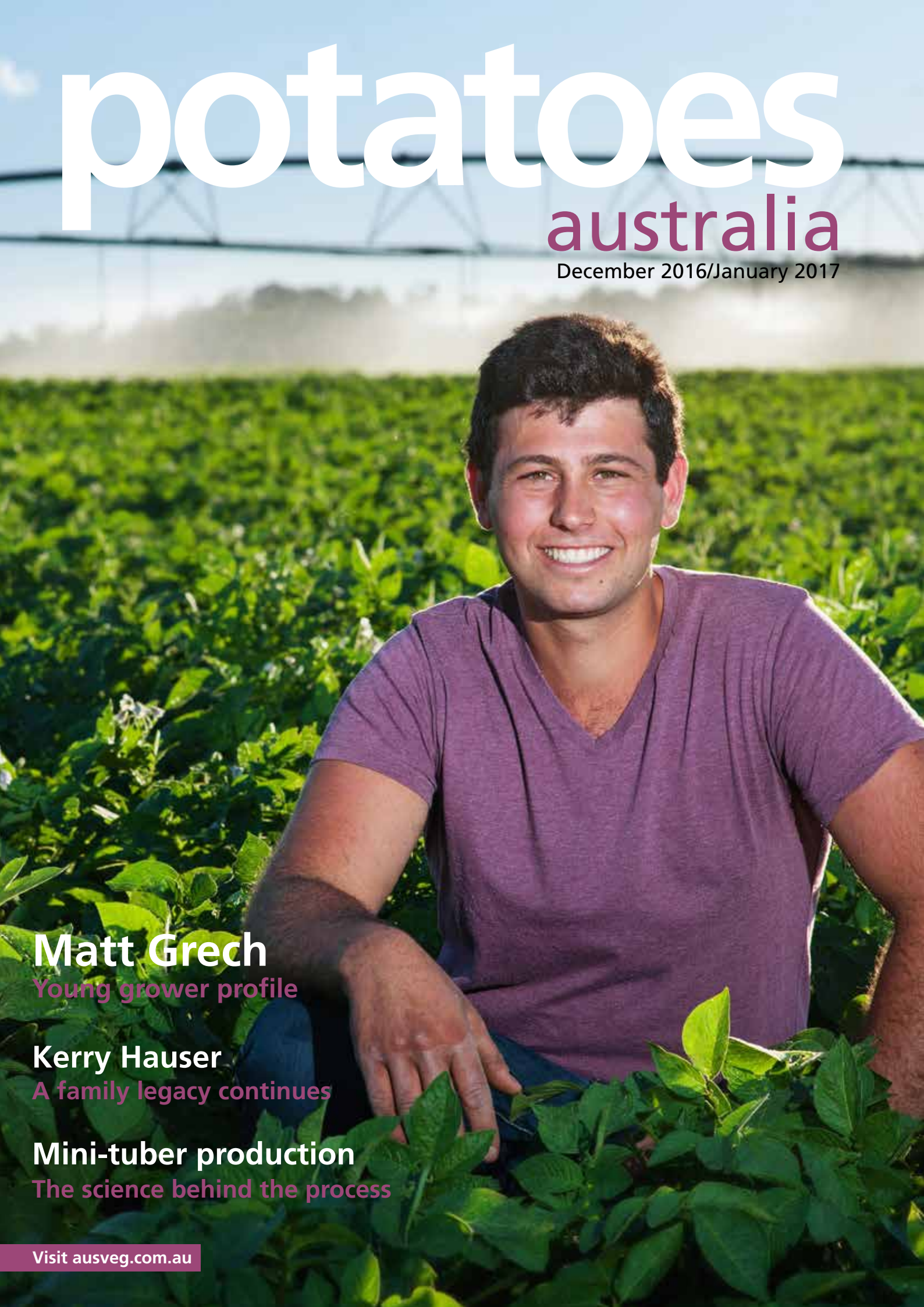
potatoes australia

December 2016/January 2017



Matt Grech
Young grower profile

Kerry Hauser
A family legacy continues

Mini-tuber production
The science behind the process

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Geoff Moar

AUSVEG Chairman

With the New Year just around the corner, it is timely that we look to our future priorities in the potato industry and reflect on the work achieved in 2016.

In particular, this month has brought the announcement of a compromise deal on the controversial "backpacker tax", with the Federal Government agreeing to a rate of 15 per cent and a reduction of the tax rate on backpackers' superannuation from 95 per cent to 65 per cent.

This resolution comes after strong, ongoing advocacy from a number of industry groups including AUSVEG, and we are pleased that the revised tax rate is now comparable with our international competitors. While this is welcome news for the industry, AUSVEG will continue to monitor the number of working holiday makers coming to Australia under the new tax rate.

One of the challenges facing Australian potato growers is the threat of the Tomato-potato psyllid (TPP), a pest that has caused extensive damage to potato crops in New Zealand. It vectors the bacterium that causes Zebra chip in potatoes, and if it were to arrive in Australia, it would have a devastating effect throughout our industry.

It is imperative that we continue to assist the potato industry to prepare for a possible TPP incursion, and this edition of *Potatoes Australia* outlines the number of ways that growers and industry are on the lookout for this destructive pest.

We are also celebrating the achievements of six potato growers across the country in the annual *Grower Success Stories* publication, which is included with this magazine. It is wonderful to see growers taking the opportunity to further their knowledge in cutting-edge potato production and, as a result, are reaping the rewards from vital industry-funded R&D projects.

Finally, AUSVEG held its Annual General Meeting on 24 November 2016 which coincided with our Board meeting, during which I was re-elected to the position of Chair. I would also like to congratulate Queensland vegetable grower Belinda Adams on her appointment as Deputy Chair.

Belinda replaces Tasmanian representative David Addison, who has worked tirelessly in the role for three years. Although David decided to stand down as Deputy Chair, he remains an integral part of the AUSVEG Board and I thank him for his ongoing contribution, guidance and assistance.

I wish all our readers the very best for the year ahead.

Geoff Moar
Chairman
AUSVEG

Simon Bolles

AUSVEG Interim CEO

I am pleased to confirm that AUSVEG is in the final stages of announcing its new Chief Executive Officer. I would like to take this opportunity to thank the potato and vegetable industries for their ongoing support during my time as Interim CEO, and say that it has been a pleasure to represent Australia's potato and vegetable growers over the past seven months. In the meantime, I look forward to returning to my role as a Skills-Based Director on the AUSVEG Board and to meeting with as many of you as possible at Hort Connections 2017.

In other exciting news for the industry, Arris Pty Ltd will coordinate the delivery of the Potato Industry Extension Program from 2016-2019. During this time, AUSVEG will work closely with Arris to ensure growers and the wider potato community benefit from improved growing practices and new technologies that are communicated through the program. We look forward to seeing the results from this project benefit growers and the wider industry.

Another initiative gaining momentum is Soil First Tasmania, an innovative program established by Tasmanian potato grower Darren Long. Darren has been involved in a number of potato R&D projects over the years and he is a passionate advocate for generating on-farm efficiencies.

In particular, the program is using social media platforms such as Twitter and Facebook to connect growers who are interested in soil health, and provide them with a platform to share ideas and techniques. The results from these discussions can only be positive for growers as they look towards a sustainable future.

In other news, delegate registrations are now open for Hort Connections 2017, a joint initiative between AUSVEG and PMA Australia-New Zealand that will be held at the Adelaide Convention Centre from 15-17 May.

The event will be co-hosted alongside a range of horticultural bodies including Australian Organic, Onions Australia and, in an industry first, Irrigation Australia. I encourage all industry members to attend this significant horticultural event.

While we eagerly await Hort Connections 2017, AUSVEG has released its 2016-17 Suppliers Guide, which has been distributed with this edition of the magazine. This booklet provides a comprehensive list of industry suppliers that potato growers can contact for their everyday business, from administration to irrigation to packaging suppliers. It is certainly a fantastic resource for all growers as you prepare for the next 12 months and I wish you all the best of luck.

Simon Bolles
Interim Chief Executive Officer
AUSVEG

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FRONT COVER:
Matt Grech
Photograph by Ale Photography

Welcome to the final edition of *Potatoes Australia* for 2016. It has been an action-packed year in the potato industry and we look forward to bringing readers even more news, profiles, project updates and R&D information in 2017.

In this edition, we speak to Tasmanian industry leader Darren Long, who has recently introduced the Soil First Tasmania initiative. This social media-based program is set to challenge growers in the industry and their way of thinking about soil health (page 8).

Adelaide-based company Arris will also coordinate the Potato Industry Extension Program over the next three years, and will work closely with growers and other industry members to help deliver extension activities (turn to page 10 for details). Meanwhile on page 16, *The Front Line* reports on a Tasmanian initiative to set up trial traps across the eastern states of Australia to better detect the potential arrival of Tomato-potato psyllid (TPP).

In addition, a joint presentation at the 2016 Plant Biosecurity Cooperative Research Centre's Science Exchange discussed the tools and strategies the Australian potato and vegetable industry could implement to respond to a pest incursion such as TPP. An overview of this presentation is provided on page 28.

This edition of *Potatoes Australia* also delves into the world of mini-tuber production and the importance of developing clean seed potatoes on page 18, while Crookwell Potato Growers' Association President Matthew Gay provides an overview of the nationally-endorsed Quality Assurance program he helped to establish for potato seed in New South Wales (page 24).

Turning our attention to the processing industry, the Potato Processors Association of Australia discusses the management options for Powdery scab, including what appears to be a suppressive soil found in New Zealand (page 27). We then head across to the United States and speak with Cornell University Associate Professor Walter De Jong about a recent research grant that will better prepare the US potato industry to fight the destructive Golden nematode (page 30).

Our grower profile for this edition is Queenslander Kerry Hauser, who speaks about his love for potato harvesting and the on-farm challenges he faces (page 22) while on page 12, New South Wales young grower Matt Grech shares his views on the potato industry and discusses his success with Integrated Pest Management (IPM) practices.

Potatoes Australia would like to thank readers for their support in 2016, and we wish you a Merry Christmas and a safe and happy New Year.

SEND US YOUR STORY IDEAS AND LETTERS!

Potatoes Australia is always on the lookout for local and international potato R&D projects, leading growers and industry news to profile in the magazine.

If you have a great idea for a potential article or a letter to the editor, let us know! Email info@ausveg.com.au or call 03 9882 0277.

Putting soil first in Tasmania

THE BENEFITS OF HEALTHY SOIL IN THE POTATO AND VEGETABLE INDUSTRY ARE BEING HIGHLIGHTED THROUGH WORKSHOPS AND MORE RECENTLY, SOCIAL MEDIA CHANNELS. *POTATOES AUSTRALIA* SPOKE WITH MG FARM'S DARREN LONG, WHO RECENTLY ESTABLISHED SOIL FIRST TASMANIA – AN INITIATIVE THAT USES TWITTER AND FACEBOOK TO CONNECT WITH GROWERS AND CHALLENGE THEIR THINKING.

Sheffield potato grower Darren Long is no longer alone in his quest to improve soil health in potato and vegetable crops.

Darren has been trialling various on-farm practices for more than 10 years, and when he started out he felt somewhat isolated.

"I'd been doing a bit of work down here with biofumigation and it all started from that – from the point of view of controlling diseases for potato production. The flip side to that is, we're actually improving our soil health and structure, as well as the water-holding and nutrient-holding capacity," he said.

"At the time, biofumigation in Australia was in its infancy. There was no-one else doing it and I thought, 'Is that because the benefits are not there?' But I quickly realised there were many benefits. We have now ended up with a few people who were interested in what we were doing and are applying the principles across their farming operations."

A current trend

Soil health is a much-talked about topic in the horticulture industry and a very broad spectrum subject, according to Darren.

"What is soil health? Not a lot of people can tell you what healthy soil is. Is it healthy soil if it looks good? It is healthy soil that will grow good crops, or is it healthy soil that's full of disease and you can't grow crops?

"In our potato operation, it's about providing an environment where we know we can comfortably get cropping done without the huge input costs and that's what we're challenging. We're using green manure crops and different techniques with controlled traffic farming and precision agriculture to try and avoid the high input costs to grow crops."

Driving initiative

Joining Darren in establishing Soil First Tasmania is Dave Roberts-Thompson from Table Cape Tulip Farm, flower grower Jeremy Robinson and Serve-Ag Technical Agronomist Julie Finnigan.

"We're just trying to put it out there that it's going to be grower-based; sharing ideas and techniques to improve our soils. We want people from all farming aspects to get on board, share their stories via the webpage, Twitter and Facebook," Darren said.

Grower benefits

While it is early days for Soil First Tasmania, the social media pages have provided growers with a platform to start the soil health conversation.

"It (social media) helps in getting their ideas and seeing what other people are doing. That's what I found hard years ago, that we just couldn't get any information about growing these great crops and we were seeing some great soils and great carbon lock-up," Darren said.

"We were receiving all this positivity, but we just couldn't find any information. These pages are about sharing ideas and techniques, basically to make efficiencies. I've been a pretty big advocate that farming input costs are catching up so quickly that we have to change the way we do things to become more efficient. It gets people thinking about their operation."

Future goals

Soil First Tasmania's long-term goal is to keep challenging people to have healthy soil.

"At the end of the day we want to share knowledge across the broad spectrum of agricultural industries to benefit and assist all growers and ultimately drive the quest to improve soil health," Darren said.

"This goes as far as providing a healthy environment all the way through the food chain, starting with the soils providing for the plant and in turn we can use less chemicals, less water and hopefully grow a healthier, more nutritious plant."

For more information, please visit the Soil First Tasmania Facebook page at facebook.com/soilfirsttasmania or Twitter page at twitter.com/SoilFirstTas.

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

THE NATIONAL POTATO LEVY AT WORK

WHO PAYS THE NATIONAL POTATO LEVY?

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

- The charge is set at 50 cents per tonne for fresh and 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, these funds are managed by Hort Innovation.

HOW IS LEVY MONEY INVESTED?

There are now two pools with different funding priorities.

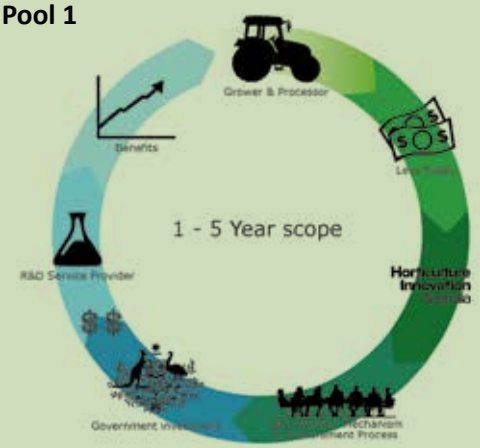
Pool 1 is funded by grower levies with contributions from the Federal Government. This pool has a **one to five year scope** and will invest in applied R&D designed to directly benefit growers. This includes pest and disease management and biosecurity matters, with findings communicated through a variety of channels including *Potatoes Australia.*

Pool 2 has a **one to 15 year scope** and matches strategic co-investment funds with at least $20 million, at the Pool's maturity, of government seed funds annually. This pool aims to address multi- and cross-industry challenges and opportunities of strategic and long-term importance to Australia's horticulture industries.

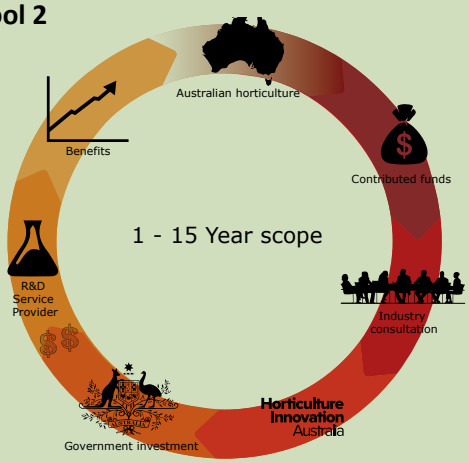
Five 'Foundation Funds' have so far been established in Pool 2 and will work with an expert panel to direct strategic projects. They are:

- **The Leadership and People Development Fund**
- **The Fruit Fly Fund**
- **The Asian Markets Fund**
- **The Green Cities Fund**
- **The Health, Nutrition and Food Safety Fund**

Pool 1



Pool 2



HOW CAN GROWERS GET INVOLVED?

Potato growers play a fundamental role in advising on the allocation of both levy and co-investment funds, and will be engaged in extensive consultation with Hort Innovation in regional grower meetings, industry-specific consultation programs and individual grower and grower group consultation.

Growers can also submit ideas for R&D projects via Hort Innovation's Concept Portal at horticulture.com.au/concept-proposal-form.

For more information about the National Potato Levies, visit ausveg.com.au/rnd/thelevysystem/potatolevy.htm.

AUSVEG

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.
Project Number: PT15007

Horticulture Innovation Australia

Growers to benefit from further potato industry extension

THE IMPORTANCE OF COMMUNICATING R&D INFORMATION DIRECTLY TO POTATO GROWERS, AGRONOMISTS AND PROCESSORS IS KEY TO ENSURING THE INDUSTRY CAN IMPLEMENT THE RESULTS OF LEVY-FUNDED PROJECTS ON-FARM. *POTATOES AUSTRALIA* PROVIDES AN OVERVIEW OF A NEW THREE-YEAR POTATO INDUSTRY EXTENSION PROGRAM THAT WILL WORK CLOSELY WITH INDUSTRY TO MEET GROWER NEEDS AND REQUIREMENTS.

Potato growers throughout Australia are actively seeking extension activities that will demonstrate the benefits of improved growing practices and new technologies. These activities must be timely, locally adapted and delivered in an easily understandable manner to be relevant and acceptable to growers. As a result, the outcomes of any extension activity must have the potential to benefit those participating, with flow-on benefits to the wider Australian industry.

Over the next three years, Adelaide-based Arris Pty Ltd will coordinate the delivery of the Potato Industry Extension Program, and will work closely with a range of industry partners throughout the project. This includes AUSVEG, Hort Innovation, Potatoes South Australia, Victorian Farmers Federation, Potatoes Victoria, ViCSPA, Potato Growers Association of Western Australia, Potato Processors Association of Australia, HortEx and South East SA Potato Growers Association.

Project development

All extension activities for the program will be generated out of needs identified by industry stakeholders, and Arris is eager to hear from them. While it is early days, a Project Reference Group has been established and will be used as a sounding board for ideas in terms of R&D extension.

"We want to use an approach to this project which is a little different," Arris Pty Ltd Senior Research Officer and Australian Potato Industry Extension Project Manager Adrian Dahlenburg said.

"This is a fresh approach. We're strongly committed to asking industry about their concerns, their issues and how we can best develop a program that services those needs.

"We're adamant that we're going to achieve that objective of working strongly with industry, making sure what we do is matching their needs and their requirements."

Grower engagement

Learning and understanding new practices through on-farm and grower participation activities has been highlighted as a key extension method in this project.

Arris has begun its activities, with Dr Steve Johnson from the University of Maine visiting growers in late November. A crops specialist and extension professor, Dr Johnson spent eight days in Australia where he spoke to potato growers in Victoria and South Australia and gave them guidance on particular topics such as soil pathogens and soil diseases.

"The best available expertise and human resources will be used to deliver extension activities to industry. The decision on suitable providers would be made not only on technical capability and subject knowledge, but also include considerations of the provider's delivery capability, their understanding of the local production situation and their respect with the target audience," Mr Dahlenburg said.

The extension program will also create industry awareness of new and innovative practice changes arising from national and international R&D programs that project partners consider to be of potential value to the Australian industry. When practical, international and national experts could be engaged by the project to work in the field with growers to demonstrate beneficial practice changes suited to the local production environment.

In addition, two web-based registers have been established to assist Arris in capturing the extension ideas from industry and to identify potential extension service providers for the project.

These registers can be accessed at:

- arris.com.au/potato-extension/extension (for extension service providers).
- arris.com.au/potato-extension/stakeholders (for stakeholder registration and extension ideas registration).

Mr Dahlenburg added that Arris welcomes and encourages inputs and comments on the project from industry stakeholders at any time.

"There will invariably be varying opinions expressed of many items and we may not be able to pick up on all requests, however our aim is to have a listening ear, develop good consensus programs and develop acceptable compromises when necessary."

KEY COMPONENTS OF THE NEW POTATO INDUSTRY EXTENSION PROGRAM MANAGEMENT BY ARRIS

- Facilitating the determination of industry extension priorities and topics of interest using timely and simple methods for industry liaison and interaction.
- To develop and document the details around specific extension activities including recommendations on delivery organisations or personnel, locations and venues, determination of resources required, budgets, activity monitoring and evaluation.
- Use the inputs and expertise of an industry-focused Program Reference Group (PRG) to assist the development of extension activities and to endorse proposed activities on behalf of industry. The PRG has been selected and details on membership are on the project web page (arris.com.au/potato-extension/about-us). Members of the PRG are happy to receive feedback at any time in relation to this project.
- Plan and implement an annual stakeholder forum to capture industry extension needs.
- Facilitate an annual literature review on topics of interest and ensure outcomes are available to industry.
- Arrange for the visit of international experts that can contribute ideas and/or demonstrate improved practices for the benefit of the Australian industry.

For further information or to discuss the extension program, please contact Adrian Dahlenburg on 0488 739 300 or adahlenburg@arris.com.au or Arris Pty Ltd Managing Director Jim Kelly on 08 8313 6706 or jkelly@arris.com.au.

The Potato Industry Extension Program has been funded by Horticulture Innovation Australia Limited using the Fresh and Processing Potato Levies and funds from the Australian Government.

Project Number: PT15002

Horticulture Innovation Australia

Young grower profile

Name:

Matt Grech

Age:

23

Location:

Theresa Park, Camden, NSW

Works:

Grech Farms

Grows:

Potatoes (crisping varieties) and cabbage

How did you first become involved in the potato industry?

From a young age, I was always interested in farming and was fortunate enough to grow up in a farming family. When I was younger, I used to help my Dad out around the farm. At the age of 17 my family purchased another farm in Cooma, leaving me to become the full time manager of the farm at home. Taking on this role enabled me to realise how much I loved farming.

What is your role in the business?

I am the full time manager of the Theresa Park farm. This includes organising freight, record keeping, machinery maintenance, scheduling planting and harvest dates, crop monitoring as well as organising employees. Whenever there are key decisions to be made, my Dad and I do this together.

How would you describe your average day at work?

No day is the same – some can be very stressful while others can be rewarding. On most days, harvesting is done in the morning while irrigation is ongoing throughout the day and night, especially during the warmer months. Other jobs include spraying, crop monitoring and tractor work. I have been using the LiveFarmer app, which keeps all my crop records and keeps track of all activities carried out on the farm. Some of my day is spent entering data into the app.

You're using Integrated Pest Management (IMP) strategies in your potato crops. What is IPM, and what are the benefits of it?

IPM is a broad-based approach to controlling pests. It incorporates biological, chemical and cultural controls. Using IPM is beneficial as it helps us to grow healthy crops while minimising the impacts on the farm's ecosystem. We aim to increase the number of beneficial bugs, therefore it is important that pest management techniques are not harmful to such species. IPM enables us to maintain beneficial bug numbers. When using IPM, timing is crucial and can be affected by the changing weather.

Photography by Ale Photography.

What do you enjoy most about working in the potato industry?

I enjoy working in an industry that is well-connected and supportive of one another. I also enjoy the farming lifestyle, being outside and working on many different tractors and machinery. You never stop learning.

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

One of the biggest challenges I face working in the industry would have to be fungal diseases and insect pressures. Fungal diseases have a significant impact on the crop – they can take it from good to bad overnight. They are tricky to control as the presence of fungal diseases is significantly impacted by weather conditions. An outbreak can occur without any warning, thus it is difficult to plan for such outbreaks overall, resulting in a decrease in crop yield.

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

I see opportunity in growing good, clean, virus-free seed as many areas are impacted by viruses. Virus-free seed is essential to ensure potatoes meet market specifications. Also, there are opportunities in the development of new varieties which are able to be cold stored for the crisping market.

As a potato grower, what is your biggest achievement so far?

My biggest achievement is my knowledge. Each year I learn and achieve more, allowing me to improve my crop management techniques, as well as my overall crop quality and yield.

If you weren't working in the potato industry, what would you be doing?

If I wasn't in the potato industry, I would still be on the farm growing leafy vegetables.

Where do you see yourself in five years?

In five years' time, I will still be involved in the potato industry. I hope to increase production by being able to grow potatoes all year round. I will be able to achieve this by having another farm located in a suitable area or through the development of a variety that can be grown in the colder months.

Black dot-affected tubers.

Black dot: A threat to the fresh potato industry

BLACK DOT IS CONSIDERED A MILD DISEASE IN POTATOES, HOWEVER IT CAN CAUSE SIGNIFICANT DAMAGE TO WASHED, PRE-PACKED POTATO VARIETIES. THE ECONOMIC CONSEQUENCES OF THE DISEASE ON THE FRESH MARKET POTATO INDUSTRY IN AUSTRALIA CAN BE PROFOUND. *POTATOES AUSTRALIA* TAKES A LOOK AT HOW BLACK DOT OCCURS AND WHAT GROWERS CAN DO TO MANAGE THE DISEASE.

Black dot is a fungal disease caused by the pathogen *Colletotrichum coccodes*. It is found in most parts of the world where potatoes are grown, including all Australian states.

The disease causes skin blemishes and internal discolouration of stem ends, resulting in significant downgrading of produce. Black dot can cause yield losses of up to 30 per cent, as it develops from both infected seed and soil.

While it is considered to be a mild disease, Black dot has become a particular concern over the past decade as the demand for washed fresh market potatoes increases.

Disease transmission

Black dot is mostly spread by seed, which results in infected daughter tubers. It is a very common soil borne pathogen as it can last up to eight years in soil.

There are many host species of Black dot and many plants host latent infections, meaning these infections may not produce visible signs of the disease. It can lie dormant in the plant until activated under the right conditions.

Black dot can often be mistaken for Silver scurf (*Helminthosporium solani*) due to its similarities – Silver scurf has silver lesions that can appear on tuber surfaces, which are almost identical to Black dot. However, unlike Silver scurf, Black dot does not spread in storage.

In the United States, it was found that Black dot can infect foliage after damage from abrasion (for example, after sandstorms).

Disease management

At high inoculum levels, fungicides may not provide adequate control of the disease. Therefore, it is critical to take steps to ensure the threat of the disease is kept to a minimum.

Growers are advised to keep weed hosts at bay, as the disease survives on fat hen, black nightshade and skeleton weed. It is also recommended that growers avoid planting at-risk seed or ground when soil temperatures are greater than 25 degrees Celsius. Wet and warm soil conditions will aid Black dot, so it is strongly advised to avoid over-irrigation.

Seed and/or soil treatments can work using registered fungicides but efficacy can decrease under high pathogen loads. Growers should always check the label to ensure the registration is current.

It is also recommended to harvest as quickly as possible after skin is set. Fumigation does not always work, especially if it is followed by planting with infected seed, and cultivars vary in the susceptibility and expression of the disease. If Black dot is suspected, the DNA-based soil testing service PreDicta Pt can be used to help growers identify the degree of the problem.

The topic for this article was selected following the results of PT13013 *A review of knowledge gaps and compilation of R&D outputs from the Australian Potato Research Program.*

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

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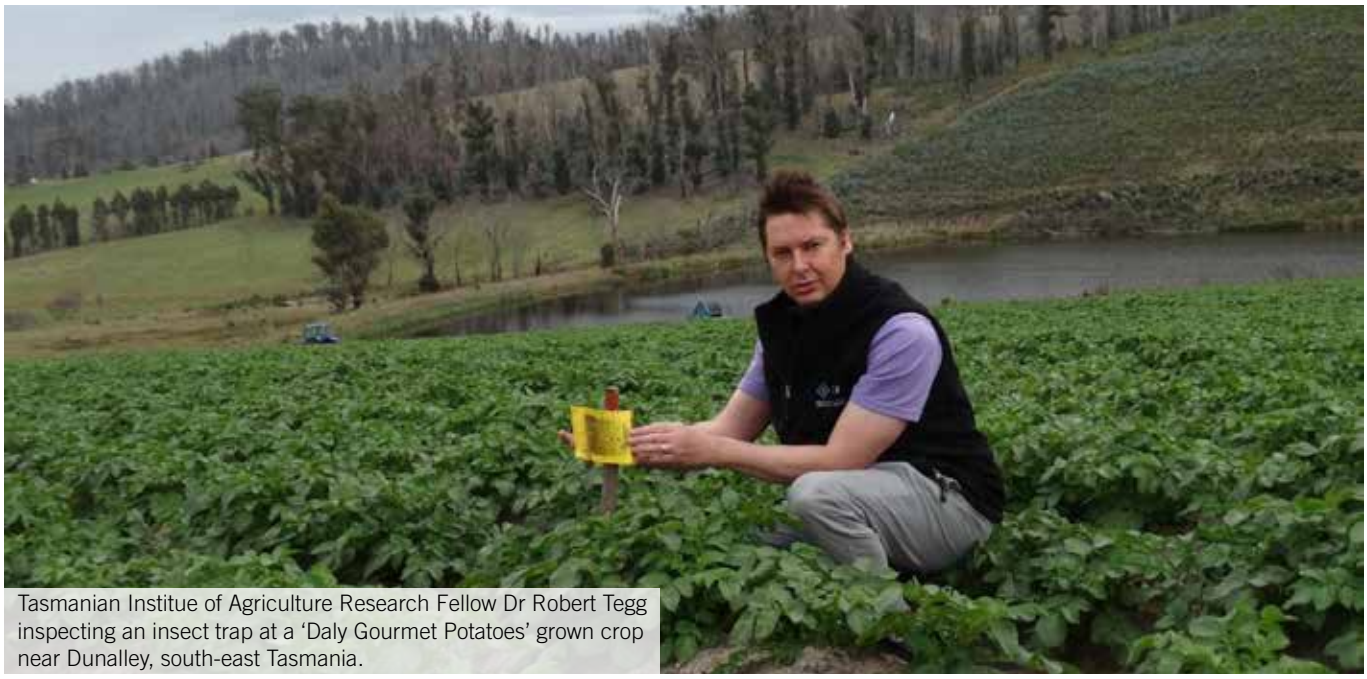

Tasmanian Institue of Agriculture Research Fellow Dr Robert Tegg inspecting an insect trap at a 'Daly Gourmet Potatoes' grown crop near Dunalley, south-east Tasmania.

Growers on the front line: Trapping to protect Australia's borders

TOMATO-POTATO PSYLLID IS CATEGORISED AS AN EXTREME BIOSECURITY THREAT IN AUSTRALIA. GIVEN THE HIGH LIKELIHOOD THAT THE PEST COULD REACH OUR SHORES THROUGH NATURAL PATHWAYS, A TRAPPING PROGRAM HAS BEEN ESTABLISHED BY THE TASMANIAN INSTITUTE OF AGRICULTURE AS A PREPAREDNESS MEASURE FOR GROWERS. AUSVEG BIOSECURITY COORDINATOR CALLUM FLETCHER PROVIDES AN UPDATE ON THE PROJECT.

Tomato-potato psyllid (TPP, *Bactericera cockerelli*) is an insect from the United States that spread to New Zealand in 2005-06. Despite a confirmed identification of the pest in May 2006 in Auckland, by that stage it was being detected in many tomato glasshouses in the Auckland area and it was decided that its eradication would not be possible.

As the psyllid spread, its effect grew. It is now found throughout the country and the cost of control is in the tens of millions of dollars per year.

About TPP and Zebra chip

TPP is a winged insect that is black with a white stripe on its back and is about twice the size of an aphid. It primarily feeds on potatoes, tomatoes and capsicums but can live off, or at least shelter on, a large number of other plants (approximately 20 plant families).

A clear indicator of the psyllid's presence on a crop is the crystals of honeydew that the young (nymph) produce. This is a type of waste that looks like caster sugar and can be found on the leaves of an infested plant.

TPP is also a natural vector of the bacterium *Candidatus* Liberibacter solanacearum, which can cause Zebra chip in potatoes. Along with the psyllid's feeding damage, Zebra chip is a major problem for potato growers. If the psyllid feeds on a plant infected with the bacterial disease, it will carry it to the next plant it feeds on. It only takes 1-2 hours of feeding on the sap for the psyllid to infect the new plant.

Zebra chip disease in potatoes results in reduced crop yield and crop health, stem death, chlorosis of leaf tissue and misshapen tubers. Foliage symptoms in potato plants include stunting, chlorosis and swollen nodes, causing a zig-zag appearance of the upper growth, as well as a greater number of auxiliary buds and leaf scorching, leading to early dieback.

In potato crops that have been affected by Zebra chip, there is a reduction in yield and the bacteria is perceived to affect the taste and cut appearance of the potato. The infection also causes a brown discolouration in the potato tuber when it is fried, which can result in rejection of the processing potato crop as the tubers cannot be used for chips.

Extreme threat

TPP and the Zebra chip bacterium were detected on Norfolk Island in April 2014. Quarantine measures are in place that restrict the movement of goods to Australia, which is nearly 1,500 kilometres away. However, the islands are closer to Australia than New Zealand.

TPP is regarded as an extreme biosecurity threat to the Australian potato and vegetable industry, as there is a chance it could be accidentally introduced or blown across the Tasman on wind currents.

Along with border security and quarantine measures, an important way to combat

Tomato-potato psyllid nymphs. Source: Whitney Cranshaw, Colorado State University, Bugwood.org.

Adult Tomato-potato psyllid. Source: Pest and Diseases Image Library, Bugwood.org.

the spread of the psyllid is to use trapping methods. If it is detected on a trap, there is a chance that it can be eradicated quickly. This is just what a group of researchers, industry and growers are intending to do in Australia.

The traps are then collected every 7-10 days, either by field officers or Tasmanian Institute of Agriculture (TIA) staff including Research Fellow Dr Robert Tegg. They are then wrapped in plastic covers and sent off to a lab where they are analysed under a microscope by TIA Entomologist Dr Paul Walker.

Grower reassurance

Over 300 traps from a variety of locations are collected each growing season. All of the various types of psyllid that are found on the trap are identified to make sure they are not TPP.

While thousands of psyllids are detected in the traps each year, no TPP has ever been found in any trap over the five years that the surveillance has been in place. Beneficial insects that are known to prey on TPP, such as brown lacewings, are also counted. In the last growing season, over 1,753 native psyllids were found in the traps and 1,366 beneficial insects were also caught.

By putting out traps in large numbers, this project has provided the potato industry with some certainty that TPP is not yet present in Australia. The efforts of industry, and the support of researchers, has contributed to Australia's biosecurity by providing regular trapping data that supports the claim of continuing freedom from this destructive exotic pest. Funding for the project is expected to continue until mid-2017.

i For more information, please visit utas.edu.au/tia. Any unusual plant pest should be reported immediately to the relevant state or territory agriculture agency through the Exotic Plant Pest Hotline: 1800 084 881.

For further information, contact AUSVEG National Manager – Science and Extension Dr Jessica Lye or AUSVEG Biosecurity Coordinator Callum Fletcher on 03 9882 0277 or jessica.lye@ausveg.com.au or callum.fletcher@ausveg.com.au.

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Horticulture Innovation Australia

Potato growing regions in eastern Australia where yellow sticky traps are being placed to monitor for incursions of Tomato-potato psyllid (*Bactericera cockerelli*). Source: utas.edu.au/tia

Toolangi Elite, Solan and Agronico are the biggest operators of the country's eight accredited mini-tuber producers. Image courtesy of Agronico.

Mini-tuber production: The science behind the process

IN THIS EDITION OF *POTATOES AUSTRALIA*, WE ENTER THE WORLD OF MINI-TUBERS. THREE OF AUSTRALIA'S LEADING MINI-TUBER PRODUCERS OUTLINE HOW THEIR SERVICES WORK AND DISCUSS THE IMPORTANCE OF DEVELOPING DISEASE-FREE MINI-TUBERS FOR THE POTATO INDUSTRY.

Mini-tuber production is a detailed and meticulous process that is the backbone of the Australian potato industry, and there is an intricate science behind the process.

Toolangi Elite, Solan and Agronico are the biggest operators of the country's eight accredited mini-tuber producers. Since 2010, ViCSPA has been running Toolangi Elite in Victoria, which is known to many as the birthplace of potato tissue culture in Australia and where approximately 50 per cent of the country's potatoes start their life.

Solan, owned by Ken Morley and his wife Deborah, is a South Australian business that was established 25 years ago. Mr Morley was a potato grower consultant who quickly discovered the requirement for clean seed in the industry and Solan now holds 35 public and 300 private varieties.

Agronico, established by Julian Shaw in 1985, is a Tasmanian-based agricultural service provider that has developed a mini-tuber production system that uses hydroponics rather than a pot-based system, with much success.

A complex process

Mini-tuber potato production underpins the production of certified seed potatoes in Australia, and ultimately the commercial production of high yielding potato crops. The technology used ensures a constant supply of pathogen-tested mini-tuber stocks can be produced to supply seed producers for further field multiplication. Tissue culture technology is used in other commodities as it enables the rapid build-up of plant material to give commercial volumes of plant material.

Solan Business Manager Liteisha Lochert said that the mini-tuber growth cycle commences in the laboratory, where a potato tissue culture plantlet is cut into multiple pieces and placed into agar (a jelly-like substance obtained from algae) to develop a rooting and shooting system; finally producing a cultured potato plantlet.

"It takes 21 days for that plant to become tall enough so we can repeat the same process on it. That's how we multiply the volume of plants that we require," Ms Lochert said.

"Established plantlets are then transferred from the agar growth medium to seed raising trays to harden off for a further 10 days, after which these plants are planted to larger production pots to grow and develop tubers. After 70 days the plant tops are removed and the tubers harvested.

"It takes another 10 days in the tray and then it goes out into the pot for another 70 days. If you follow one plant through the system, from the day it was first cut, you'd be looking at around 100 days to get that one mini-tuber."

ViCSPA General Manager Dr Nigel Crump said Toolangi Elite's tissue culture collection of both public and private varieties forms the initial stage of the mini-tuber production process.

"We maintain that collection in high health condition – it's all pathogen-tested material, and we have a team of specialist tissue culture technicians who will multiply that up to where it needs to be based on requests and orders. From there, we grow them in our insect-proof polytunnels and we generally do two crops a year. We also supply other laboratories that produce mini-tubers with tissue culture as initial stocks or material for their planting," Dr Crump said.

Potato tissue multiplication. Image courtesy of Solan.

Agronico has been using a hydroponic system since it started its mini-tuber production 20 years ago. Image courtesy of Agronico.

Many new potato varieties are introduced on a trial basis. Image courtesy of Agronico.

"We've had various field days at Toolangi and a lot of growers are surprised about the science and the rigour that's actually involved in the process. It sounds easy, but it's not an easy process to do."

System differences

Agronico has been using a hydroponic system since it started its mini-tuber production 20 years ago. Stewart McKay is involved with mini-tuber sales at Agronico, and he explained the differences in the process.

"We grow the mini-tubers in stainless steel troughs, and we don't have any organic material there other than the potato plants," Mr McKay said.

"We get pretty good multiplication rates … we work on about 15-25 mini-tubers per plant depending on the variety. That means that we can put in less tissue culture plants and get higher yield. We also have the ability to bulk up really quickly.

"In the last 10-12 years, we've gotten to the point where we're producing pretty good material using the hydroponic system. We can fast-track varieties, which is something that is seen as an advantage."

Introducing varieties

To introduce varieties into the system from within Australia, desired plants are selected from breeding programs and, through the process of meristem culture, are introduced to a tissue culture system. This plant material is subjected to rigorous testing and only released once tests for pathogens are negative. This high health tissue culture stock can then be made available for production purposes within the Australian industry.

On the other hand, a set of strict criteria must be met for new varieties to be introduced into Australia.

"Our overseas clients and Australian agents can apply to import new varieties through the Australian Department of Agriculture and Water Resources. This ensures only high health, pathogen-free tissue culture is introduced into Australia. Quarantine tests the tissue culture over several months against an extensive list of pathogens and only release material which has tested negative to these pathogens," Ms Lochert said.

"It can then be released to an accredited tissue culture laboratory to work with that material further. Solan is one of those, along with Toolangi Elite and Agronico. Each of these three accredited laboratories accept new tissue culture that has come into Australia and hold or produce from it on behalf of the international owner or Australian agent."

Mr Morley added that many varieties are introduced on a trial basis, and field testing is conducted to assess its marketability and commercial potential.

"Australia is a signatory to the Plant Breeder's Rights (PBR) Convention. We at Solan are registered to do PBR work, so a lot of that new material comes in to us. We test them, we grow them, we assess them and we report back to the owner and/or importer," he said.

Mr McKay added that Agronico also provides services in the licencing of varieties.

"We do have a fairly secure system in terms of getting seed potatoes to our growers. We hold the cultures, grow the mini-tubers and then we grow those on for multiple generations. That enables us to hold onto the varieties and make sure they're secure," he said. →

Mini-tuber production is a detailed and meticulous process that is the backbone of the Australian potato industry. Image courtesy of Solan.

Many potato growers are surprised about the science and rigour that is involved in mini-tuber production. Image courtesy of Agronico.

Plant Breeder's Rights trial 2016. Image courtesy of Solan.

ViCSPA, as the certification authority, has developed an audit induction process for tissue culture material testing and compliance. Dr Crump added that ViCSPA also maintains a public collection which includes a range of older varieties, such as Toolangi Delight.

"A few years ago, we had a variety called Snowden which was nearly removed from the collection in Australia. The industry changed direction and now it's one of the varieties in the crisping industry. If we didn't maintain those stocks, that variety wouldn't have been available in Australia anymore. It actually gives our industry genetic capability," Dr Crump said.

Maintaining quality

According to Dr Crump, mini-tubers are the foundation of the Australian Seed Certification Scheme. All mini-tuber facilities in Australia are accredited under ViCSPA, which has been heavily involved in the development of Quality Assurance (QA) procedures and performs all audits for the eight laboratories. This ensures all mini-tubers produced from all the accredited tissue culture labs meet the conditions of certification and are eligible to be multiplied in the National Seed Potato Certification system.

Agronico operates both its tissue culture laboratory and the glasshouse facility as a ViCSPA accredited laboratory.

"It's important to make sure that we keep it well-isolated from all of the potential diseases, and keeping all of the insect vectors out of the system. As a part of this process we are required to have every crop visually inspected and sampled for potato viruses," Mr McKay said.

Solan also follows a set of industry guidelines that focuses on maintaining a clean operation.

"Our laboratories are accredited by ViCSPA, audited and inspected. We have state-of-the-art equipment and our technical knowledge is quite high. In addition to the ViCSPA compliance audits, we also have neutral inspectors who come through and inspect the crops once a fortnight because we are quite determined to maintain a clean product," Mr Morley said.

Under the ViCSPA Accreditation Program, Toolangi Elite has an external independent auditor who inspects the crops and performs virus testing as well as visual testing, in accordance with the accreditation program.

"We have operating procedures, a strong internal QA program and we work with leading specialists and experts in both pathogen testing and tissue culture," Dr Crump said.

"The quality of the mini-tubers here in Australia, as far as health and certification goes, is definitely up there with the world's best practice. It wouldn't matter if it's Toolangi Elite, Solan or Agronico – as far as health standards go, we are up there with the world's best."

For more information about mini-tuber production, please visit agronico.com.au, solan.com.au or vicspa.org.au.

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Horticulture Innovation Australia

with Scott Mathew

IN THIS EDITION OF *POTATOES AUSTRALIA*, SYNGENTA TECHNICAL SERVICES LEAD SCOTT MATHEW IS DOING SOMETHING A LITTLE DIFFERENT FOR THE READERS WHO LOVE CHRISTMAS PUDDING AS MUCH AS HE DOES! SCOTT HAS PROVIDED HIS RECIPE FOR A LARGE CHRISTMAS PUDDING.

Ingredients

100g raisins
100g sultanas
100g currants
75g dried pitted dates, chopped
75g mixed peel
2 tsp finely grated orange rind
1/2 cup (125ml) brandy or dry sherry
125g butter, softened
1/3 cup (70g) brown sugar
2 eggs
2 cups (140g) fresh breadcrumbs (made from day-old bread)
1/3 cup (50g) plain flour
2 tsp mixed spice
Plain flour, extra, for cloth
Please note: You will need calico large enough to wrap the pudding in

Orange brandy butter

125g soft butter
3/4 cup (155g) caster sugar
1/3 cup (80ml) brandy or sweet sherry
2 tsp finely grated orange rind

Method

1. Soak the calico in a large bowl overnight.
2. Combine the raisins, sultanas, currants, dates, mixed peel and orange rind in a large glass or ceramic bowl. Place the brandy or sherry in a small saucepan over high heat. Bring to a simmer. Remove from heat and pour over the dried fruit mixture. Stir to combine. Cover with plastic wrap and set aside overnight to soak.
3. Drain the calico well and transfer to a large saucepan of boiling water. Boil for 20 minutes.
4. Meanwhile, use an electric mixer to beat butter and sugar in a small bowl until pale and creamy. Add the eggs, one at a time, beating well between each addition. Add to the fruit mixture with the breadcrumbs, flour and mixed spice. Use a wooden spoon to stir until well combined.
5. Working with one piece of calico at a time, wearing rubber gloves, remove a piece of calico from the water and wring out excess water. Place flat on a clean work surface. Sprinkle with extra flour and use your hands to spread the flour, leaving a 5cm border, to form a thin but complete layer of flour over the calico. Shape one eighth of the pudding mixture into a ball and place in the centre of the prepared calico. Gather the calico together to enclose filling and tie with kitchen string to seal. Use extra string to create a loop. Repeat with remaining calico, extra flour and pudding mixture.
6. Bring a large saucepan of water to the boil. Lower puddings into the boiling water, making sure there is enough liquid so the puddings are not touching the base of the pan. Cook, covered, over medium heat, adding more water when necessary, for 90 minutes. Remove puddings from the water and serve immediately with brandy butter. Alternatively, hang the puddings immediately in a dry place where they are not touching anything. Loop ends of the calico so they don't rest on the pudding which will prevent it from drying properly. Set aside overnight to dry completely.
7. To make the orange brandy butter, use an electric mixer to beat butter and sugar in a medium bowl until pale and creamy. Add brandy and orange rind and beat until well combined. Serve in a bowl, chilled or at room temperature.

Remember, take some time to relax and enjoy the company of family and friends over the festive season. From my family to yours, Merry Christmas and a Happy New Year!

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

Rebirth of Hauser Farms: A family legacy continues

HAUSER FARMS HAS BEEN PRODUCING POTATOES FOR THREE GENERATIONS, WITH PLANS FOR A FOURTH GENERATION FAMILY MEMBER TO TAKE OVER IN THE NEAR FUTURE. OWNER/MANAGER KERRY HAUSER SPEAKS TO MICHELLE DE'LISLE ABOUT THE REJUVENATION OF THE BUSINESS, THE CHALLENGES HE FACES AS A GROWER AND THE PRIDE HE TAKES IN PRODUCING QUALITY, DISEASE-FREE POTATOES.

Kerry Hauser was preparing for retirement seven years ago – the third generation potato and vegetable grower didn't envisage a bright future on the Glenore Grove farm, near Gatton in Queensland.

However, that all changed when his only son Lachlan, 27, made the decision to come back and follow in his father's footsteps in 2009. Now, Hauser Farms is bigger and better than ever.

It also rejuvenated Kerry's enthusiasm for the farm, which primarily grows potatoes along with carrots, beans, pumpkins, lucerne and grain for rotation.

A significant crop

Kerry started working on the farm when he was 15, and has spent 37 years in the potato industry. This long-term commitment to the industry is most likely due to the fact that he didn't envisage doing anything else.

"I've always just wanted to grow potatoes," Kerry says.

As owner/manager of Hauser Farms, Kerry's day-to-day duties vary. He is a self-described "Jack-of-all-trades", and his jobs include planning, harvesting, spraying, irrigating, ground preparation and office work. Prior to this interview, he had spent six weeks on the harvester as the potato season was coming to a close.

It is clear that Kerry's passion for growing potatoes has paid off, particularly after he secured a contract with Snack Brands in the early 2000s.

"Traditionally, we only ever grew fresh market potatoes and I just stumbled upon a contract with Snack Brands 12-15 years ago," he explains.

"That's just grown and grown every year since then, until it got to the stage where we're only ever just processing potatoes now."

On-farm challenges

Hauser Farms wouldn't be as successful without the assistance of backpackers at harvest time. Along with Kerry there are three other workers – two full-time and one part-time – while seven backpackers work

Photography by Rowena Dione Photography.

on the farm during harvest.

The reliance on the seasonal workforce is currently a challenge Kerry faces.

"We do have some reliable backpackers, but that's under threat with the backpacker tax debate – we have to wait until that's sorted out," he says at the time of writing.

"I had a good chat to our backpackers about it, and they check out which country they can make the most (money) in. If they know they're going to be taxed at a really high rate, they will just go to another country.

"I don't know how we would harvest a lot of our crops if we never had the backpackers. In our area around Gatton, there's probably up to 3,000 backpackers in town (during peak harvest periods) and it probably wouldn't drop under 2,000 backpackers a year. If you take a lot of those away, I don't know how potatoes and all the other veggie crops in our valley would get harvested."

In addition to the challenges of sourcing a reliable seasonal workforce, Kerry says that lack of water is another issue facing Hauser Farms.

"Water is back on the agenda at the moment with allocations looming and the lack of water affecting 10 per cent of our farms at the moment. Our water has been right for years but we're starting to struggle on some leased properties we have," he says.

"We just manage some of our other crops and make sure we have water for potatoes every year. If we think we're going to be a little bit short of water, we might drop off another veggie crop that doesn't return as well."

Grower achievement

Challenges aside, Kerry takes pride in working in the potato industry.

"Harvesting a top crop – that's what I love to do, and that's why my job is on the harvester. I love to be out there harvesting a nice, clean, disease-free crop of potatoes," he says.

Kerry nominates the rise of Hauser Farms as his proudest moment as a grower, after doubting its future existence several years ago.

"I probably got to a point seven years ago where I didn't see why I had to grow because I thought, 'Oh well, I'm just going to twiddle along for the next five or six years, sell the farm and I'll retire too,'" he says.

"But then I had a son who wanted to come home to the farm and once he was home, and settled in, I could see that's what he really wanted to do. The growth in the business since he's return to the farm has increased.

"There's nothing better than growing extra crops every year and seeing the rewards from those. It's getting bigger and better and there is newer technology to harvest, grow, pack and plant.

"If we're growing a quality product every year, Snack Brands is happy to see us increase our volume. It's good to build a strong relationship with them so our business can keep growing as they grow."

While Hauser Farms has benefited from the passion and enthusiasm of a young grower entering the business, Kerry admits it's tough to entice the next generation to work in the potato industry.

"That's the million dollar question, and it's a real battle," he says.

"Farming isn't a real easy life; that's why it's hard to get someone who isn't born-and-bred into it to take over the farms around the place at the moment."

Lofty ambitions

Continual growth is all part of the blueprint for the future of Hauser Farms, as Kerry prepares to transition the business to Lachlan.

"We've got the quality of potatoes pretty well where we want it; we just need to keep increasing our volume every year," Kerry says.

"As that increases, you can branch your farm business into other things. I think the sky's probably the limit for someone who's doing the right job at the moment."

In the spotlight: NSW Quality Assurance program for potato seed

CROOKWELL POTATO GROWERS' ASSOCIATION (CPA) OVERSEES AN ESTABLISHED, NATIONALLY ENDORSED QUALITY ASSURANCE (QA) PROGRAM FOR POTATO SEED IN NEW SOUTH WALES. *POTATOES AUSTRALIA* SPOKE TO CPA PRESIDENT MATTHEW GAY ABOUT THE PROGRAM'S HISTORY, ITS OBJECTIVES AND THE CREATION OF THE QA MANUAL – A NECESSARY TOOL IN POTATO SEED CERTIFICATION.

Following a lot of hard work and dedication from its members, Crookwell Potato Growers' Association (CPA) initiated a Quality Assurance (QA) program 12 years ago.

The program, originally open to CPA growers only, is now available to anyone who grows certified seed potatoes within New South Wales. It is designed to prepare and manage a crop of certified seed potatoes by diligently adhering to QA protocol involving seed preparation, paddock identification and insect and disease monitoring, through to grading and packing of pure varietal lines of potatoes. It became nationally endorsed by the Australian Seed Potato Council in 2014.

Program background

Matthew Gay has been the CPA President for the last 10 years, overseeing the development and implementation of CPA's QA Manual in that time.

He explained the reason behind CPA's decision to establish its own seed certification program in New South Wales.

"The main reason was because New South Wales Department of Primary Industries was cutting costs and therefore services. The potato seed certification service was one of the services to be cut. They gave us a time limit and said they would help with a phase in-phase out program to get us established with a different Certification Authority," Mr Gay said.

"We had a couple of options after that, which we looked at, and then we had a special general meeting and it was unanimously decided that we start our own QA program."

All growers participating in the CPA's QA program are operating within the Upper Lachlan Shire, which falls in the State Government's Quarantine Proclamation area. This indicates a disease-free status, including freedom from Potato cyst nematode (PCN).

Grower responsibilities

As part of the program, CPA has formatted a weekly crop inspection where growers look for and monitor insect types and populations.

"If the grower has identified an insect infection in the crop that has the potential to vector disease through the crop or create economic loss of the crop, then a spray program is instigated. The disease status

of a crop is monitored as per the National Standards," Mr Gay said.

"All growers are bound by the QA Manual and its rules and guidelines. The most important part of the program is acting diligently and documenting all procedures that are undertaken.

"Each grower is responsible for their crop and their documentation. All data is delivered to our Resource Centre, where our secretary enters all documentation into a purpose-designed software package enabling updated information to be correlated and cross-referenced for accuracy."

In addition to the crops being checked on a minimum weekly basis, all crops are leaf sampled and laboratory tested for all potato viruses in accordance with the National Standards. Mandatory PCN testing is also conducted pre-sowing.

Traceability is included as a necessary item in the manual. All crop locations are GPS registered, and all varieties and generations are mapped and measured with a GPS.

"This then enables trace-back if there is any problem with the crop," Mr Gay explained.

"Over time this also gives the grower great paddock history for future development. The QA Manual is designed around the National Standards, which are the basis of Potato Seed Certification and very necessary."

A long process

Mr Gay admits that it has been a challenge for CPA to develop the QA program and manual to where it is today.

"We started a bit blind; we didn't really know what we were getting ourselves into. There was a huge amount of dedication from all of the members – the growers and the members had a lot of input," Mr Gay said.

"Our manual was probably two inches thick and over that period of time, after consultation with industry people ranging from growers to departmental staff to our clients and commercial guys, we streamlined that manual down to half of what it was when we originally started. It was a real learning curve over the first six years.

"We had to streamline it so it was user-friendly, yet still covered all the necessary items to ensure that we were growing a very good, clean, certified seed crop of potatoes that was going to transgress to the end grower."

Future plans

CPA is always keeping the future of the program in mind and is still refining it to a certain degree, according to Mr Gay.

"It's so hard to get it right to suit everybody's farming scale. We've got smaller growers who do a lot of nursery orders; we've got large growers who do a lot of bulk tonnage into certain areas. To have a streamlined manual that can cater for small lots as well as bigger lots, and making it user-friendly to fill out and be comprehensive – we're still tweaking that as we go," he said.

That's just one aspect of the program. CPA is still looking at protocols for cold storage and similar items to add to the manual.

"It's still evolving slowly – now we've got most of the nuts and bolts in place but we're still tightening some of the nuts," Mr Gay said.

"I would like to add, as president, how proud I am of our association while the QA manual was being developed, and of the input our grower members had. Nobody stood back; everyone had input and everyone had positive drive towards it. There was no negativity.

"It was tough at times but we all stuck in there and worked to the end project, getting it to where it is: a nationally-endorsed QA manual and we're very proud of it."

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

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Horticulture Innovation Australia

Potato Partners provides growers and rural suppliers access to quality products, new technologies and innovations, all supported by an experienced local technical team.

Refreshed potato program aims to deliver grower benefits

RETURNING FOR ANOTHER YEAR IS POTATO PARTNERS, A PROGRAM THAT ALLOWS POTATO GROWERS AND SUPPLIERS ACCESS TO A WIDE RANGE OF PRODUCTS, INFORMATION AND SUPPORT. THE PROGRAM HAS ADDED A NUMBER OF NEW FEATURES AS WELL AS RURAL SUPPLIER-FOCUSED EXTENSION.

Producing sustainable, premium potatoes is a vital component to every successful potato growing operation.

It is also important to keep updated about the latest products, technologies and innovations, particularly in terms of local and global R&D. This extends to crop establishment, from the growing stage through to post-harvest.

To accommodate growers' needs, Syngenta has launched its potato program, Potato Partners, for the 2016/17 season. It's now open to more potato growers and rural suppliers, with even more exclusive benefits.

Assistance for growers

The program was first launched in 2006 to assist growers in meeting their production challenges and it has evolved over the past decade, continuing to deliver value to growers and industry.

Syngenta Product Lead – Potatoes, Richard Packard, explains the benefits that have resulted from the program's implementation.

"Hundreds of growers have been able to improve their cash flow, productivity and yields, and it has provided a launch pad for a number of innovative products into the industry, such as Ridomil Gold® 480SL, Amistar Top® and Boxer Gold®," Mr Packard said.

The interactive grower program is based on three pillars: products, innovation and support. Access to new technologies and innovations is also offered through technical resources and local expertise.

Program expansion

The new program has incorporated a number of features targeted at growers, including invite-only workshops and training sessions along with individual technical support. Growers can also access a redesigned potato nozzle, which helps to deliver products in an efficient and effective way.

For the first time, a specific rural supplier focus has been developed as an extension to the program. Potato Partners Rewards is an exclusive, invitation-only program for rural suppliers who support potato producers.

"One of the most valuable benefits to being a Rewards member is the ability to participate in new product trials and training on application best practice and new technologies that can help deliver better results for potato growers," Mr Packard said.

Over the next few years, it is expected there will be a number of industry-changing introductions that will come through Syngenta's R&D pipeline, bringing significant benefits to Australian potato growers. By becoming a Potato Partner, growers can gain an exclusive insight into these updates before they are launched to the wider industry.

To become a Potato Partners member or for more information, please visit syngenta.com.au/potatopartners or talk to your local Syngenta representative.

Gaining an insight into Powdery scab suppressive soils

WORK WITHIN THE AUSTRALIAN POTATO RESEARCH PROGRAM SHOWED THAT POWDERY SCAB WAS WIDESPREAD IN PROCESSED POTATO GROWING AREAS AND THAT ONCE SOIL WAS INFECTED, THERE WERE FEW MANAGEMENT OPTIONS AVAILABLE TO MITIGATE ITS IMPACT. IN THIS COLUMN, THE POTATO PROCESSORS ASSOCIATION OF AUSTRALIA (PPAA) LOOKS AT POTENTIAL POWDERY SCAB SUPPRESSIVE SOILS.

Australian potato processors have identified Powdery scab as having the biggest disease impact on potato productivity. Some producers in Tasmania estimate that at least 10-20 per cent of yield is lost to Powdery scab root infection and that's on top of the volume of discarded tubers affected by scab.

In 2013, the Australian Potato Research Program (APRP) estimated the cost of Powdery scab to the processed potato industry at AUD$13.4 million per annum.

It was at a forum in New Zealand that Simplot's Frank Mulcahy encountered work led by Plant & Food Research New Zealand's Peter Wright that showed evidence of what appears to be a Powdery scab suppressive soil.

These soils found in the Pukekohe region of New Zealand appear to suppress disease despite the presence of pathogen inoculum and environmental conditions (cold and wet) that are conducive to the disease. Over 10 years, research site pathogen levels remained very low (with a range of crop rotations including a continuous potato crop).

Even when pot trials were carried out using soil from the various field plots that were inoculated with Powdery scab and planted with a susceptible variety, little disease occurred across all of the rotation treatments. Plant & Food Research scientists speculate that soil biological communities, combined with the soil type, may offer the disease suppression.

Further exploration

Back home in Australia, Dr Tonya Wiechel, working with APRP at the Victorian Department of Economic Development, Jobs, Transport and Resources, showed that a soil from near Ballarat in Victoria was able to suppress Common scab and identified the mechanism for suppression as biological in nature. Dr Wiechel and her team were then able to show that through the use of pot trials, the suppression was able to be transferred to soils that were susceptible.

Although we are a long way off understanding the precise mechanism that these soil biological communities appear to play in suppression, there is some hope that new management options may be developed from this science.

The PPAA instigated and is supporting a Hort Innovation-funded project that aims to explore known suppressive Powdery scab soils and will attempt to identify possible mechanisms of this suppression. The hope is that one day we may have biological control treatment options for Powdery scab, or the possibility of manipulating the soil environment to optimise disease suppression.

For more information, please contact Anne Ramsay on 0400 368 448 or at ppaa.eo@gmail.com.

This communication has been funded by Horticulture Innovation Australia Limited using the National Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

AN UPDATE FROM THE PPAA

The PPAA held its Annual General Meeting in early October, where Peter Hardman was re-elected as Chair in his new capacity as an independent having retired from Simplot at the beginning of August.

With a little more time on his hands, we look forward to Peter's ongoing leadership and advocacy for the potato industry.

CALENDAR REMINDER

By the time you receive this edition of *Potatoes Australia*, you should be well into your fungicide program, especially for Early blight (Target spot) and Late blight.

This is a friendly reminder that whatever chemical you are using, be it a protective or a knockdown, adhere to the recommended intervals between applications. If the label says 7-10 days, don't extend beyond the 10 days as you will have new vegetative growth on the plants within your crop.

Also consider the amount of water you are applying. The more water used, the better the coverage. Rates of 80 to 100 litres per hectare have proven to be less effective than higher rates.

Keep your fungicide program up-to-date and talk with your agronomist or field officer for more advice.

The other major task to consider at this time of the year is crop irrigation. Don't let your crop suffer with lack of water as it will cost you money at the end of the season.

Psyllid nymphs on African boxthorn leaves. Image courtesy of PBCRC.

Improving incursion response using Tomato-potato psyllid as a case study

THE 2016 PLANT BIOSECURITY COOPERATIVE RESEARCH CENTRE (PBCRC) SCIENCE EXCHANGE GAVE RESEARCHERS THE CHANCE TO SHARE THEIR KNOWLEDGE AND DISCUSS THE IMPACT OF THEIR WORK ON END-USERS. THIS YEAR, A JOINT PRESENTATION FOCUSED ON THE TOOLS AND STRATEGIES THE AUSTRALIAN POTATO AND VEGETABLE INDUSTRY COULD IMPLEMENT TO RESPOND TO A PEST INCURSION, SUCH AS TOMATO-POTATO PSYLLID.

AUSVEG National Manager – Science and Extension Dr Jessica Lye joined Plant & Food Research New Zealand scientist Dr Jessica Dohmen-Vereijssen and Agriculture Victoria Chief Plant Health Officer Dr Gabrielle Vivian-Smith to present at the 2016 Plant Biosecurity Cooperative Research Centre (PBCRC) Science Exchange in October.

The trio spoke about the various aspects of their research and the impact it has on growers and the wider vegetable and potato industry. Dr Dohmen-Vereijssen reported on a three-year research project that Plant & Food Research recently completed on the Tomato-potato psyllid (TPP), while Dr Lye's presentation focused on the impact that TPP could have in Australia. Meanwhile, Dr Vivian-Smith gave an insight into the decision-making process that occurs when dealing with emergency responses to a plant pest incursion.

Researching TPP

TPP is a tiny sap-sucking insect that is currently widespread across New Zealand. It vectors the plant-pathogenic bacterium *Candidatus* Liberibacter solanacearum (CLso), which causes Zebra chip disease in potato tubers. This devastating complex also attacks solanaceous crops such as tomatoes, capsicums, tamarillos and eggplant (see page 16 for more information).

Ten years ago, TPP was detected close to Auckland. Two years later, a new-to-science pathogen – CLso – was found in a capsicum crop also close to Auckland. Later in that year, the first Zebra chip disease in potatoes was discovered in the Auckland region.

"After that, the spread over the whole of New Zealand has grown rapidly and basically the psyllid is everywhere – in all the growing regions. I think that potato and tamarillo are probably the worst-affected crops, yield- and quality-wise," Dr Dohmen-Vereijssen said.

Forward planning

Discussions to start a research project on TPP commenced four years ago between Plant & Food Research and PBCRC. The project aimed to increase knowledge on the role of non-crop host plants in the life cycle and ecology of TPP and CLso, with the results to be used for biosecurity preparedness and to develop effective Integrated Pest Management (IPM) programs in Australia and New Zealand.

"If that psyllid comes to Australia, and we have an IPM system in Australia in potatoes, where are the knowledge gaps that need to be addressed in order to keep that IPM system, or to further inform and develop that IPM system?" Dr Dohmen-Vereijssen said.

"One of the gaps that was identified had to do with where the psyllids go when the crop is gone, because some growers think that when the crop is here all of a sudden the psyllids just

AUSVEG National Manager – Science and Extension Dr Jessica Lye.

Plant & Food Research New Zealand scientist Dr Jessica Dohmen-Vereijssen.

appear – but that's not the case. So that's how we decided we would look into the role of these non-crop host plants in the life cycle and ecology of the psyllid and CLso."

Host plant surveys were conducted throughout the year and plant material was tested for CLso. Plant & Food Research performed two years of continuous, weekly sticky-trapping of the psyllid and also focused on the development and feeding of the psyllid on different host plants.

The results showed that host plants of TPP and CLso extend to weed species as well as crop species and that perennial weed species harbour TPP year-round even in areas with frost and snow, which provides challenges for surveillance, eradication and management.

Danger close to home

The potato industry in Australia is worth $480 million per year, and AUSVEG represents about 2,000 potato growers. Given the devastating effect of TPP on our Trans-Tasman neighbours, it is considered a high priority pest for the Australian industry.

"If you look at the industry plan for biosecurity in potatoes, it lists our top eight priority pest threats. The bacterium CLso, which is vectored by TPP, has been found to have a high establishment potential, a high spread potential, an extreme economic impact and an overall risk grading of extreme," Dr Lye told the audience.

"If TPP and CLso were to find its way over to Australia, we have an environment that would be quite hospitable to it, a nice climate and also a wide host range – we have about 20 host commodities here which TPP could potentially use as hosts and that's not to mention some of the non-host commodities and weed species and plant species on which it can feed and breed."

A high price

The potential cost to the Australian industry from the arrival of such a damaging pest can be quite extreme. Costs range from eradication to management – and there's an economic cost for growers and the industry as a whole, according to Dr Lye.

"Any deed that is focused on preparedness for incursion response and can lead to more effective incursion response – which will lead to a limited time the growers must be in quarantine and the effective control of any emergency plant pest – is a good thing for our industry," Dr Lye said.

"Australia also faces the possibility of trade barriers, both domestic and international, and if the priority pest cannot be eradicated, then we face an increased management cost over a course of time which can be quite substantial for industry."

Responding to an incursion

As Agriculture Victoria Chief Plant Health Officer, Dr Vivian-Smith's role involves response planning, providing strategical direction and tactical advice to state and local control centres in an emergency plant pest response. Dr Vivian-Smith and her fellow Chief Plant Health Managers also sit on the Consultative Committee on Emergency Plant Pests, which is a technical group that formulates advice for decision makers.

"That advice is then provided to the National Management Group, which consists of the CEOs of all the government agencies responsible for biosecurity and the industry parties that are affected that have signed up to the Emergency Plant Pest Response Deed," Dr Vivian-Smith said.

"The Consultative Committee also needs to deal with uncertainty and incomplete information when considering newly detected pests. When we look at whether something is technically feasible to eradicate or not, we have to consider a large range of factors, most of which need science to underpin them.

"Not only do we need that scientific knowledge and information, we need evidence as well – so there needs to be data and analysis. When you're dealing with many different incursions or possible pests to consider, we need to be able to do it very quickly and effectively."

For information, please visit pbcrc.com.au/science-exchange-2016/program.

Any unusual plant pest should be reported immediately to the relevant state or territory agriculture agency through the Exotic Plant Pest Hotline: 1800 084 881. For further information, contact AUSVEG National Manager – Science and Extension Dr Jessica Lye on 03 9882 0277 or jessica.lye@ausveg.com.au.

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

Golden nematode cysts.

Fight against Golden nematode intensifies in U.S.

CORNELL UNIVERSITY IN THE UNITED STATES RECENTLY RECEIVED A MILLION-DOLLAR FUNDING GRANT TO ASSIST ITS RESEARCH INTO THE DESTRUCTIVE GOLDEN NEMATODE. LEADING THE CHARGE IS CORNELL UNIVERSITY ASSOCIATE PROFESSOR DR WALTER DE JONG, WHO SPOKE TO *POTATOES AUSTRALIA* ABOUT THE POTATO PEST, THE THREAT IT POSES TO GROWERS AND HOW IT IS BEING CONTROLLED.

New York's Cornell University has received a USD$1.2 million boost as it ramps up its battle against a major potato pest.

First detected in 1941, Golden nematode is only present in New York State – in fields on Long Island and in upstate New York. It is currently quarantined to eight counties. Cornell University, the US Department of Agriculture's (USDA) Animal and Plant Health Inspection Service and Agricultural Research Service, in addition to the New York Department of Agriculture and Markets have managed to contain the pest to about 6,000 acres.

Dr Walter De Jong, Associate Professor in Plant Breeding and Genetics at Cornell University, is involved in breeding Golden nematode resistant varieties of potato. Dr De Jong explained what work is being undertaken at the Federal Golden Nematode Lab at the university.

"Golden nematode research at Cornell has two components: basic research into Golden nematode, conducted by USDA scientist Dr Xiaohong Wang, and breeding Golden nematode resistant varieties, which is done by me," he said.

"The two intersect in that Dr Wang's lab tests potatoes from my breeding program to determine which are resistant. "For the past few decades, almost every potato variety Cornell has released has been Golden nematode resistant. It's a high priority trait for us."

Cornell's Federal Golden Nematode Lab is the only research program in the US with expertise in the biology, resistance breeding and management of Potato cyst nematodes.

The state funding grant, announced on 14 October 2016, will be used to repurpose an existing lab to make it suitable for Golden nematode research.

Control strategies

Dr De Jong said the spread of Golden nematode in New York has been negligible for many decades.

"This is largely because so much effort is put into controlling it," he said.

"There are two aspects of control: growers with infested land are required to grow resistant varieties (if they want to grow potatoes), and the Federal Government washes (at no cost to the grower) all equipment leaving infested fields. The Federal Government also takes soil samples from many fields each year to make sure no new spread has occurred."

Meanwhile Dr Wang is working to understand, at a molecular level, how Golden nematode attacks potatoes.

"If you understand how Golden nematode works, you might be able to develop novel control strategies," Dr De Jong said.

"One thing Dr Wang has found is that Golden nematode secretes a peptide hormone, very similar to one that plants use in their own development, to trick potato into acting as a host."

Major potato threat

Golden nematode is so destructive that high levels of infestation can result in 100 per cent yield loss. The microscopic worm attacks the roots of potatoes and other crops.

"Golden nematode cysts (and the eggs they harbour) can survive in the soil for 20 to 30 years. Some nematicides can knock population levels down a bit, but they soon bounce back," Dr De Jong said.

"In New York, where nematicides have contaminated groundwater in the past, the strong preference is to use resistant potato varieties for Golden nematode control.

"Containment is the critical issue. If Golden nematode is not controlled, the entire US potato crop is at risk. In addition, if our trading partners perceive that it is not being controlled, exports of any crop associated with soil will be halted."

There could be benefits for Australian potato growers as a result of the research conducted at the Federal Golden Nematode Lab, according to Dr De Jong.

"In the short-term, the impact is most likely to happen if you find that any of our resistant potato varieties grow well in Australia (for example, the crisping varieties Lamoka or Waneta).

"However, in the long-term, it all depends on what Dr Wang discovers. The impact of basic research is hard to predict," he said.

For more information, please contact Walter De Jong at wsd2@cornell.edu.

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

Easing market conditions set to benefit potato growers

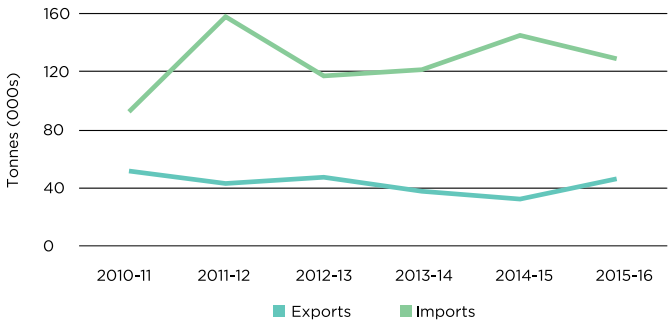
THE IMPACTS OF THE LOWER AUD AND USD EXCHANGE RATE ARE BECOMING EVIDENT IN OFFICIAL POTATO TRADE FIGURES, WITH IMPORTS DECLINING BY 10 PER CENT AND EXPORTS REBOUNDING SOLIDLY BY OVER 40 PER CENT IN 2015-16. POTATO EXPORTS ARE NOW BACK TO AROUND THE LEVEL WITNESSED IN THE EARLY 2010s, AS *POTATOES AUSTRALIA* REPORTS.

The Australian dollar has been trading at around 75 US cents for much of the past year. This has resulted in imports of potato products falling by 10.5 per cent to around 129,000 tonnes in the year ending June 2016, following two years of strong growth.

On the other hand, exports of potato products including fresh (which account for just under half of total potato exports) have bounced back solidly, growing by 43.6 per cent to just under 50,000 tonnes in 2015-16.

A lower dollar means importers are paying relatively more in Australian dollars on world markets for a smaller tonnage. The total value of potato products imported has increased slightly in 2015-16 to around $156 million from $153 million the previous year. The value of all potato exports, however, has not seen the expected gains in Australian dollar terms, rising only around 25 per cent in 2015-16 to around $39 million. This suggests there are rigidities and/or asymmetries in the markets that are worth investigating.

AUSTRALIAN POTATO TRADE



Source: ABARES, Agricultural Commodities, Cat. No. 2015.03.

Growing confidence

The Australian economy grew at a moderate rate in the year to June 2016 despite the uncertainty on global markets. Sources of growth in the first quarter on the 2016-17 financial year were looking elusive at the time of writing. The official outlook, however, remains reasonable.

The non-mining sectors are expected to grow a little above trend over the next year, supported by the low interest rates set by the Reserve Bank of Australia. Following a sustained period where the AUD/US exchange rate favoured imports over exports, the local dollar is returning to what could be considered fair value. Moves by US authorities to begin lifting interest rates over the next 12 months should reinforce this effect.

Combined with slight declines in domestic production over the past few years and a solid pick up in exports, the decline in imports may exacerbate an already tight domestic supply situation, with local growers to experience potential benefits in terms of market prices into 2017.

Market push

The rapid growth and urbanisation of Asia presents unique opportunities for our horticultural enterprises. China, for instance, is quickly moving to increase potato consumption and position the potato as its fourth grain, providing opportunities for exporters to supply into China during fluctuations in Chinese cropping seasons and when output is affected by local conditions.

While these opportunities may have been more difficult with the Australian dollar trading stubbornly high over the past few years, the end of the mining commodities boom has rebalanced the economy and our more traditional agricultural (and horticultural) businesses are again well placed to push further into these vast markets, with populations hungry for the quality produce that Australia is renowned for.

Growers who persisted with their export focus, and those who are about to, should find market conditions easing in their favour over the coming year. On the other side, domestic processors that imported potato products on the back of the high dollar will see their import costs rise and domestic suppliers become a more attractive option in the coming year.

For more information, please contact AUSVEG.
Phone: 03 9882 0277
Email: info@ausveg.com.au

This communication has been funded by Horticulture Innovation Australia Limited using the Fresh Potato Levy and funds from the Australian Government.

Project Number: PT15007

Horticulture Innovation Australia

Regional updates

South Australia

AUSVEG SA is asking South Australian vegetable and potato growers to join us in the fight for water resources and a future for production on the Northern Adelaide Plains as part of our campaign to save South Australia's Food Bowl.

AUSVEG SA is coordinating a campaign on behalf of South Australian growers against an SA Water Plan to allocate an excess 20GL of waste water they have available on the Northern Adelaide Plains to a Spanish consortium instead of local growers. If the SA Government backs our growers with water, we will create the jobs and investment necessary to sustain Adelaide's north.

The background to this issue is that SA Water held a tender for the excess allocation and industry had thought that local businesses would get access to the water. AUSVEG SA understands from media reports that the Spanish consortium intends to use the entire 20GL allocation, which would likely be used to build around 1,000ha of greenhouses.

The consortium and State Government are claiming that any excess production will be solely for export, but this is highly unlikely due to the fact more than 1,000ha of production would represent over $300 million of additional produce each year and the export market for greenhouse crops is currently limited.

AUSVEG SA sees this as an issue arising from insufficient industry consultation in the initial tender process, and calls on SA Water to significantly revise the proposal. That way we can move on and conduct a feasibility study into a project which will create jobs without significant costs and loss of jobs for incumbent businesses that need the water.

The problems for our industry are that under this proposal:

- Growers in the Northern Adelaide Plains are in desperate need of water now. Industry group AUSVEG SA has conducted investigations showing local growers could take up over 5GL of water, create over $130 million in production and create over 500 jobs. This will grow further as more growers record their water needs with AUSVEG SA.
- This project represents a significant opportunity lost as businesses in the region won't be able to sustainably grow employment. Growers currently do not have sufficient water, which is inhibiting their expansion and ability to compete against other growing regions throughout Australia.
- Rather than create net employment increases, the consortium is likely to offset any job increases with losses to employment in the Virginia region due to a glut of produce in domestic markets. If growers don't get the water they need, the region will stagnate and suffer production and job losses.

In response to this issue, AUSVEG SA has launched a campaign to fight the announcement, but needs all the growers of SA to help us send a clear message to the State Government to go back to the drawing board on this proposal.

AUSVEG SA has made numerous representations to state and federal politicians on this issue and is now fighting for the future of impacted growers through the media.

Affected growers and community members are encouraged to make their own representations on this issue to state and federal politicians to ensure industry's concerns are heard and push for the current destructive proposal to be significantly revised.

Join us to Save Adelaide's Food Bowl and keep jobs and growth in Adelaide's North!

Jordan Brooke-Barnett
AUSVEG SA
State Manager
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Victoria

While the 2018 Victorian state election may be two years away, AUSVEG VIC has already been approached by a number of parliamentarians regarding policy priorities for the vegetable and potato industries.

AUSVEG VIC would like to hear from you regarding any infrastructure project or policy change that you believe would benefit the industry.

This is essential to ensuring that the industry's needs are taken into consideration as both major parties formulate their policy platforms in the lead-up to the state election.

AUSVEG VIC will be consulting with growers over the next couple of months with the aim of beginning lobbying efforts in early- to mid-2017.

In other news, AUSVEG VIC held its Annual General Meeting on Friday 28 October 2016. Eight growers were elected to the AUSVEG VIC Executive Committee. They were as follows:

- David Wallace.
- Paul Gazzola.
- Rocky Lamattina.
- Vince Doria.
- Bill Bulmer.
- Peter Cochrane.
- Deborah Corrigan.
- Frank Lamattina.
- Rick Butler.
- Sam Taranto.

I would like to congratulate David Wallace on his re-election as AUSVEG VIC President and Paul Gazzola on his re-election as AUSVEG VIC Vice President.

Lastly, AUSVEG VIC was present for the launch of the Victorian Inquiry into the Labour Hire Industry and Insecure Work report in October 2016. The report contained 35 recommendations, including the establishment of a licencing regime to better regulate the labour hire industry.

The State Government has since committed to implementing this recommendation and significant penalties will exist for any business found to be using unlicensed labour hire firms. AUSVEG VIC will review the detail of this proposed legislation once released and will update growers as further information comes to light.

If you would like any further information on any of the above topics, or would like to contribute policy ideas in advance of the 2018 election, please contact AUSVEG VIC State Manager Kurt Hermann on 0437 037 613 or at kurt.hermann@ausvegvic.com.au.

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Victoria - seed

As we launch into a new season and do what we've always done, it's the perfect time to stand back and try to get a clear picture of where our seed industry fits into the scheme of things. Planting is well underway in most districts and most growers will be optimistic about the prospects for the year. That is their nature. A closer look reveals an industry under pressure for a range of reasons, and the evidence is in the steady decline in grower numbers.

In October, SPV arranged a forum to gain a better understanding of problems and opportunities. It included a cross-section of seed customers, seed growers and representatives from ViCSPA and McCain Foods. The aim was to identify areas where expectations were not being met on either part and to focus on what needs to be done to improve the situation.

It was clear that the downward pressure on prices for both fresh and processed potatoes was having probably the greatest effect on the ability of seed customers to pay what the seed growers thought reasonable. Issues including physiological age, grading standards and general seed quality were raised as ongoing considerations in seed production.

The good news is that most of the problems can be addressed by better connection with customers: a realisation that in a tough sales environment, it will be the supplier who can best take advantage of technology and resources to produce the consistent quality required who will remain viable. Good quality certified seed will remain the foundation of the potato industry and growers will be rewarded. The trick will be to have a clear business plan and an eagle-eye on costs and viability with close communication with customers.

It is likely that SPV will follow-up this successful forum with another session to help growers to improve their business and become that future seed grower.

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New South Wales

The wettest winter on record in Crookwell is now behind us and most paddocks for next season are in fallow, with planting very close at the time of writing this update.

It is quite remarkable how things have dried out in our area in the last few weeks. Most growers would welcome a shower or two. I myself am waiting in anticipation for the first storm activity.

From past experience, if you are under the first storm in spring, then chances are very high that your farm will be under most storms through to summer. We don't depend on them though and our irrigation system is ready to go. Our last decent frost was still in November so things are slow-growing.

Each season is different and sometimes you need more than experience to get your crop through. Gut feelings can be a huge benefit when Mother Nature is in a mood. Delaying planting by one week can mean the difference between a good crop and a great crop. More often than not, we seem to be behind and generally rushing to get our crops planted.

So with a new fresh zest to get our potato crop in, things are still looking good for a great 2017 crop. Orders are coming in with some guys making sure they don't miss out on seed as some did this year.

All growers in Crookwell will be busy probably up to Christmas. Hopefully they then have a little breather and before we know it, will be back digging again. It is also hoped harvesting will be a lot easier than it was last winter.

Matthew Gay
Crookwell Potato Growers' Association
President
169 Goulburn Street
Crookwell, NSW 2583
Phone: 02 4832 1800
Website: seedpotatoes.com.au

CALENDAR

4-6 January 2017
Potato Expo

Where: San Francisco, California

What: The premier conference and trade show for the potato industry is coming to San Francisco. Potato Expo 2017 features networking events with key decision makers and international industry leaders, plus the latest practical business solutions and innovations.

Further information: potato-expo.com.

15-17 May 2017
Hort Connections

Where: Adelaide Convention Centre, South Australia

What: A joint initiative between AUSVEG and PMA Australia-New Zealand Limited (PMA A-NZ), Hort Connections will deliver a world-class program and trade show to growers and whole-of-supply-chain companies. The event will be co-hosted by Australian Organic, Onions Australia and Irrigation Australia.

Further information: hortconnections.com.au.

Stu Jennings

G'day again,

Well the weather is finally warming up in the southern parts of Australia after a very wet start to spring. It seemed that just as the grass and spuds started to grow, the weather decided that winter wasn't quite long enough and we were blessed with more rain and cold weather – even snow fell in alpine areas.

It was that wet, that for a while I thought I might need to get the old boat out of the shed to be able to check the farm, and in some parts of the country that was the case! Having a helicopter might have been more useful and maybe this is why drones are gaining popularity on farms due to the fact that they can perform many of the functions of a helicopter at a much lower cost.

Embracing technology

Drones are in play on many farm enterprises for all kinds of uses including mapping of fields, application of crop protection products and distribution of live beneficial insects. When equipped with the right camera, drones can be used to quickly assess crop performance, giving a bird's-eye view of any areas that are underperforming, areas where irrigation is not meeting the crop's needs or hot spots where nematodes, weeds, insects or disease are creating an issue. Pretty cool when you consider that they can save driving around in the mud and show you things that you won't ordinarily pick up from the cab of the tractor when you are focused on other things.

Technology has become a part of everyday life on the farm and as Young Potato People, hopefully we are embracing these tools. We've seen the development of a number of apps designed to help out with managing the business of growing crops and some of these are quite useful, simplifying some of our daily tasks.

The secret to the success of these and other technological improvements is that they must be simple to use and they must save time, not take time away. Anything that creates more work or confusion will most likely be bumped. Like any tool in your tool box, if it is not easy to use, you just won't use it.

Product labelling

It's great to see some crop protection companies including a QR code on their product label, taking you directly to all the resources associated with that product. I see the next step could be adopting this technology to capture the information from the product label, combining it seamlessly into a spray record which has automatically captured the time, date, weather conditions and location so that all that is left to do is confirm the rate you are using and a spray record is created and emailed to your files.

With all the reporting we have to do on farm these days, an app like this could come in very handy. Keep an eye out for apps that might suit you. I'll do the same and share my thoughts with you on any good or not-so-good ones in future YPP Facebook posts.

A big thank you to Luke Collins from Adama, who has been behind the scenes of this article and the YPP page concept since it began. We have collaborated for a few years now to hopefully bring a little zing with competitions and articles. I have really appreciated Luke's support of our YPP community, and I know many others have too. Luke is taking an extended break to spend time with his family and enjoy life for a while – lucky bugger. Thanks for all your help, mate. It's been fun.

Make sure the rest of you stop and spend time with your loved ones too. Merry Christmas one and all. I look forward to being in touch again in the New Year.

Stu

@youngpotatopeps

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facebook.com/groups/youngpotatopeople/

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For more information, contact:

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