up identified links to known infestations in Western Australia.

Surveillance in SA monitored 102 sites in commercial growing regions during the 2018-19 season and importantly, no TPP was detected. The program in SA was conducted with the support of growers.

### Victoria

During summer and autumn 2018-19, Agriculture Victoria worked with the Australian Processing Tomato Research Council (APTRC), the Australian Seed Potato Industry Certification Authority (AuSPICA) and community gardeners to undertake TPP surveillance.

A total of 79 properties were surveyed across metropolitan and regional areas of Victoria. Properties underwent two rounds of surveillance (with four sticky traps per surveillance round). No TPP was detected.

### Queensland

Queensland continues to undertake area freedom surveys for TPP.

During the 2018-19 financial year, 29 properties have been surveyed for TPP across Queensland. The majority of the properties surveyed are in production areas, with some urban and peri-urban properties also inspected.

Surveillance is being conducted on properties growing TPP host plants using a range of techniques including yellow sticky traps and visual surveillance. On commercial properties, at least four yellow single-sided sticky traps are being installed, with a minimum of one trap installed on each side of the crop. Visual surveillance is also utilised at other sites such as community gardens.

A range of other general surveillance activities are also undertaken for TPP, including provision of awareness information on the DAF website, social media posts and investigation and diagnosis of suspect emergency plant pests and diseases.

No TPP has been detected in Queensland.

### New South Wales

New South Wales has completed two seasons of TPP sticky trap surveillance in host production areas (broad acre and protected cropping), nurseries, community gardens and backyards across the state since 2016 (242 sites in 2016-17 and 245 sites in 2017-18). TPP has not been detected.

With industry highly engaged and educated on this pest, TPP surveillance in NSW focused on community gardens



Adults, eggs and exuvia of tomato-potato psyllid (*Bactericera cockerelli*) adults on the underside of a tomato leaf.

and nurseries primarily in the Sydney Basin in late 2018, with supporting surveillance on the north coast in early 2019. Twelve community/school garden sites in Sydney have had sticky trap surveillance completed, with no TPP or other exotic psyllid species detected. Three retail nurseries and nine community gardens along the NSW north coast from Mullumbimby to Coffs Harbour were also surveyed with sticky traps near host plants, with no TPP or other exotic psyllid species detected.

### Tasmania

During the 2018-19 season, 90 urban traps were deployed near TPP hosts and there were a further 100 traps that were deployed at urban sites and nurseries for the purpose of also looking for the glassy-winged sharpshooter.

Although these were not in the immediate vicinity of TPP hosts, there were hosts on the property. Forty-one potato growing sites were also covered.

The urban survey was conducted by requesting volunteers within the Department of Primary Industries, Parks, Water and Environment take part in the survey. Kits were sent out with traps, labelled bags to collect them in, instructions, field records and information about the pest and why we are doing the survey.

The entire TPP survey took place over the period of 22 December 2018 until 29 April 2019. Some *Triozidae* that are known to occur were present, but no *Bactericera cockerelli* were found. No exotics were found.

#### Find out more R&D

For more information on this program, please contact AUSVEG National TPP Coordinator Alan Nankivell at [alan.nankivell@ausveg.com.au](mailto:alan.nankivell@ausveg.com.au).

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

Project Number: MT16018

**Hort  
Innovation**

## Potato processor shares proactive approach to potato health

In August, McCain Foods (Australia) hosted five Agriculture Victoria staff members to discuss a wide range of topics including tomato-potato psyllid management and dealing with waste. They were also provided with an overview of how McCain operates, particularly at its Ballarat plant.

McCain Foods (Australia) is a large potato processor based in Ballarat, a 90-minute drive west of Melbourne. The company has five processing plants located around Australia and New Zealand, with 52 established around the world.

Potato growers across New South Wales, South Australia and Victoria supply McCain Foods with raw potato throughout the year for processing in Ballarat for potato products that are sold in supermarket freezers, restaurants and quick-service venues.

To understand how McCain Foods operates, five Agriculture Victoria Biosecurity and Plant Health staff members made the journey up the Western Highway to meet with Field Agronomist and Seed Specialist Daniel Grayling and Potato Supply Manager Paul Rodier. This meeting was facilitated by AUSVEG National TPP Coordinator, Alan Nankivell.

### Gaining an insight

To begin the meeting, Daniel provided an overview of McCain Foods to the Agriculture Victoria staff, including the company's history; where its processing plants are based; who they supply products to; the varieties used for their processing potato products and how these are developed; and how potatoes are sourced and stored.

The staff were interested in how the potatoes are stored at the Ballarat plant, with the site able to host sheds capable of storing 5,000 tonnes of potatoes. These sheds are filled in mid-March, and once full, will supply potatoes until Christmas (if not beyond).

Monitoring of pests and diseases was also discussed, including tomato-potato psyllid and *Candidatus Liberibacter solanacearum* (CLso). McCain Foods' New Zealand counterparts have been battling both the pest and CLso, the



Left to right (back): Gary D'Arcy, Paul Rodier, Daniel Mansell, Dean Harapas, Alan Nankivell; (front): Daniel Grayling, Rosa Crnov and Libby Gawne.

bacterium the pest vectors that causes zebra chip, for over a decade, and Daniel and Paul discussed the surveillance being undertaken, as well as plans McCain Foods Australia have in place should TPP and CLso establish in McCain's growing regions.

Another topic of discussion was potato waste, which is sent to a treatment plant on-site; however, Paul said that load rejection was uncommon at McCain.

The morning provided robust discussion from both parties, and it is hoped that these relationships will continue to develop to strengthen the productivity and sustainability of the Australian potato processing industry.

#### Find out more

Please visit [mccain.com.au](http://mccain.com.au).



## Multi-million dollar boost to Tasmanian processors

In March, McCain Foods (Australia) announced it will invest almost \$40 million to upgrade its Smithton processing plant in Tasmania. *Potatoes Australia* spoke to McCain Foods Agricultural Manager Josh Opas and grower representative Beau Gooch about the expansion, and what this means for the Australian potato processing industry.

The future of the potato processing industry is looking bright in Tasmania, with the McCain potato processing plant on the state's north-west coast set to undergo a \$37 million upgrade. The Smithton facility's expansion will involve a new fryer, a packing room upgrade and batter application capability, which will make the site the company's primary retail French fry facility in Australia and New Zealand.

The McCain Foods Smithton facility is the company's smallest by volume in Australia and New Zealand (the other plants are located in Ballarat, Victoria and Timaru on New Zealand's South Island). Smithton sources and processes potatoes from Tasmania's north-west, through to the midlands and north-east, as raw material cannot be imported into Australia for processing.

McCain Agricultural Manager Josh Opas said the upgrade will unlock network capacity and provide added capability following the capital expansion of the company's Ballarat site.

"This capital work will secure the business to supply changing customer demands. The capability upgrade makes Smithton a key McCain retail site, giving us confidence that crop volumes will remain stable or grow in future, instead of flexing up and down with demand as they have done in the past," he said.

"The Smithton capability project firms up current volumes for the site and underpins the 17 permanent jobs recently created due to current production volumes. We will also be adding part-time jobs to the

existing workforce, with permanent jobs expected to be added as battered volumes increase in line with demand."

Mr Opas said there were challenges in getting the Smithton expansion underway.

"Capital in our global network is not easy to secure and projects need to really stack up. However, the combination of good quality and reliable crops in Tasmania, the need to supplement our recent Ballarat capital expansion, and the belief in the Smithton production team got the project over the line," he explained.

Mr Opas said the McCain expansion was very positive for the Australian potato processing sector.

"Australia has seen unprecedented investment over the last five years by all multinationals to lower the cost base and provide a product that customers want," he said.

"Although the tonnages grown in Australia are a mere drop in the ocean compared to the rest of the world, the ability to grow high-yielding, quality crops in a sustainable manner keeps production costs competitive. We must remain wary of imports and never be complacent – processed potatoes are a readily tradeable commodity."

McCain's long-term goals are for sustainable growth, Mr Opas added.

"If this leads to more expansion in the future, then that is where we will head. We are always looking at how to best serve our customers' needs," he said.

### Grower perspective

Beau Gooch is a potato grower in Frankford, located in Tasmania's north-east. He is also a member of the McCain Growers' Working Group that was established five years ago to address any grower concerns with the processing company and, more recently, negotiate contracts for the upcoming potato season.

Beau said investment in the Smithton processing plant is encouraging and will give growers certainty that supply will remain stable in Tasmania.

"It will allow growers to increase tonnages and gives us surety that the company is secure here. It also gives us that confidence that the fluctuation in tonnages isn't going to be as great in the future," he said.

"There will still be fluctuation, but they're talking about increasing tonnages going forward – so it's only positive for growers."

#### Find out more

Please contact Josh Opas on 0438 045 144 or [jopas@mccain.com.au](mailto:jopas@mccain.com.au). To provide your feedback, contact Anne Ramsay on 0400 368 448 or [ppaa.eo@gmail.com](mailto:ppaa.eo@gmail.com).



Soil Wealth and ICP team members (L-R) Clinton Muller, Carl Larsen and Doris Blaesing at Hort Connections in 2018. Images courtesy of RM Consulting Group.

## Introducing Soil Wealth/ICP to *Potatoes Australia*

### Can you please tell us: how did the Soil Wealth and Integrated Crop Protection project originate?

The Soil Wealth and Integrated Crop Protection projects commenced back in 2014 and the first phase finished in 2017. Initially run as two separate projects, the projects were developed in response to industry wanting a focus on extending research information out to growers. The projects were strategic levy investments under the Hort Innovation Vegetable Fund.

We were focused on *protecting crops* in a sustainable way to improve productivity and profitability. The project team worked with growers, advisors and other industry service providers to improve understanding of pests, weeds and diseases, management of chemicals and application of integrated pest management (IPM).

At the same time we established a soil extension project, which aimed to work with growers to manage their soils in an environmentally and economically sustainable way. The focus was on *nurturing crops* through practices such as biofumigation, biology, reduced tillage, nutrition and irrigation to improve productivity and quality.

The project activities included:

- Regional demonstration sites and training/field days focused on themes.
- Grower groups.
- Masterclasses/think tanks.
- Advisor engagement and training.
- Reference sites for benchmarking activities and monitoring.

Importantly, the delivery of these projects featured some important differences.

- Firstly, from the start it was a team approach with the projects being delivered by RM Consulting Group (RMCG), Applied Horticultural Research

(AHR) and IPM Technologies. The partnership brought together different skills and coverage across Australia.

- We also wanted to work directly with growers to ensure that the latest information could be tested and applied. This approach involved grower-led demonstration sites and was about addressing the issues in a commercial situation and learning by doing. Bringing together researchers and growers has allowed us to adapt practices as needed.
- The project aimed to involve industry service providers to capture all the knowledge within the sector and ensure that it was being used effectively.
- The communication platforms provided a go-to place for the latest information and knowledge on issues related to crop protection and soil health.

The Integrated Crop Protection (ICP) and Soil Wealth (SW) projects struck a chord with growers and advisors alike having filled a need in the provision of practical and useful information. We also learned a lot about how best to deliver the latest research and turn it into practical knowledge for the grower.

Phase 2 of the project aimed to use the best components of Phase 1 and tweak some things including:

- Continuing with the partnership approach.
- Integrating soil management and crop protection extension products and services into one project.
- Maintaining demonstration sites to provide practical application and learnings.
- Getting researchers, service providers and growers to share their knowledge

and come up with practical solutions.

- Providing the latest and most up-to-date information in ready-to-use formats.
- Using a systems-based approach, and not looking at topics in isolation. For example, noting the importance that irrigation and nutrition management as well as precision agriculture play in soil and plant health.

### Why did RM Consulting Group decide to partner with Applied Horticultural Research to take on this project?

The partnership between RMCG and AHR was one that we identified as making sense to both businesses. We had slightly different skills and geographic coverage and thought that we would be better at delivering services to the industry using a team approach.

The core members of the partnership have included:

- Anne-Maree Boland (RMCG)
- Doris Blaesing (RMCG)
- Carl Larsen (RMCG)
- Donna Lucas (RMCG)
- Gordon Rogers (AHR)
- Kelvin Montagu (AHR)
- Marc Hinderager (AHR)
- Pieter Van Nieuwenhuysse

### What have the benefits been from this partnership (for both organisations)?

The strength of the Soil Wealth ICP delivery model lies in partnerships. This includes partnerships with demonstration site growers, all the way to value chain participants. That's why in Phase 2, the projects were combined, and continue to provide an integrated service to industry – from training and events, to engaging →

case studies and videos, as well as communications like the e-newsletter and social media.

The partnership between RMCG and AHR has ensured that we have a breadth of knowledge and experience in the project team that the growers can call on.

Having a geographic spread and national coverage also means that the project team has access to a huge network of growers and industry service providers, having worked in the horticulture industry for many years.

### **What other projects have been established as a result of the original Soil Wealth/ICP project?**

The SWICP project has made a difference in getting the latest information out to growers on issues related to soil health and crop protection. Other projects that spun out of this initial focus having been identified by growers as filling a need are:

- Cover cropping.
- Soil-borne diseases.

Key extension methods and delivery components from Soil Wealth ICP have also been replicated in the integrated weed management and precision agriculture projects with demonstration sites, as well as VegNET and the development of resources and running events.

The next phase started in 2017 and will run for five years to 2022.

### **How will the project team be able to assist potato growers into the future? What are your main aims?**

This current phase of the SWICP project started in 2018 and, after a year servicing the vegetable industry, we have recently extended the program to the potato industry.

The focus for the potato industry is on three key areas:

- Learn – training and events, resources, global scans.
- Experience – demonstration sites, new equipment and technology.
- Connect – keeping up to date with the latest developments.

The key achievements under Phase 2 so far have been the ability to proactively scan and review new developments in technological fields, take a production systems approach reflecting the increase in challenges and sophistication of

vegetable farming (as mentioned earlier), as well as showcase innovations in soil and crop health management that can increase productivity/pack out rates – for example, strip-tillage equipment combined with cover cropping.

In addition to the national network of demonstration sites continuing to operate around the country, which are the centre-point for regional engagement and resources, there are a number of new activities underway during Phase 2. These include the broadening of the masterclasses to crop nutrition, as well as global scans and reviews that bring the latest research from overseas and apply it through the lens of Australian vegetable and potato growing. Some recent scans have covered weed technology, as well as recycled organics.

### **How can growers get involved?**

There are a number of different ways to get involved. Attend one of our many events around the country, which include farm walks at the regional demonstration sites as well as masterclasses, webinars and other workshops/forums throughout the calendar year. You can also sign-up for monthly e-newsletters, The Bulletin, on our project website or join the national Partnership Network that connects growers and service providers, another new initiative under Phase 2: [soilwealth.com.au/contact/](http://soilwealth.com.au/contact/). Stay connected through social media as well, with Twitter (@SoilWealth and @ProtectingCrops) and the Facebook demonstration site pages for all the latest news, updates and resources.

Head to [soilwealth.com.au](http://soilwealth.com.au) – your one-stop-shop for improved soil management and plant health in the Australian vegetable industry.

### **How many growers have participated in this project to date, and what feedback have you received as the project has progressed (from phase 1 to phase 2)?**

The feedback from the vegetable industry has been strong and positive.

Phase 1 engaged directly with over 2,000 growers and industry stakeholders representing 30,000 hectares, or 25 per cent of the total vegetable farming land in Australia. Of these growers, 80 per cent say they can now make better informed decisions as a direct result of these projects. Of the growers engaged,

47 per cent have changed practices and a further 35 per cent are considering change.

A summary of the achievements for the first phase of the project from 2014-2017 can be viewed here: [soilwealth.com.au/resources/videos-and-apps/soil-wealth-and-icp-achievements-phase-1/](http://soilwealth.com.au/resources/videos-and-apps/soil-wealth-and-icp-achievements-phase-1/) (developed May 2017).

Phase 2 is tracking really well, and we continue to get positive feedback from industry. One of the key ways we do this is from the Project Reference Group, which meets regularly, as well as the demonstration site growers and their agronomists. Keeping your finger on the pulse and responding to industry needs is really important to maximise the value of the levy investment.

### **Doris and Donna, what type/s of potato research have you conducted during your career?**

Donna has undertaken extension and facilitation of grower groups in Tasmania including newsletters, forums, field days, workshops and study tours covering topics such as irrigation management, business management, harvesting and controlled traffic farming. She has also been involved in projects evaluating crop forecasting equipment and data management systems and evaluation of biodegradable mulch in potato crops.

Doris has worked for many years with the potato industry nationally and in Tasmania. This has included projects on pest and disease planning and management, biosecurity planning and surveillance (including potato cyst nematode; PCN), nutrition management, the use of cover crops, and seed quality. Doris has undertaken extension and facilitation projects and consulted extensively with industry on their priorities and needs.

### **What do you enjoy most about being involved in potato research?**

Donna: Potatoes are a fascinating crop. I started learning about potatoes as a young child in the garden with Dad.

Doris: The challenge associated with the diversity of the industry and working with growers and industry to do better. There are many committed people who are great to work with.

**Where do you think more potato research needs to be undertaken (e.g. pest and disease)?**

Donna: We need people who can coordinate what's already available; people who are good at connecting the dots.

Doris: Research needs to be integrated rather than addressing just a single issue. For example, a soil-borne disease project shouldn't be done in isolation; the research needs to consider soil biology, nutrition and irrigation. The best research involves multi-disciplinary teams working collaboratively with growers, processors and agronomists.

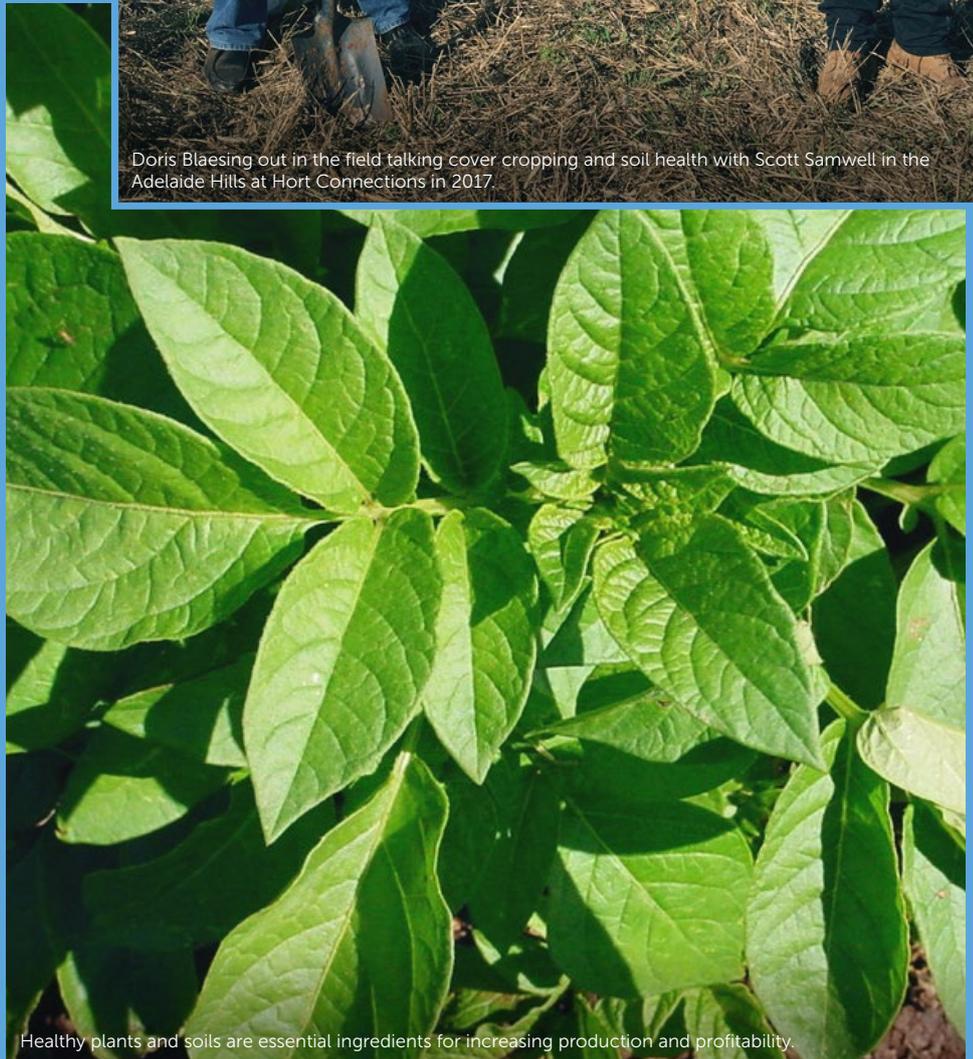
**To the team, what does being nominated for the Bayer Researcher of the Year award mean to you?**

Being nominated was a thrill for the SWICP team. It recognises that a team approach can be very effective in building on individuals' knowledge and making sure that the best and latest information gets out to the grower. It also means that the work done by the growers and agronomists in the field is recognised and can build on the research to come up with practical solutions.

Connecting people and being part of the industry is very rewarding. Being able to deliver a tangible return on the levy investment and work in partnership with so many individuals and organisations like Hort Innovation is a real privilege.



Doris Blaesing out in the field talking cover cropping and soil health with Scott Samwell in the Adelaide Hills at Hort Connections in 2017.



Healthy plants and soils are essential ingredients for increasing production and profitability.

**Find out more** 

You can access all the resources, as well as news and events from around the country at [soilwealth.com.au](http://soilwealth.com.au). For more information, please contact project leaders Dr Gordon Rogers on 02 8627 1040 or [gordon@ahr.com.au](mailto:gordon@ahr.com.au) and Dr Anne-Maree Boland on 03 9882 2670 or [anne-mareeb@rmcg.com.au](mailto:anne-mareeb@rmcg.com.au).

*Soil wealth and integrated crop protection – phase 2* is a strategic levy investment under the Hort Innovation Fresh Potato, Potato Processing and Vegetable Funds.

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

Project Number: VG16078



## Exploring *Spongospora* suppressive soils in potato production

A strategic levy investment being undertaken in New Zealand is determining if different field soils affect the development of powdery scab on potatoes, and whether soil physical, chemical and/or biological characteristics influence this important potato disease. After beginning in March 2016, the project is now in its third phase. Professor Richard Falloon and Peter Wright from the New Zealand Institute for Plant and Food Research Limited provide an update.

A research project is investigating biological, chemical and physical characteristics of field soils reputed to suppress the quality- and yield-limiting potato diseases caused by *Spongospora* subterranea. These diseases include galling of underground stems and roots and powdery scab on tubers (see images 1 and 2). Previous field research indicated that soils in the Pukekohe region of New Zealand were suppressive of these important soil-borne diseases, even when successive potato crops were grown for many years. The project aims to characterise soil factors associated with disease suppression, and to suggest crop management methods that could be used to reduce *Spongospora* diseases. This research commenced in 2018, and is funded as project PT16002 – ‘Exploring *Spongospora* suppressive soils in potato production’ by Hort Innovation with co-funding from Potatoes New Zealand Incorporated. This project is a strategic levy investment under the Hort Innovation Fresh Potato and Potato Processing Funds.

### Making progress

The study has been in two phases, and includes collaborating researchers with expertise in plant pathology, soil sciences and microbial bioinformatics, using large greenhouse experiments (see images 3 and 4).

**Phase 1** of the project assessed development of *Spongospora* diseases in 12 different field soils, from vegetable production areas in northern New Zealand (including Pukekohe). This showed that the diseases developed more in some soils than others, indicating disease conduciveness and “natural” suppressiveness. Detailed analyses characterised the respective soil microbial populations, and the soil chemical and physical characteristics. Assessments were also made of *Spongospora* disease intensity and tuber yields for potato plants grown in the soils. Six of the soils were conducive to *Spongospora* diseases and six had disease suppressive effects.

**Phase 2** concentrated on seven Pukekohe soils, all of the same soil type but with different cropping histories.

One soil was the most *Spongospora*-conductive in Phase 1, and the other six were suppressive. A second large greenhouse experiment was carried out, which aimed, firstly, to confirm the respective disease reactions; secondly, to further investigate the soil physical, chemical and microbial characteristics and thirdly, to determine if disease suppressiveness could be transferred from one soil to another.

The soils were collected from respective fields into large pots (each 35-litre capacity), and the pots were removed to a greenhouse. Samples from each soil were:

- Assayed for soilborne potato pathogens (using the PREDICTA® Pt service from the South Australia Research and Development Institute).
- Assessed for pH and chemical element and organic matter contents.
- Analysed for microbial biomass carbon and nitrogen and soil structure parameters.
- Assayed, using DNA technologies, for microbial profiles (bacteria and fungi).

Seed tubers (*Spongospora*-susceptible cultivar ‘Agria’, one per pot) were planted, and some pots were inoculated with *Spongospora*. For each soil, four experimental treatments were applied:

1. No *Spongospora* inoculum added to soil (experimental control).
2. *Spongospora* inoculum added at seed tuber planting.
3. *Spongospora* inoculum added to previously heat-treated soil.
4. *Spongospora* inoculum added, to a mixture of one part of each “suppressive” soil to nine parts of a powdery scab-conductive soil (the most conducive in Phase 1).

The pots for the experiment were arranged in an appropriate experimental design in an unheated greenhouse. Some of the resulting plants were harvested 12 weeks after planting, and severity of *Spongospora* root galling was assessed. At 17 weeks after planting, the remaining plants were harvested, and tuber yields and powdery scab severity were assessed. The experiment included a total of 288 pots.



Image one: Potato tuber with severe powdery scab. Image courtesy of Robert Lamberts.

## Research results

For the conducive soil, 30 per cent of the harvested potatoes had more than five per cent of their surfaces affected by powdery scab, while all six Pukekohe soils were suppressive to *Spongospora* (0 to seven per cent of tubers with that amount of the disease). Heat treating the soils increased the incidence and severity of powdery scab in the harvested tubers. Suppressiveness was partially 'transferred' to the conducive soil, indicating that soil micro-organisms were likely to be involved with disease suppression.

Potato crops in the preceding five years did not affect disease suppression. High soil organic matter (OM) content increased powdery scab. Two inoculated soils with less than three per cent OM had no tubers with severe powdery scab, but three soils with greater than four per cent OM produced many powdery scab-affected tubers. Detailed assessments of differences in the soil microbial populations are being completed.

High soil manganese (Mn) content was also associated with reduced tuber powdery scab, while contents of other chemical elements were similar in the soils. The *Spongospora*-conductive soil (pre-planting) contained 49 mg Mn per kg of soil. Manganese contents of all six the suppressive soils were high (from 292 to 670 mg Mn/kg soil).

## Next steps

The project has recently been extended into **Phase 3**, to assess effects of manganese on *Spongospora* diseases. A third greenhouse experiment (similar to those for Phases 1 and 2) was established in August 2019. This aims to determine if soils with different natural manganese contents, or if soil and foliar applications of this element, affect potato plant growth or development of powdery scab. The experiment includes 12 field soils of different soil types and cropping histories from different locations (in northern New Zealand). The trial design and methods are similar to those used in Phase 1. This experiment may indicate that manipulations of manganese could provide a new strategy for management of *Spongospora* diseases.



Image two: *Spongospora* root galls on a potato plant from the Phase 2 pot trial. Bar = 1 mm. Image courtesy of Richard Falloon.



Image three: Layout of greenhouse experiment. Image courtesy of Peter Wright.



Image four: Greenhouse pot, to be planted with a potato tuber. Image courtesy of Peter Wright.

Find out more 

Please contact Professor Richard Falloon at [richard.falloon@plantandfood.co.nz](mailto:richard.falloon@plantandfood.co.nz).

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: PT16002

**Hort  
Innovation**

# Returning consistent yield response in Mallee soils

Biological substances, microorganisms, and compounds form biostimulants that can improve yield performance and improve overall crop health when applied directly to plants, seeds or soil. *Potatoes Australia* reports.

Global interest in the use of biostimulants to enhance crop production beyond what conventional fertilisers can achieve continues to grow. This cutting-edge industry is expanding at a rate of over 15 per cent per year, as growers see the benefits of putting quality products into the right slots for their crops.

Recent work completed in the Mallee soils in South Australia has shown that the combination of Omnia's Rhizovator™ OB and Bacstim® 100 products applied in-furrow at planting have returned a 13 per cent yield increase across four different trials (see below).

Omnia Innovation and Development Manager Andrew Doecke said Rhizovator OB is the latest generation of soil applied biostimulants, combining the K-humate® product with kelp, fulvic and amino acids.

"It brings together the various aspects of improving nutrient efficiency, with root and microbial stimulation into one product," Mr Doecke said.

"After many years of research, our recently launched Bacstim® 100 product, which is a high concentration five strain bacillus inoculant, is showing its worth. This contains spore-forming bacteria that

are able to handle harsh conditions and grow with the root system of the plant to improve nutrient uptake, produce rooting hormones and push back against soil-borne fungal infections."

## Promising results

Mr Doecke said applying these biostimulants has resulted in improved potato stem weights, lower disease inoculum on stems and tuber skins, and improved yields in multiple trials in Mallee soil types.

"Combining Rhizovator™ OB at 10L/ha with Bacstim® 100 at 1L/ha via an in-furrow applicator at planting has been the most effective application method. The bacillus in the latter are able to lie dormant until the roots shoot from the seed piece, and then can grow from there.

"A 13 per cent yield increase is proving that these are a valuable way of incorporating biostimulants into high performance potato crops."

Find out more 

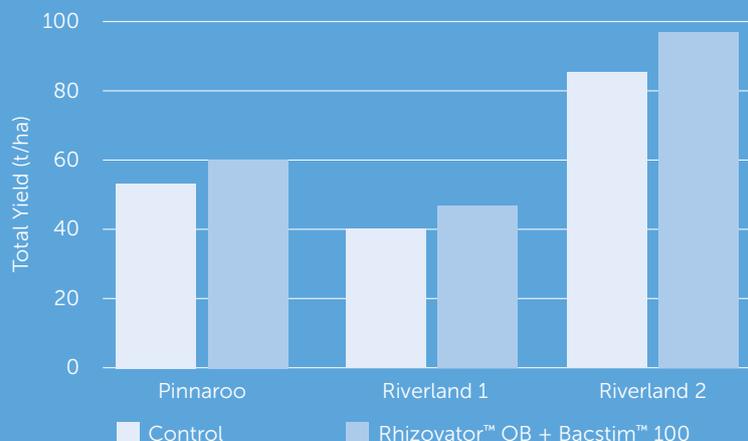
For further information, please visit [omnia.com.au](http://omnia.com.au) or call 0427 399 708.

## Maintaining healthy soils – a key focus

Omnia Specialities Australia is a leader in the development and manufacture of speciality fertilisers and biostimulants including humates, fulvates and kelp products. Omnia Specialities has been manufacturing humate soil conditioners and fertilisers in Australia since 1990. Only the best quality leonardite is used in the specialised process, yielding the most concentrated humic acids in the world.

In addition to fertilisers, the company's full range of trace elements, biostimulants and plant health products are used globally to improve crop health, yields and improve soil health in a sustainable and environmentally conscious way.

Potato Yields - South Australia, 2017-18



- Bacstim™ 100 1 L/ha combined with Rhizovator™ OB 10-20 L/ha applied into furrow at planting
- Average yield increase of 7.8t/ha or 13.3 per cent
- Gross margin increase of \$3834/ha with a return on investment over \$45/\$1 spent



Syngenta Territory Sales Manager, Tasmania Wayne Richardson.

## Testing times for soil health

With a major potato planting season now upon us, it's worth taking some time to review what will be important for good crop establishment in the coming weeks. Implementing measures that are industry best practice will have a huge impact on final yield and crop quality. Syngenta Territory Sales Manager, Tasmania Wayne Richardson reports.

What potato growers do with their soil management ahead of the coming planting season will be crucial. Key aims should be to have disease-free, high fertility soils and employ tillage practices and seedbed preparation that preserve soil structure, and promote fast crop emergence. That way, roots can penetrate deep into the profile quickly and continue to grow in good water-holding capacity and drainage conditions.

Many growers are now using one pass technology to plant crops. Experience is showing this reduces soil compaction considerably, which has a host of benefits.

Compaction reduces the rate of root growth, as well as water and air movement. Slower water drainage results in longer periods of time when the soil is too wet, creating ideal conditions for many root diseases.

Reducing compaction can assist growers with disease control by reducing waterlogging around the tuber site, reducing the damage caused by diseases such as pink rot and powdery scab.

### Disease prediction

Paddock history will give some indication of those diseases that might be problematic this season. Growers should take note of any soilborne diseases and have a fungicide strategy in place before planting to cope with these diseases.

There may be situations where the paddock history is uncertain, unknown or unavailable. In these scenarios in particular, it will be important to conduct a PREDICTA® Pt soil DNA test.

PREDICTA Pt helps growers identify which soil-borne pathogens pose a potential risk. Establishing which soil-borne diseases are in the soil is the best way to develop the most cost-effective management plan.

PREDICTA Pt provides growers with an indication of the disease risk from:

- Powdery scab (*Spongospora subterranea*).
- Black dot (*Colletotrichum coccodes*).
- Root knot nematode (*Meloidogyne fallax*).

Population densities are also reported for the following pathogens:

- *Streptomyces txtA gene*.
- *Rhizoctonia solani AG3*.
- *Rhizoctonia solani AG2.1*.
- *Meloidogyne hapla*.
- *Verticillium dahlia*.
- *Pratylenchus penetrans*.
- *Pratylenchus neglectus*.
- *Pratylenchus crenatus*.

More information on PREDICTA Pt testing can be viewed at the PIRSA website ([pir.sa.gov.au](http://pir.sa.gov.au)), where growers can access information on how to submit samples, how to access PREDICTA Pt services through an accredited consultant. Growers can also access a contact list of accredited agronomists who can help growers interpret the test results and provide advice on management options to reduce the risk of yield loss.

Growers will find PREDICTA Pt testing invaluable in making informed decisions about what varieties to grow, what crop protection products to use and even whether or not they should change paddocks.

### Soil testing

Growers should also test paddock soil to accurately determine nutrient availability. Getting the right nutrient status will really set the crop up for the season. Phosphorous and nitrogen are two of the key nutrients needed to maintain healthy soils.

Nitrogen drives crop growth and yield. Without it, there is little chance of a commercially acceptable yield. Phosphorus is crucial to enhancing early crop growth and tuber set, as well as promoting tuber maturity. Potato growers should be aiming to apply the full phosphorus requirement for the crop by planting time.

#### Find out more R&D

For more information or to ask a question, please contact your local Syngenta Territory Manager, the Syngenta Advice Line on 1800 067 108, visit [syngenta.com.au](http://syngenta.com.au) or email [Potatoes Australia: info@ausveg.com.au](mailto: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.



**Jordan Brooke-Barnett**  
AUSVEG SA  
Chief Executive Officer

South Australian  
Produce Markets  
Burma Road  
Pooraka, SA 5095  
Phone: 08 8221 5220  
Website: ausvegsa.com.au

## AUSVEG SA

At AUSVEG SA, we are continuing our advocacy efforts on behalf of SA growers to ensure that we work with governments at all levels to maximise the growth of our sector. These activities are undertaken by AUSVEG SA CEO Jordan Brooke-Barnett, with support of the Board, and feedback from members is always welcome.

The AUSVEG SA CEO has been appointed to the South Australian Government's Migration Advisory Council, chaired by Minister the Hon. David Pisoni. Currently, we are advocating for further reforms to skills lists and administrative reforms to make South Australia's Designated Area Migration Agreement (DAMA) more accessible to growers to address skills shortages in the state.

AUSVEG SA recently attended the launch of the South Australian Government's Regional Growth Strategy by Minister the Hon. Tim Whetstone MP and Minister the Hon. David Ridgway MLC. The South Australian Government has set a target to achieve three per cent growth across food, wine and agriculture and AUSVEG SA will be providing a submission as part of this process, focusing on ensuring industry has access to the infrastructure and support to grow as well as proposing reductions to red tape.

Currently, AUSVEG SA is providing feedback into the development of a new Biosecurity Act for SA. We are advocating for reforms, which will provide industry with better assurance that timely and efficient decisions will be made in the event of an incursion to keep markets open and protect industry. We will continue to work closely with Biosecurity SA on key issues such as tomato-potato psyllid, and work to increase preparedness in the face of a potential incursion. Currently, we are looking into options to put biosecurity plans in place with businesses to reduce timeframes for the resumption of trade should an incursion be detected in the state.

AUSVEG SA is also in discussions with government around progressing the \$29 million in planned flood mitigation activities necessary to safeguard over \$500 million in produce grown or packed on the Northern Adelaide Plains.

AUSVEG SA continues to engage with the Ag-Tech Agenda, being led by Minister the Hon. Tim Whetstone in the agriculture portfolio. AUSVEG SA is currently advocating for investment in programs which could see labour-saving technology such as field robotics developed and deployed more widely in the SA industry.



**Garry Kadwell**  
Crookwell Potato Association  
Incorporated  
President

169 Goulburn Street  
Crookwell, NSW 2583  
Phone: 02 4832 1800  
Website: seedpotatoes.com.au

## Crookwell Potato Association Incorporated

The harvest for 2019 has all but concluded. Yields were consistent, with the drier growing conditions keeping oversize to a minimum.

The drier conditions also caused some insect damage and black stem end creating difficult grading issues. Seed was dispatched to many regions, mainly across to South Australia but also to Fiji, Norfolk Island and other traditional long-term clients.

It is pleasing to see innovative marketing such as low GI and low-carbohydrate potatoes prominently displayed in supermarkets and educating consumers on the benefits of potato in their meal selection. Microwavable potatoes and chips are also keeping potatoes in vogue among a time-poor customer base.

In other news, I would like to congratulate Mark Pye from Zerella Fresh on receiving the 2019 AUSVEG SA Grower of the Year Award. Mark is a long-term client of New South Wales seed.

As we wind up the season, all thoughts are on the weather; hoping for substantial rain to replenish water supplies for next summer's production.

Thank you to all buyers of NSW seed and good luck, good yields and good fortune.



**Nathan Richardson**  
Tasmanian Farmers and Graziers  
Association  
Vegetable Council Chairman

Cnr Cimitiere and Charles Streets  
Launceston, TAS 7250  
Phone: 03 6332 1800

## Tasmanian Farmers and Graziers Association

As we draw closer to the planting season, potato negotiations have recently concluded in Tasmania between growers and the two processors in the state, Simplot and McCain. These were facilitated by the Tasmanian Farmers and Graziers Association (TFGA) and its committee of members led by Trevor Hall (Simplot) and Beau Gooch (McCain). Several issues facing potato growers and the broader industry were raised during negotiations.

The value of the Tasmanian climate and water availability for the consistent supply of potatoes and vegetables is always an important consideration in negotiations. While other states grapple with uncertain water allocations at high cost, Tasmania remains the best place for the reliable supply of produce. It would be very difficult to operate similar production facilities elsewhere in the country, based on the fact that our fellow farmers may not be able to plant a crop this coming season.

The shortage of both unskilled and skilled labour and the impacts on the upcoming and future harvests is a major concern for all growers. The competition

and attraction in other industries for employees is a difficult obstacle for the agricultural sector to overcome. However, as the issue of labour shortages is recognised across the country, all sectors of the industry need to continue to work together to attract employees back to agriculture.

Many growers also diversify into livestock and other crops. With good prices across beef and lamb, an increase in poppy plantings, and a healthy demand for grains and small seeds, there is no shortage of options for Tasmanian farmers.

The ability of potato producers and processors to be able to come together to discuss issues such as labour shortages as well as contracts and price is important in maintaining industry unity. The TFGA is able to facilitate these discussions through the collective bargaining agreement with the processors and the Australian Competition and Consumer Commission (ACCC). The permission to collectively negotiate is important in ensuring that a fair and equitable deal is offered and adhered to, by, and all in the industry. As negotiations continue the value of this agreement is evident.



**Tom Cohen**  
AUSVEG VIC  
State Manager

3 Glenarm Road  
Glen Iris, VIC 3146  
Phone: 0427 098 461  
Website: [ausvegvic.com.au](http://ausvegvic.com.au)  
Email: [info@ausvegvic.com.au](mailto:info@ausvegvic.com.au)

## AUSVEG VIC

Victorian growers need to be making sure that they are working with their labour hire providers to make sure that they have begun the process to become a registered labour hire contractor, with the new laws coming into effect on Wednesday 30 October 2019.

The Victorian Labour Hire Authority has told AUSVEG VIC that for a labour hire provider to continue to provide a labour hire service, it must apply for a licence prior to 29 October 2019.

From 30 October 2019, a host must not engage a provider that has not applied for, or been granted, a labour hire licence by the Authority.

There are various government grants on offer to Victorian growers to help with energy consumption, making your operations more energy efficient. These opportunities are available through Agriculture Victoria, providing growers

with an on-farm energy grant. Eligible primary producers can apply for a grant until March 2020.

AUSVEG VIC is here for growers who are looking to apply for grants, and can assist growers with their applications. Please contact the AUSVEG VIC State Manager to discuss this more.

Meanwhile, AUSVEG VIC is holding its annual general meeting (AGM) on Friday 25 October at the Junction Oval in St Kilda. All AUSVEG VIC members are encouraged to attend the meeting to hear about the achievements from the past year, and the plans for the next 12 months.

To attend the AGM, remember that you need to be a financial member of AUSVEG VIC, and memberships are still being collected for 2019/20. Please contact the AUSVEG VIC State Manager for more details about becoming a financial member.



VGA trading as AUSVEG VIC



**Gordon Jones**

Seed Potatoes Victoria  
President

PO Box 571  
Warragul, VIC 3820  
Phone: 03 5622 3025  
Website: [spv.org.au](http://spv.org.au)  
Email: [admin@spv.org.au](mailto:admin@spv.org.au)

## Seed Potatoes Victoria

Potato crops have been harvested in all regions of Victoria for the season, with untimely very wet and dry weather conditions making harvest difficult for growers at times. Nevertheless, plants recovered well to produce high yields of good quality. Most lines of seed have been cleared successfully.

Several SPV members attended the Potato R&D forum on 26 June as part of the Hort Connections conference in Melbourne. Attendees were impressed by the range of speakers and in-depth discussions, which will assist in giving direction to future R&D project funding.

Following the success of the tomato-potato psyllid (TPP) tour to New Zealand in February this year, a second similar tour is scheduled for 11-14 February 2020. Planning is currently underway, and this is being led by Sebright Adventures in conjunction with Potatoes New Zealand, AUSVEG and Seed Potatoes Victoria. Information will be distributed to industry over coming months.

A study tour to Ireland for the 2021 World Potato Congress is also in development by Sebright Adventures. Suggestions from industry for items of interest to be included in the tours are welcomed and can be directed

to Elizabeth Wharton from Sebright Adventures by contacting her at: [sebrightadventures@outlook.com](mailto:sebrightadventures@outlook.com), 0484 902 702 or PO Box 123, Toongabbie VIC 3856. SPV has been able to provide communication and support for this trip in the past, along with a small rebate for seed grower participants. We are happy to be associated with Sebright tours in ongoing trips in whatever capacity given the terrific value and knowledge gained.

After many years of wonderful service, SPV Administration Officer Pauline McPherson has retired, with Elizabeth Wharton coming into the role. The SPV Committee thanks Pauline for her great work and tireless support of the industry. Elizabeth has worked previously with the potato industry as an extension officer with potato grower groups throughout Victoria, and has a background in project and stakeholder management. Elizabeth can currently be contacted on the details mentioned above. Further contact details will be included in the upcoming seed directory.

Thanks to all growers for their hard work and perseverance throughout the season, and best wishes for a relaxing break before preparations begin for 2020.

## Calendar

21 November 2019 –  
National Agriculture Day

**Where:** Various events around Australia

Since its inception, AgDay has grown to become a broad coalition of industry groups, corporate Australia and government. It is led by the National Farmers' Federation

Hosting an event for National Agriculture Day?  
Register your event and receive a special #AgDayAU merchandise pack.

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

25-28 November 2019 –  
Australasian Plant Pathology Society Conference

**Where:** Melbourne Convention and Exhibition Centre

The Australian Plant Pathology Society (APPS) is hosting its 22nd Biennial Conference at the Melbourne Convention and Exhibition Centre. This conference will be the climax of the APPS' 50th birthday celebrations with the themes of 'strong foundations, future innovations'.

The event will include scientific presentations by local and international speakers, supported by engaging field tours and workshops. There will also be plenty of opportunities for networking at APPS's social functions and 50th birthday conference dinner.

Further information: [apps2019.org](http://apps2019.org)



# Young Potato People

G'day again,

Time, like our tractors preparing a paddock, ploughs on. Some areas are into full swing of harvest, while others (like my area) have started planting. No matter what time of year it is in Australia, you can find some potato action. I find it very interesting to see what other people are up to around the traps when I check out the 'Young Potato People' Facebook page. It really helps to show you that other people are in the same situation as you. That is the main reason the YPP was created.

The YPP was always built as a support network, so that young people involved in the potato industry would have a place to catch up with likeminded young people who were dealing with the same situations as them. With more machines being able to do the jobs that humans would normally do, the number of young people in the industry is becoming more concentrated and, in a way, more isolated. With the growing use of things like optical graders and GPS guidance, we are seeing less people employed which means those still working in the industry are doing it with less workmates.

Don't get me wrong, I love technology! I think GPS guidance is one of the best things we have invested in on our farm as it saves time and money. We haven't quite got to the stage we can justify buying an optical grader though. It might happen one day. The rate that technology is being developed now is incredible. Soon the tractors we use will know if something is wrong with them before the person sitting in the seat does – if we have someone in the seat at all. Drones will soon take over crop inspections, and packing sheds can be fully automated to the point where one or two people will be able to operate the entire thing.

The one thing that does worry me with all this is the people. What do we do with our time once we are not really needed to drive a tractor or work the packing shed? I've never been that keen about spending too much time in front of the computer, and I don't know many farmers who are. So now that the Thorpdale pub has re-opened, we might all have to just hang around there while we figure out what to do with our spare time.

I would like to leave you with this quote I found on Google:

"The production of too many useful things results in too many useless people." – Karl Marx

Cheers,

Stu



@youngpotatopeps



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