

potatoes

australia

June/July 2016

Xavier Toohey

Young grower

The Front Line

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Seed potato certification

Continuous improvement



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Contents

June/July 2016

Regulars

5 Chairman & Interim CEO messages

7 Editorial

Features

20 Township leaves behind legacy of golden years

26 Young grower profile: Xavier Toohey

32 12 useful apps for potato growers

Industry update

28 Ask the industry

31 Making on-farm data transfer easier

36 Regional updates

38 Young Potato People

R&D

8 The National Potato Levy at work

10 Seed potato certification in Australia:
Continuous improvement

12 Analysing the impact of international trade on the
Australian potato industry

14 A new discovery in the fight against Late blight

16 Potato pest update: Root-knot nematode

18 Disease update on Soft rot in potatoes

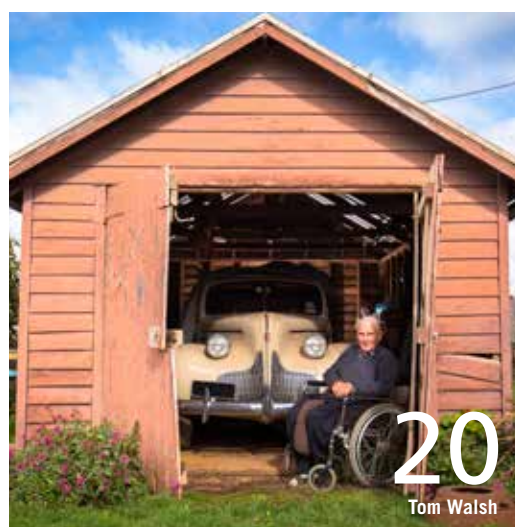
22 The Front Line: Using parasitoids to attack aphids in
potato crops

24 Breeding a new generation of potatoes

29 Managing blemish problems in fresh market potatoes

30 The best defence: Potato plants boost aboveground
defences during tuber attacks

34 Improving potato yield and production efficiency
with spatial variability



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AUSVEG Chairman and Interim CEO messages



Geoff Moar

AUSVEG Chairman

The Australian potato industry is facing challenging times, following the announcement that the nation's largest potato supplier entered voluntary administration in early May.

Oakville Produce is a dominant force in the Australian potato industry, supplying about three quarters of all potatoes sold in Woolworths supermarkets and having almost a quarter share of the entire fresh potato market in Australia.

Following reports from growers affected by the issue that they are now owed hundreds of thousands of dollars, AUSVEG is calling for support from the Australian Competition and Consumer Commission, the Australian Securities and Investments Commission and receiver and manager Deloitte to ensure that growers' debts are considered a high priority in the creditor repayment process.

AUSVEG is also calling for further scrutiny of potential buyers who are looking to take ownership of Oakville to ensure that they have a long-term plan for the ongoing success of the company, and that they understand the trading environment of the Australian potato industry and the market forces at play. We will continue to monitor the situation closely in coming months.

In more positive news, AUSVEG was pleased that processor Simplot has agreed to pay its Tasmanian potato suppliers five per cent more in a deal that will be phased in over the next three years. Due to adverse conditions in the state, Simplot has also offered a supplementary payment for the current harvest before the new contract comes into effect in time for the next planting in spring.

As a potato grower myself, I

know only too well the myriad challenges facing our industry on a regular basis. This agreement will help to stabilise the processing potato industry in Tasmania and it will certainly bring a period of relief to the hard-working potato growers in the state.

The arrival of winter also brings with it the highly-anticipated National Horticulture Convention, which will be held from 23-25 June at RACV Royal Pines on the Gold Coast. Australian Organic and Onions Australia are the latest industry groups to co-host the event alongside AUSVEG, Apple and Pear Australia Limited, the Central Markets Association of Australia in partnership with Fresh Markets Australia, Growcom and Persimmons Australia Inc, and we look forward to welcoming delegates from an even wider range of horticulture industries to the event.

Geoff Moar
Chairman
AUSVEG



Simon Bolles

AUSVEG Interim CEO

I would like to introduce myself as the Interim Chief Executive of AUSVEG following the retirement of Richard Mulcahy. The AUSVEG Board accepted Mr Mulcahy's decision on 23 May and we wish him well in his retirement.

For those readers who do not know me, I was appointed to the AUSVEG Board as a Skills-Based Director in 2013 and have a 30-year career in the financial services sector, as well as being an experienced Board Member. In particular, I have direct, research and advisory experience of numerous industries, particularly in the fields of agribusiness, superannuation/investments and infrastructure.

We are currently conducting a thorough search for Mr Mulcahy's replacement and, during this time, Australian potato growers can rest assured that it is business as usual for AUSVEG as we continue to best represent the interests of Australia's hard-working vegetable and potato growers.

In exciting news for the future of this organisation, AUSVEG is pleased to announce that it has joined the Voice of Horticulture to ensure the industry has a strong, united voice moving into the future. Alongside representatives of growers and businesses across fruit, nuts, mushrooms, turf, nursery and cut flowers, AUSVEG's partnership with the Voice of Horticulture will ensure that the industry's supply chain is represented under one banner.

This unified representation of the Australian horticulture industry is particularly important, given that the Voice of Horticulture will now effectively represent almost all horticulture commodities and ensure research and

development, extension and marketing outcomes are effectively communicated to industry.

AUSVEG is looking forward to working closely with the Voice of Horticulture's member organisations to ensure growers, Horticulture Innovation Australia and key stakeholders can effectively communicate with each other and, most importantly, ensure grower issues are heard and better understood.

On a final note, I am very much looking forward to again attending the National Horticulture Convention and meeting both our industry members as well as delegates from the vast array of industries that have joined as co-hosts. Given that delegate registrations are approximately 15 per cent higher than last year, I have every confidence that the 2016 National Horticulture Convention is set to become the most successful event in the history of Australian horticulture.

Simon Bolles
Interim Chief Executive Officer
AUSVEG

AUSVEG Chairman

Geoff Moar

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ausveg.com.au

twitter.com/ausveg

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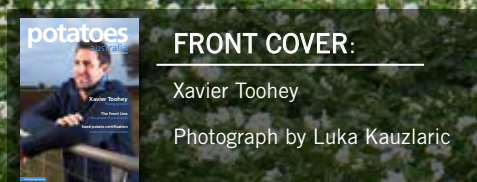
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Send us your story ideas!

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, let us know! Email info@ausveg.com.au or call 03 9882 0277.

Welcome to the June/July edition of *Potatoes Australia*, which features a range of interesting reports on local and international potato R&D as well as profiles on dedicated growers who have contributed to the industry.

There are promising developments in R&D for the seed potato industry, after Horticulture Innovation Australia Limited commissioned two complementary projects on potato seed certification. They are designed to build on the strengths of current arrangements and benefit all with a stake in the industry. We provide an update on these two important projects on page 10.

We also share the results from another project funded by the National Potato Levies, which looked at using spatial variability in potato cropping to improve yield and production efficiency (page 34).

In the biosecurity space, our *Front Line* column delves into the world of parasitoids, and how these beneficial insects can

be used as a helpful weapon against three common types of aphids found in potato crops (page 22).

This edition also provides a review of the research that has been conducted on Root-knot nematodes (page 16) and Soft rot (page 18), which can help growers in their approach to the detection and management of these issues.

Also, recently published statistics that show a fall in both the production and value of fresh and processing potatoes in Australia have led *Potatoes Australia* to provide an analysis of the current import and export statistics of potato produce and their effect on the domestic industry (page 12).

Looking to international R&D, we also report on a preliminary study to investigate options for blemish management in fresh market potatoes (page 29) and report on the latest advancements in the potato breeding program at Cornell University in the United States, including the need to develop



resistance to Potato virus Y (page 24).

Our two grower profiles this edition are both based in Victoria. Firstly, 89-year-old Tom Walsh takes us for a trip down memory lane as he reminisces about how the tight-knit potato growing community of Trentham has evolved over the years (page 20). Meanwhile, the young grower who graces our cover is Xavier Toohey from Wallace, who explains the challenges of starting his own potato growing operation and the opportunities that exist for

growers to export their produce (page 26).

As smartphone technology increasingly makes its way onto the farm, we also provide an overview of 12 useful apps that can assist potato growers (from identifying pests and diseases to planning for the weather) on page 32.

Finally, our editorial team will be at the National Horticulture Convention at RACV Royal Pines from 23-25 June, where it will be great to catch up with our loyal readers. We hope to see you there!

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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.

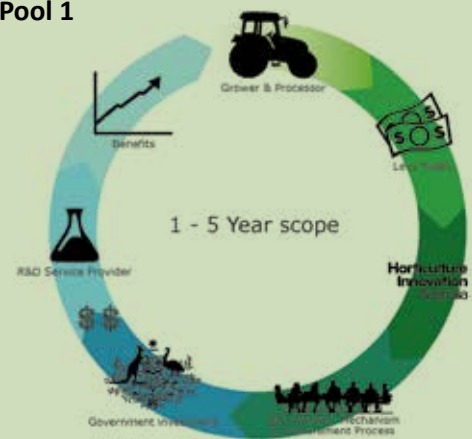
Pool 1 is funded by grower levies with contributions from the Federal Government. This pool has a **one to five year scope** and will invest in applied R&D designed to directly benefit growers. This includes pest and disease management and biosecurity matters, with findings communicated through a variety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

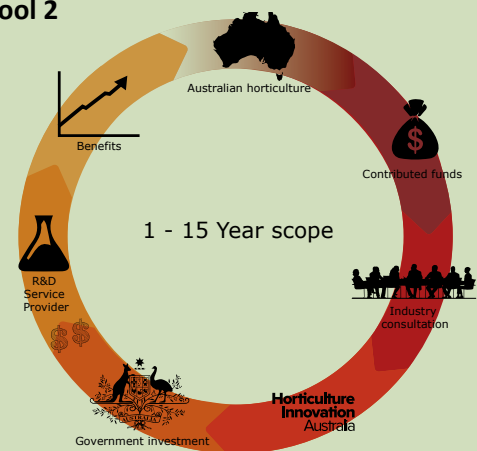
Five 'Foundation Funds' have so far been established in Pool 2 and will work with an expert panel to direct strategic projects. They are:

- **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.

2016 NATIONAL HORTICULTURE CONVENTION

SOCIAL EVENTS!

23-26 June, Gold Coast

Delegates who have registered for the 2016 National Horticulture Convention can attend the exciting social events that are on offer. For more information, please contact AUSVEG on 03 9882 0277 or visit the registration desk. Numbers are strictly limited so be sure to get in quickly to avoid missing out!

NEXT GEN - FREE FALL



Saturday 25 June
2pm-5pm
iFLY Gold Coast

A highlight of the social program, the NextGen Young Grower event is open to full delegates under the age of 35. This year's event will get your adrenaline pumping with indoor skydiving on Saturday afternoon.

WOMEN IN HORTICULTURE



Saturday 25 June
2.30pm-4.30pm
Palazzo Versace

Landline host Pip Courtney, Liberal MP Dr Sharman Stone and a grower panel of speakers will lead the discussion on the unlimited potential of women in horticulture. [Buses will depart RACV Royal Pines at 2pm.](#)

GOLF DAY



Sunday 26 June
8.15am-3.30pm
RACV Royal Pines Golf Course

This event will be the perfect way to unwind after the 2016 National Horticulture Convention on the picturesque Royal Pines Course. With club hire available from the clubhouse, it promises to be a great day of relaxation and socialising with fellow delegates.

HORTICULTURE FIELD DAY



Sunday 26 June
8.15am-3.30pm
Kalbar Region

The 2016 National Horticulture Convention will conclude with the Horticulture Field Day. This year the field day is a celebration of innovation and adaptation in horticulture. [Buses will depart RACV Royal Pines at 8.30am.](#)



Seed potato certification in Australia: Continuous improvement

THE NATIONAL STANDARD FOR CERTIFICATION OF AUSTRALIAN SEED POTATOES IS CURRENTLY UNDERGOING AN UPDATE TO INCORPORATE NEW KNOWLEDGE. AT THE SAME TIME, GOVERNANCE ARRANGEMENTS ARE BEING REVIEWED TO ENSURE A ROBUST SYSTEM FOR THE FUTURE OF THE AUSTRALIAN SEED POTATO INDUSTRY.

Horticulture Innovation Australia Limited (Hort Innovation) recently commissioned two projects to achieve the objectives of a modernised standard and governance system for the Australian seed potato industry.

The work of both projects builds on the strengths of current arrangements and will benefit all with a stake in the industry from tissue culture/mini-tuber production to trade. The project teams have been consulting with industry and key stakeholders over the past three months.

Project PT15004

Project PT15004 is conducting the technical review and update of the current National Standard for Certification of Australian Seed Potatoes. A team led by Russell Pattinson is undertaking this project in close cooperation with the Australian Seed Potato Council.

The team has examined national, state and international standards and conducted a number of consultations with growers, buyers, processors, certifiers, mini-tuber producers and regulators.

A standalone website was created and widely publicised to allow any interested party the opportunity to make a submission to the review.

From these submissions and consultations, the team put together a summary of issues to be further considered by industry.

Project PT15005

Project PT15005 is looking at governance arrangements across the Australian certification system to ensure they continue to meet the needs of regulatory authorities and all industry participants into the future.

“The majority of people interviewed said that the current arrangements are working well,” PT15005 Project Leader Donna Lucas said.

“There are some opportunities to clarify and fine-tune certain aspects to better grasp future opportunities.”

The team has also investigated governance arrangements for seed potato certification systems overseas, several of which have undergone or are undergoing similar updates.

“This is to ensure that we are at least equal to the best,” Ms Lucas said.

Industry workshop

Hort Innovation hosted a meeting of the Australian potato industry in Melbourne on 2 June for further consultation on these two investments and to seek feedback on preliminary findings.

The meeting identified some key principles for the National Standard and then discussed the key technical issues identified and provided valuable feedback. From this presentation and discussion, a revised draft National Standard

will be produced for circulation to industry for further comment and finalisation.

The second half of the day considered options for the national seed potato governance framework. Industry representatives worked in groups and independently came up with systems with a high degree of similarity that build on existing arrangements. These will now be worked into an options paper for the future framework, including any funding requirements.

Both projects will be completed by mid to late 2016. At the completion of the two projects, Australia will be able to further enhance its national seed potato certification system.



Interested parties can contact Donna Lucas at donnal@rmcg.com.au (governance options), Russell Pattinson at miracladog@bigpond.com (update of the National Standard) or Anthony Kachenko, the Horticulture Innovation Australia Project Manager via anthony.kachenko@horticulture.com.au.

These projects are funded by Horticulture Innovation Australia Limited using the Fresh and Processing Potato Levies and funds from the Australian Government.

Project Numbers: PT15004 and PT15005

A regular update on seed certification in the Australian potato industry will feature in future editions of *Potatoes Australia*. Readers are welcome to submit their story ideas.



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Analysing the impact of international trade on the Australian potato industry

A FALL IN BOTH THE PRODUCTION AND VALUE OF FRESH AND PROCESSING POTATOES IN AUSTRALIA IS A MAJOR CONCERN FOR GROWERS AND THE WIDER INDUSTRY. IN AN ONGOING SERIES OF ARTICLES FOR *POTATOES AUSTRALIA*, WE WILL ANALYSE THE CURRENT IMPORT AND EXPORT STATISTICS OF POTATO PRODUCE AND THEIR EFFECT ON THE DOMESTIC INDUSTRY.

Recently published figures from the Australian Bureau of Statistics show that the value of the Australian potato industry has fallen by \$72 million (10.47 per cent) since 2012-13. The reason for this industry contraction is a fall in the production of both fresh and processing potatoes by 118,740 tonnes (9.33 per cent) during the same period. The question is, why has production fallen by such a large amount since 2012-13?

A possible explanation can be seen within Table 1 (below). Total imports of potato produce into Australia has risen by \$36.38 million (36.77 per cent) over the period 2012-13 to 2014-15. As a result, it is highly likely that this influx of foreign potato imports has had an

adverse effect on our domestic potato industry since 2012-13.

Understanding international trade

This article is the first in an ongoing series that will highlight the importance of international trade to the domestic potato market. It will seek to present the most up-to-date statistics on the imports and exports of potato produce from a national perspective. Furthermore, it will discuss trends in the data and explain the key economic indicators that can have an effect on international trade.

By presenting an in-depth analysis of the international trade of potato produce, Australian growers can have a better understanding of the

future outlook of the industry.

The import market

Table 1 presents statistics on the total value of various potato products imported into Australia. Prepared frozen potatoes are the largest imported potato product, valued at \$135.30 million in 2014-15. Imported frozen potato products have also experienced the largest rate of growth since 2013-14, having grown by 18.62 per cent.

Figure 1 (see page 13) presents the top five source countries of frozen potato produce into Australia. New Zealand was the largest importer in 2014-15, holding a 36.76 per cent share of total imports valued at over \$49.74 million. However, the New Zealand import industry has also experienced the largest decline in growth, having fallen by 14.84 per cent (\$8.67 million) since 2013-14. Figure 1 further shows that the recent growth in frozen potato imports are largely sourced from the United States (22.62 per cent growth) and the Netherlands (29.76 per cent growth).

Export snapshot

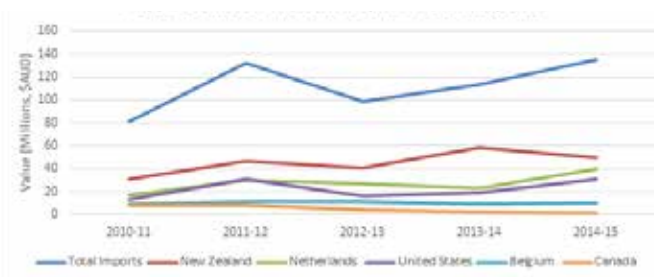
Table 2 (see page 13) presents Australian export data for potato produce over the last five years. As can be seen, all exported potato products have fallen in

Table 1:
Potato and Potato Product Imports (\$AUD Millions)

Product	2010-11	2011-12	2012-13	2013-14	2014-15
Frozen prepared potatoes	81.16	132.61	98.92	114.06	135.30
Non-frozen prepared potatoes	11.83	15.49	19.76	15.48	8.69
Potato starch	7.04	9.47	8.09	8.17	9.00
Flakes, granules and pellets of potatoes	4.05	3.86	3.35	3.48	5.01
Frozen potatoes boiled in water	0.60	1.48	0.34	0.63	0.37
Flour and meal of potatoes	0.22	0.11	0.17	0.14	0.10
Seed potatoes	0.00	0.00	0.00	0.00	0.00

Source: *Global Trade Atlas*

Figure 1:
Top 5 Countries - Frozen Prepared Potato Imports



Source: Global Trade Atlas

Table 2:
Potato and Potato Product Exports (\$AUD Millions)

Product	2010-11	2011-12	2012-13	2013-14	2014-15
Fresh potatoes	24.88	21.70	23.74	18.88	17.92
Frozen prepared potatoes	15.72	19.09	16.47	13.87	12.85
Seed potatoes	5.87	3.85	3.85	4.34	2.25
Non-frozen prepared potatoes	6.83	1.58	0.98	0.57	0.28
Flour and meal of potatoes	0.02	0.17	0.34	0.15	0.20
Flakes, granules and pellets of potatoes	0.12	0.14	0.11	0.20	0.06

Source: Global Trade Atlas

2014-15 compared to 2013-14, with the exception of flour and meal of potatoes.

The most significant changes can be seen for both fresh and frozen potato produce. Fresh potatoes declined by 5.1 per cent (\$1 million) and frozen potatoes also declined by 7.4 per cent (\$1 million) between 2013-14 and 2014-15.

Currency impact

One of the key macroeconomic variables that has a strong effect on international trade is foreign currency exchanges rates.

If the value of the Australian dollar is strong relative to other international currencies, then it is expected that the value of imports into Australia will increase. This is because the Australian dollar is able to purchase more produce from abroad due to its increased value.

Similarly, when the value of the Australian dollar is weak

relative to other international currencies, exports (and domestic production) are likely to increase as consumers abroad are able to purchase more Australian produce with their higher valued currency.

Over the 2013-14 to 2014-15 period, the Australian/US exchange rate began a steady downward trend, falling by an average of 19 per cent. The effect of the weakening Australian dollar is likely to have a large impact on international trade as discussed in Table 1 and Table 2.

The latest projections released from the Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES) have indicated that the Australian currency is likely to continue to weaken over the next five years, and is therefore likely to result in continued export growth of 29 per cent for the Australian vegetable industry.



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

Project Number: PT15007



Late blight on a potato crop.



A new discovery in the fight against Late blight

A TEAM OF SCIENTISTS IN THE UNITED KINGDOM HAS DEVELOPED A NEW METHOD TO ACCELERATE THE ISOLATION OF POTATO LATE BLIGHT RESISTANCE GENES. *POTATOES AUSTRALIA* INVESTIGATES THIS METHOD OF FINDING THE AFFECTED GENES FASTER, WHICH COULD ULTIMATELY IMPROVE POTATO YIELDS, REDUCE THE CROP'S ENVIRONMENTAL IMPACT AND LOWER PRODUCTION COSTS.

Late blight is a major threat to potato production, particularly in the United Kingdom where prevention measures and crop losses cost growers around £55 million (approximately AUD\$109 million) a year. In addition, on-farm blight management is potentially responsible for as much as half of the total cost of potato production.

While genetic resistance to a disease can be introduced into a crop species, using conventional breeding techniques to deploy genetic resistance is long and laborious.

In light of this, a team of scientists from The Sainsbury Laboratory (TSL) and The Genome Analysis Centre (TGAC) in the United Kingdom has developed a new method to

accelerate the isolation of plant disease resistance genes, including Late blight in potato crops.

Avoiding resistance

Plant pathogens such as Late blight can evolve rapidly to overcome resistance genes, so discovering new resistance genes is critical to controlling the disease. To achieve this, Professor Jonathan Jones and his colleagues from TSL pioneered the SMRT RenSeq technique, which they believe will significantly reduce the time it takes to define new resistance genes to Late blight.

This technique was applied to the wild potato relative *Solanum americanum*, which carries several resistance genes,

and ultimately allowed the researchers to identify a new source of Late blight resistance genes.

"Engineering disease resistance genes into crops is a continuous battle to stay one step ahead of new strains of disease, and scientists are constantly investigating how to speed up this process," Professor Jones told *The Daily Mail*.

"This new technique significantly reduces the time and cost of isolating candidate resistance genes, and has great potential for application to other desirable traits in potato and in other crops."

The team plans to stack several resistance genes together in one plant to make it much harder for pathogens

to evolve to overcome the plant's defences. It is hoped the deployment of this new technique will improve commercial crops through higher yields, significantly reduce environmental impact and lower production costs.



For more information, please visit tsl.ac.uk or tgac.ac.uk.

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

Project Number: PT15007

**Horticulture
Innovation
Australia**

A SMART TECHNIQUE

SMRT RenSeq makes the process of finding, defining and introducing genetic resistance far quicker and easier by combining two sequencing techniques: 'RenSeq' (Resistance gene ENrichment SEQuencing) and 'SMRT' (Single-Molecule Real Time sequencing). The technique consists of two main steps:

1. A sub-set of DNA sequences is "captured" using a method that selects for long DNA molecules that carry a sequence that is commonly associated with resistance genes.
2. These DNA molecules are sequenced multiple times to make sure the code is determined as accurately as possible using the novel long-read SMRT technology.

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Microscopic juvenile Root-knot nematode (approx 0.6 mm long).



Pear-shaped females inside a root.

Potato pest update: Root-knot nematode

WITH ROOT-KNOT NEMATODE INFESTING CROPS AROUND THE WORLD, *POTATOES AUSTRALIA* SPOKE TO CARLA WILKINSON AT THE DEPARTMENT OF AGRICULTURE AND FOOD WESTERN AUSTRALIA ABOUT THIS POTATO PARASITE AND THE CONTROL OPTIONS AVAILABLE TO GROWERS. JARROD STRAUCH REPORTS.

Root-knot nematodes (*Meloidogyne spp.*) are obligate plant-parasitic unsegmented roundworms, with juveniles and males of the species invisible to the naked eye. They are economically damaging world-wide with a broad range of hosts across almost all horticultural sectors.

There are five Root-knot nematode species that most commonly cause damage to potato crops in Australia: *Meloidogyne arenaria*, *M. incognita*, *M. javanica*, *M. hapla* and *M. fallax*. They enter plant roots as juveniles, with females then becoming stationary and feeding on adjacent plant cells as they grow. This stimulates root tissue to enlarge and form galls, which are typical signs of infection.

As Root-knot nematode numbers increase and plant root systems become more damaged, the plant's ability to uptake nutrients and water is reduced.

Risk factors

Carla Wilkinson, Research Officer in Crop Protection and Irrigated Agriculture at the Department of Agriculture and Food Western Australia, told *Potatoes Australia* about the threat that Root-knot nematode poses to potato crops.

"Infestation can lead to yield losses, and even total fresh market yield loss, due to quality defects," Ms Wilkinson said.

"This yield loss can be due to a smaller tuber size and number, even without Root-knot nematode causing tuber damage."

Ms Wilkinson also noted that physical transmission contributes to the risk of Root-knot nematode introduction, with the movement of soil

or plant material between paddocks or properties being a major risk factor.

Symptoms and detection

According to Ms Wilkinson, above-ground symptoms for Root-knot nematode can be difficult to detect, and may be confused with symptoms of nutrient deficiency and drought.

"Plants in infested paddocks may not thrive, or may be paler or more yellow than normal, and may wilt more readily than plants growing in paddocks which are not infested," she explained.

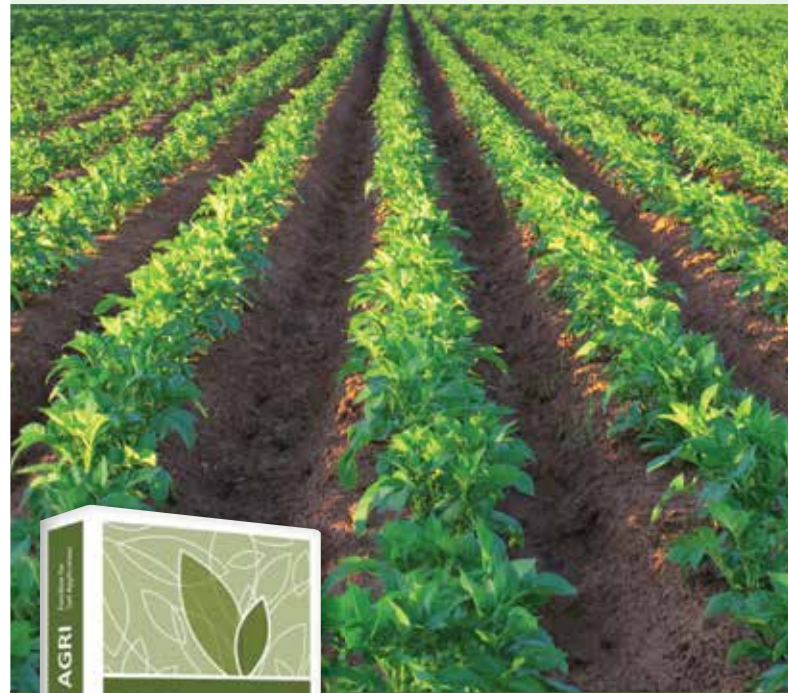
The most obvious symptoms for Root-knot nematode can be seen when the crop is nearing maturity by pulling up plants and examining their roots or tubers for galls or raised bumps.

However, if there are brown lesions on the roots without the presence of galls, the crop may not be infested with Root-knot nematode – it may instead have *Pratylenchus penetrans*, a Root-lesion nematode that is also a common problem in horticultural crops.

"Management of the different Root-knot nematode species can differ so it is important to identify which species are present in infested paddocks. Root-knot nematode species are difficult to differentiate and require the expertise of a nematode taxonomist or molecular analysis. All Australian states have commercial or government-run laboratories which offer a nematode diagnostic service and can determine if Root-knot or Root-lesion nematodes are present in a sample," Ms Wilkinson said.

"The South Australian Research and Development Institute (SARDI) also provides a

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Pioneering the Future

DNA-based soil test, PreDictaPt, which is available in some states to test soils for a range of potato pathogens.”

Management and control

There are a range of Root-knot nematode management and control options available to growers, ranging from chemical use to best practice farm operations. Some potential strategies include rotation with resistant break crops, increasing the organic matter in the soil to improve soil health and spraying out of weeds, pastures and volunteer crops which may increase nematode numbers between potato crops.

“Growers should rotate cash crops with more resistant crops or weed-free fallow to lower nematode numbers. Crops may differ in their resistance to different Root-knot nematode species so it is helpful to know which species are present.”

She added that there is a valuable booklet available online for growers wanting to know more about management of Root-knot nematodes and potential break crops, entitled *Management of Root-Knot Nematode in Vegetable Crops*. This booklet was prepared as part of Horticulture Innovation Australia Limited (formerly Horticulture Australia Limited) project MT09067 *Managing the nematode threat*.

“Nematicides and fumigants will provide some control of Root-knot nematode – however, they are broad-spectrum and kill many of the beneficial organisms in the soil,” Ms Wilkinson explained.

“It’s important to rotate management strategies and minimise chemical usage to reduce biodegradation, particularly when available chemicals reduce but do not eliminate plant-parasitic nematodes.”

Best practice biosecurity

Ms Wilkinson also recommended implementing best practice biosecurity activities, including limiting the spread of soil and vegetation between paddocks, inspecting seed for galls prior to planting and not dumping unmarketable potatoes in the paddock.

Aligning cropping activity with the natural temperature of soils can also help growers looking to control nematodes.

“Growers should plant winter crops after soils have cooled and remove them before soils warm to limit the number of nematode generations, and plant summer crops as early as possible to delay infection until after the crops are established,” Ms Wilkinson said.

With the different Root-knot nematode varieties affecting Australian potato crops, however, Ms Wilkinson noted that particular management techniques can vary from species to species.

“The species of Root-knot nematode in your paddock may not change the crop symptoms or yield loss, but may be important for management as resistance of potential break crops may differ,” she said.

“It is important to know which plant-parasitic nematodes are present, as break crops which reduce Root-knot nematode numbers may increase Root-lesion nematodes.”



For more information, please contact Carla Wilkinson at carla.wilkinson@agric.wa.gov.au.

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Ruby Lou potatoes with galls caused by infestation with *M. javanica*.

Disease update on Soft rot in potatoes

SOFT ROT CAN CAUSE HEAVY LOSSES IN STORED POTATOES IF NOT PROPERLY MANAGED. *POTATOES AUSTRALIA* HAS COMPILED THIS UPDATE TO HELP GROWERS IDENTIFY WHAT TO LOOK FOR AND HOW TO MANAGE IT.



Symptoms of Soft rot in a potato.

Soft rot is a wet, mushy rot that progresses rapidly in warm, moist conditions. The bacteria that cause Soft rot generally affect potato tubers following harvest, but can also cause Black leg, a bacterial disease occurring on potato stems in the field if weather conditions are favourable for its development.

The main cause of Soft rot spread is by wounds or damage, allowing the bacteria to invade the tuber, and are usually inflicted during harvesting and grading. When combined with surface water, the Soft rot bacteria present defeat the tuber's natural defences and start the rot.

The bacteria that cause Soft rot can remain in potato plants and tubers without any obvious symptoms, only becoming evident when the potato's natural resistance is damaged.

Symptoms

Soft rot infections commonly carry several symptoms. Infected areas of soft tissue become waterlogged, and are visually distinguishable from healthy areas through their macerated, creamy appearance before the whole tuber becomes infected.

There may also be a foul-smelling odour as the potato is broken down by the Soft rot bacteria and secondary invaders.

Other symptoms which have been linked to infection by Soft rot bacteria include non-emergence of plants, wilting, tissue browning, stem desiccation and eventually plant death.

Management and control options

Growth Stage	Symptoms	Management
Pre-Plant	Soft rot present in the seed	<ul style="list-style-type: none"> Grade out infected tubers. If cutting seed, sterilise the knife after every bin/box/bag to prevent spread to healthy tubers. Clean shed equipment frequently, especially grading/sorting rollers. Apply fungicides if required to prevent other diseases. Maintain adequate crop rotations.
Planting		<ul style="list-style-type: none"> Do not plant in a wet paddock or if soil temperatures are above 20 degrees Celsius. Avoid planting tubers that have moisture on them.
Growing crop	Non-emergence, wilting and/or yellowing of plant tissue, blackened cracks appearing on stems, water-soaked lesions on base of stems	<ul style="list-style-type: none"> Do not overwater. Minimise nitrogen application to prevent large bushy crops that have high leaf wetness. Control weeds as these can harbour Soft rot bacteria. Monitor and record areas where potato stems have black cracks appearing. These are areas with high bacteria counts and should be harvested separately to minimise potential Soft rot spread in storage.
Harvest/grading	Large amount of mechanical damage	<ul style="list-style-type: none"> Ensure tubers are mature at time of harvest. Slow the harvester/grader speed to minimise damage. Disinfect bins prior to tubers being placed in them. Avoid harvesting in wet conditions. Do not leave tubers in direct sunlight or at temperatures above 20 degrees Celsius. Dry tubers as soon as possible after harvest to remove excess soil. Minimise dust in storage areas as this spreads the bacteria.
Coolstore	Rot in bins	<ul style="list-style-type: none"> Cure the seed appropriately before placing in coolstore. Maintain adequate airflow throughout coolstore to prevent carbon dioxide build-up. Cool seed gradually to prevent condensation build-up on the surface. Apply fungicides to prevent other diseases. Maintain and clean shed and storage area regularly.



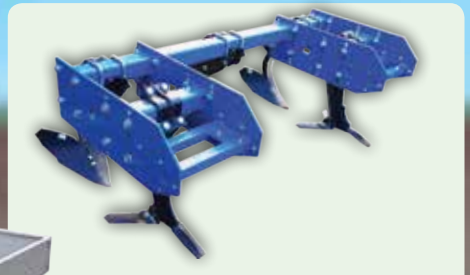
For more information, please visit agric.wa.gov.au. The topic for this article was selected following the results of PT13013 *A review of knowledge gaps and compilation of R&D outputs from the Australian Potato Research Program*.

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

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Photography by Luka Kauzlaric.

Township leaves behind legacy of golden years

WITH A POPULATION OF ABOUT 1,500, THE QUIET VICTORIAN COUNTRY TOWN OF TRENTHAM MAY BE SMALL, BUT DISGUISED BENEATH ITS SURFACE IS THE BUSTLING HISTORY OF A TIGHT-KNIT RURAL POTATO GROWING COMMUNITY WHOSE LOVE FOR THE LAND STILL RUNS DEEP. STEFANIA BOSTOCK REPORTS.

Nestled at the top of the Great Dividing Range midway between Woodend and Daylesford, Trentham is renowned for a number of things. As the longest single-drop waterfall in Victoria, Trentham Falls is obviously one of them, but perhaps, the competing jewel in the town's crown is its land.

With a fertile strip of red volcanic soil, the Trentham district has been prime potato growing country since the 1860s, not long after gold prospectors founded the town.

The humble spud has since played a defining role in the community's agricultural history, says 89-year-old local Tom Walsh. In fact, the third-generation farmer maintains: "The nicest potatoes are grown here in Trentham."

It is a big call, but Mr Walsh,

whose family is inextricably linked to the Trentham potato industry, stands firmly by it. And he must be right, if the thousands of visitors who flock to the town each year to celebrate the Great Trentham Spudfest are any indication.

"Trentham owes its foundation to the Victorian gold rush, but it was expanded a great deal by the spud industry," Mr Walsh says.

"Many locals descended from Irish immigrants. They were hard workers, and they were proud of the land."

From forest to farm

Trentham was originally known for its dense forest, desolate landscape and high rainfall. Mr Walsh says his grandparents purchased 120 acres and founded the family farm after

clearing the original forest, realising the value of the rich volcanic soil underneath.

"Gold was discovered in nearby Blackwood in December 1854. After this, a gold rush brought 70,000 people to the Trentham/Blackwood district. And the town began," Mr Walsh explains.

"This sparked an interest in the Trentham area and the beginnings of an agricultural and mining boom. People from all over the world were attracted to our district and settled here. As these people needed to be fed, the government realised the land needed to be surveyed and offered to farmers. They recognised it was excellent potato country."

Today, Mr Walsh still lives in the same weatherboard house that his grandparents built in

the 1860s.

"My family did grow other crops, but potatoes were the main commodity," he says.

"We picked up the potato varieties that were suitable. During the war there were only two or three varieties grown. Snowflake potatoes were very popular – these grew prolifically and yielded well."

Mr Walsh said the peak of the rush saw a great demand for locally-produced spuds.

"The miners needed to be fed," he says. "To get food here from Melbourne would take almost a week."

He says potatoes were dug by hand by itinerate workers, who moved from district to district in search of work. During the potato season (which traditionally ran from Easter to September), these diggers would camp in "spud huts"



Potato grower Tom Walsh and his wife Mary on their property in Trentham, Victoria.



provided by their employer, on private farms in the local growing district. These diggers would dig, grade, bag and load the spuds.

"The industry developed and during the Second World War there were around 100 potato growers around the Trentham district alone."

The golden years

Mr Walsh says the 20th Century permanently altered the commercial world.

"During the 1940s there would be more potatoes loaded at the Trentham railway station than any other town in Victoria," he says.

"1956 was the best year in the history of potato-growing for Trentham. We had reasonable crops and because there was a shortage of spuds elsewhere

in the state, we got sky-high prices, enabling growers to modernise their equipment and build sheds and fences."

Machinery began to replace the fork digger during the 1960s.

"Before then, everything was done by hand. I was the only son, so my father was waiting for me to take over the work. In the early 1940s I grew up believing I was a farmer and never thought of being anything else."

When irrigation technology kicked in around the 1960s, the farm went from producing three or four tonnes per acre up to about 12 or more.

"The place was alive. Everywhere you looked there were potato paddocks, trucks by the roadside and the railways were always brimming with potatoes."

Mr Walsh said greater mechanisation in the 1970s provided the biggest turning point, making way for double road diggers, harvesters and bulk handling/bulk trailers.

Industry turns

The rise of importation in the 1980s forced Mr Walsh to re-think his farming business.

"A few companies were importing largely processed potatoes into Australia at a fraction of our production cost. We couldn't compete against this," he says.

Mr Walsh diversified to growing certified seed under the Department of Agriculture, as well as commercial potatoes. While profitable, seed growing was challenging and time-consuming.

"The biggest change for us

was when we allowed imported potatoes to enter the market," he says. "We have had potatoes from as far as Turkey coming in. Processed potatoes took over our industry."

Today, Mr Walsh and his son grow only a few varieties of potatoes every year. He is one of only a small handful of farmers left in the district.

"We will always be potato growers, but we will find something else to do. Whether it involves vegetables or not, only time will tell."

Using parasitoids to attack aphids in potato crops

IN THIS EDITION OF *THE FRONT LINE*, WE DISCUSS THE USE OF PARASITOIDS AS A NATURAL WEAPON TO COMBAT THREE OF THE MOST COMMON TYPES OF APHIDS FOUND IN POTATO CROPS ACROSS AUSTRALIA.

Aphids can be a major pest in potato crops – along with feeding damage, they spread a number of potato viruses. These include Potato leafroll virus, Potato virus Y and Tomato spotted wilt virus.

The three most common types of aphids found in potatoes are Green peach aphid (*Myzus persicae*), Potato aphid (*Macrosiphum euphorbiae*) and Melon aphid (*Aphis gossypii*). Each type is capable of transmitting viruses between plants and feeding can result in plant stunting or death. The resulting damage can cause significant crop yield loss,

rejection of produce or even total crop failure.

A natural enemy

One of the options available to growers facing this challenge can be found in nature, free of charge. They are known as parasitic wasps and they target these three species of aphid, along with others found in and around potato crops.

In a supportive environment, they are a powerful and targeted weapon to combat the aphid threat. Once established in the crop, their numbers can grow to a point where aphids

can be controlled.

Unexpected attack

Three species of parasitic wasp target the aphids found in potatoes. They are *Aphidius colemani*, *Aphidius ervi* and *Aphelinus abdominalis*. They range in size from 2-5 mm long and are black or brown in colour.

Female wasps inject an egg into a young (nymph) aphid. While this does not kill the aphid straight away (adult wasps also feed on aphids), it keeps growing and feeding for 2-3 days before the egg

hatches. The larva (immature wasp) creates a cocoon and feeds on the inside tissue of the still live aphid.

As the wasp grows, the aphid's body begins to swell and it takes on a certain colour: black for one type of parasite and light brown/copper for the other two types of parasite. These are referred to as 'mummies' and are distinctively different from healthy aphids.

When the wasp is ready to emerge, it eats a circular hole through the back of the aphid and is then able to prey on other aphids. It takes between one and two weeks for the



Aphelinus with aphids.



Aphidius with Green peach aphids.



A high number of parasitised aphids on an eggplant leaf.

CROP PROTECTION FOR BENEFICIALS

Sprays from the approved active pirimicarb mode of action (MOA) 1A have been traditionally promoted as being kind on beneficial insects, but it is worth noting that some newer spray types will also not harm parasitoids.

Other approved actives that are unlikely to kill parasitic wasps and can be used on potatoes include pymetrozine (MOA) 9B, flonicamid (MOA) 9C, spirotetramat (MOA) 23, chlorantraniliprole (MOA) 28 and flubendiamide (MOA) 28.

An insecticide rotation that confines itself to these 'soft' active ingredients will enable the wasp population to grow.

wasp to fully mature inside the aphid. A female wasp is able to lay approximately 300 eggs in her lifespan of around two to three weeks. As a result, wasp numbers in a potato crop can grow exponentially, to the point where any aphid populations can be decimated.

Choosing the right insecticide

As most insecticides used to control aphids will also kill these beneficial wasps, the growth in wasp numbers is unlikely to reach a point where they are able to effectively control the

aphids in a potato crop.

However, there are some spray products where the approved active does not kill parasitic wasps and growers should keep these in mind when selecting a spray regime.

If certain 'soft' chemicals are used as an insecticide, then wasp numbers are likely to keep growing. If a spray regime is able to rotate multiple approved actives that do not harm these beneficial wasps, then this fights not only insecticide resistance in aphid populations, but allows for the wasps to continue their good work.

Growers wishing to gauge

the effectiveness of adopting an approach that protects beneficial wasps should be able to see parasitised aphids on their potatoes.



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 – Scientific Affairs Dr Jessica Lye or AUSVEG Assistant National Manager – Scientific Affairs Nicholas Schmidt on 03 9882 0277 or jessica.lye@ausveg.com.au or nicholas.schmidt@ausveg.com.au.

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Aphelinus mummies.





Breeding a new generation of potatoes

FOR MORE THAN 50 YEARS, CORNELL UNIVERSITY IN THE UNITED STATES HAS BEEN BREEDING POTATOES, WITH A FOCUS ON DEVELOPING NEW CHIPPING AND FRESH MARKET VARIETIES. DIMI KYRIAKOU REPORTS ON THE LATEST ADVANCEMENTS FROM THE POTATO BREEDING PROGRAM, INCLUDING THE NEED TO DEVELOP RESISTANCE TO POTATO VIRUS Y.

The development of new potato varieties plays an important role in strengthening the health and growth of the global potato industry, with numerous breeding programs throughout the world aiming to improve the yield, quality and pest resistance of this vegetable commodity.

In New York, Cornell University has been running a potato breeding program for over 50 years. According to Walter De Jong, Associate Professor at Cornell University's School of Integrative Plant Sciences, Plant Breeding and Genetics Section, a new variety is released every two to three years.

"We seek to develop new fresh market and chipping potatoes that meet the needs of regional growers, processors and consumers alike," he said.

The university devotes about 70 per cent of its efforts to developing new chipping varieties such as Lamoka, which was released in 2011 and is currently the fourth highest chipping variety in the country.

"There are many independent chipping plants within a few hundred miles, and regional growers need high quality potatoes to supply these plants," Mr De Jong said.

Addressing different needs

As Mr De Jong explains,

the program must address a range of market demands and industry threats when developing new varieties for chipping or the fresh market.

"For chipping potatoes, the push has been to develop potatoes that can be stored for a long time – from September harvest until May or June – and still chip well. Our most recent releases, Waneta and Lamoka, were developed in response to that need," he said.

"For table potatoes, the emphasis is on smoother and smoother skin. In the specific case of reds, we hear requests for potatoes where the colour doesn't fade in storage. Over the past few years, regional stakeholders have also started to ask for earlier maturing potatoes."

In addition to developing new chipping varieties, the breeding program also focuses on incorporating Golden nematode resistance, as this potato pest is only present in New York in the United States.

"Affected farmers are required to grow resistant varieties as part of a rotation scheme to prevent the nematode from spreading further. Almost all varieties we've released over the past few decades are resistant to the Golden nematode," Mr De Jong explained.

"Other traits we devote above-average attention to are resistance to Common scab, as there is no good chemical



control for it, and resistance to Potato virus Y, as tuber necrotic strains are becoming more common in North America.”

Grower consultation

Cornell University places an emphasis on running a participatory potato breeding program, which involves consultation with growers and industry members several times a year.

“I’m always looking for input on what growers and industry would like to see in new varieties. On some occasions, I’m also seeking to communicate, as objectively as I can, the strengths and weaknesses of the most advanced selections we are currently evaluating,” Mr De Jong said.

“One of the best parts of my job is that regional potato growers and industry are engaged. They provide feedback, positive and negative, on what we’re doing. Ultimately, we don’t release a new variety unless the potato industry has expressed a strong interest in it.”

Looking to the future, Mr De Jong said that Cornell University will continue to push the envelope on chip processing quality and shift its potato breeding focus so that almost everything released is resistant to Potato virus Y, which has become

increasingly problematic over the last 15 years.

“Reducing yield by a few per cent is one thing, but necrotic strains that can make tubers unmarketable are something else, and demand our attention,” he said.

“Breeders create the raw product – the specific potato – that a grower grows, that a factory processes and that a consumer eats. As long as there are demands for better yield, pest resistance, nitrogen use efficiency, eating and processing quality and a whole lot more, breeding programs will be trying to meet those demands.”



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

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Young grower profile

Name: Xavier Toohey
Age: 31
Location: Wallace (near Springbank), Victoria
Works: Xavier Toohey self-trader
Grows: Innovator and Atlantic





How did you first become involved in the potato industry?

I grew up in the industry. My father grew spuds for years and then I went away for about seven years to work as a diesel mechanic. I started doing some potato harvesting contracting before I grew spuds in the first year on my own.

I guess growing spuds is just like a drug to a drug addict. It's in your blood so you just have to come back and you want to do it.

What is your role in the business?

I'm owner, operator and director. I bought my own farm and Dad still has his farm.

How would you describe your average day at work?

It varies a lot. I'm either driving the harvester and digging the spuds all day and then taking them to McCain or to Melbourne during the night, or I'm sitting

in the truck working the ground to get the crop in. I have an earthmoving business as well so sometimes it's earthmoving during the day and spuds during the night. Luckily I don't need much sleep!

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

I think it's the satisfaction you get when you start digging in a new paddock and putting all of your blood, sweat and tears from the season into the crop – because you get plenty of them – and seeing what a good product you've grown and a nice yielding crop. I don't think there's another job that gives you that sort of satisfaction.

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

A lot of people aren't eating spuds anymore which is a bit of a concerning factor and importing chips is a major challenge. The government subsidises a lot of spuds grown

in Holland and they can make chips for next to nothing and still import them even with a low Australian dollar, which is really concerning.

The new potato diseases that keep coming in are quite harsh on the yields. Potato virus Y is a problem here and a lot of extra water has been bought in this area over the last few years to get the crops through. The dams weren't even full before we started this year, so it's been tough.

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

Export was back on this year and we need a new market because I think there just isn't enough market for what Australia can grow in spuds. The Asian countries seem to be our main export market at the moment and I think they will continue to be our main market due to their high population and they don't have the capacity to grow spuds because of their climate.

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

Maybe the government could start subsidising it so it isn't as hard to get into the industry.

The amount of equipment you have to purchase to get into the industry is phenomenal and then if you leave the industry, you can lose money on your equipment because you can't sell it for the same amount you paid for it.

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

I would probably be in the earthmoving industry or working in the mines as a diesel mechanic.

Where do you see yourself in five years?

Expanding the business and growing another 1,500 tonnes on top of what I'm growing now.

Ask the industry



with Scott Mathew

One point in particular keeps coming up at the moment around herbicide resistance management in horticultural areas, and why some herbicides have started to lose their efficacy. Below, I try to answer the common questions that continue to pop up during my travels.

Why am I starting to find that some herbicides I used in the past are no longer working as well as they used to?

There could be any number of reasons for the herbicide not working as well as it had previously. Some reasonable explanations include:

- The herbicide was not applied at the correct rate for the size or species of weed and according to the label.
- Adverse environmental conditions such as higher temperatures, low relative humidity (or a combination of both) affected the herbicide application.
- The weed population you are trying to control developed, or is developing, herbicide resistance due to intensive use of herbicides in your horticultural crops. When a particular herbicide mode of action (MoA) group is used repeatedly over a number of years (for example, herbicides from the GROUP A mode of action such as FUSILADE FORTE®), you are selecting for resistant strains of grass weeds to that herbicide MoA group. This can occur in as little as three years.
- It is likely that the weed population included a small percentage of individual weeds that were naturally resistant to

IT IS IMPORTANT THAT HERBICIDES ARE APPLIED PROPERLY, TO ENSURE CROPS DO NOT DEVELOP HERBICIDE RESISTANCE. SYNGENTA TECHNICAL SERVICES LEAD SCOTT MATHEW EXPLAINS WHY GROWERS MAY BE NOTICING THAT THEIR HERBICIDES ARE NO LONGER HAVING THE DESIRED EFFECT, AND HOW TO COMBAT THIS PROBLEM.

herbicides, even before the herbicides were used.

What can influence the development of herbicide resistance?

A number of factors can influence the development of herbicide resistance, however the four main factors are:

1. The intensity of selection pressure and frequency of use. This refers to how many weeds are killed by the herbicide. The number of years of herbicide use is also a good measure of selection intensity.
2. The frequency of use of a specific herbicide or MoA group.
3. The frequency of resistance present in untreated populations. If the frequency of resistance is relatively high, such as with GROUP A herbicides, resistance will occur quickly. If the frequency is low, such as with GROUP M (glyphosate) herbicides, resistance will occur more slowly.
4. The biology and density of the weed. Weeds that produce large numbers of seed and have a short seed bank life in the soil will evolve resistance faster than weed species with long seed bank lives. Resistance is also more likely to be detected in larger weed populations.

Are there any other reasons why my herbicide application may not have achieved the desired result?

The majority of herbicides require good coverage of the target area to ensure the best

possible chance of controlling the weeds. Just as importantly, you need to make sure your spray equipment is properly maintained and calibrated.

Remember to always follow the label directions for the herbicide you choose. Always use at the recommended label rates, spray volumes and correct nozzles while also assessing the environmental conditions carefully. This will ensure you achieve the best results.



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](mailto:PotatoesAustralia:info@ausveg.com.au). Please note that your questions may be published.

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

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

Project Number: PT15007



Managing blemish problems in fresh market potatoes

THE VISUAL APPEAL OF PRODUCE HAS NEVER BEEN MORE IMPORTANT TO CONSUMERS, AND REDUCING BLEMISHES IS A KEY FACTOR IN ENHANCING SALEABILITY. *POTATOES AUSTRALIA* EXPLAINS HOW INTERNATIONAL RESEARCHERS HAVE UNDERTAKEN PRELIMINARY STUDIES TO INVESTIGATE OPTIONS FOR BLEMISH MANAGEMENT IN FRESH MARKET POTATOES.

When it comes to fresh produce, modern consumers buy with their eyes as much as they buy with their stomachs. Consistently providing visually appealing, blemish-free produce is therefore a major challenge for Australian growers, including potato producers. Research suggests that fresh market potato growers can cull as much as 15-20 per cent of their crop because of visual flaws or imperfections which “spoil” the appearance of tubers and make them unmarketable. This is particularly the case in red, white and yellow smooth-skinned tubers as blemishes are easily observed.

To help reduce the loss of fresh market potatoes and improve the overall returns to growers, researchers at North

Dakota State University are undertaking a project to identify what management methods are available for controlling blemishes.

Prevalent blemishes

To identify common blemishes affecting fresh potatoes, researchers took 11 samples of red-, yellow- and white-skinned cultivars from eight different fresh pack sheds in Minnesota, and 17 samples from different red-skinned potato lots in North Dakota. The researchers found that prevalent blemishes included external bruising, skin netting, Lenticel spot, superficial Common scab, Silver scurf and Black dot.

The researchers noted that some of these blemishes can be controlled through cultural management practices. For example, external bruising can be prevented by taking more care when handling potatoes

while Lenticel spot can be controlled by allowing potatoes to dry sufficiently after washing.

Crop protection options

To further assist growers in preventing loss from blemishes, researchers undertook tests for chemical control options for disease-based blemishes at sites in Becker, Minnesota and Grand Forks, North Dakota. These tests covered the use of plant growth regulators and fungicides.

The researchers found that the use of plant growth regulators to improve blemishes achieved mixed results, with the North Dakota site showing no change after use. On the other hand, the Minnesota site showed reduced netting/russeting on tubers after the use of MN ethephon (2-chloroethylphosphonic acid); however, this increased the amount of Pitted scab and Lenticel spot.

The project also found that some fungicides reduced Black dot and Silver scurf blemishes in both trial sites, particularly when applied at planting.

As further research is being conducted on this project, *Potatoes Australia* will provide updates in future editions of the magazine.



For more information, please visit ag.ndsu.edu/potatoextension.

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

Project Number: PT15007



The best defence: Potato plants boost aboveground defences during tuber attacks

INTERNATIONAL RESEARCHERS HAVE FOUND THAT POTATO PLANTS CAN BOOST THE CHEMICAL DEFENCES IN THEIR LEAVES AS A RESPONSE TO GUATEMALAN TUBER MOTH LARVAE FEEDING ON ITS TUBERS. THIS RESEARCH MAY HAVE IMPORTANT IMPLICATIONS FOR THE DEVELOPMENT OF ENHANCED POTATO VARIETIES, AS STEPHANIE EAVES REPORTS.

Researchers from the Boyce Thompson Institute (BTI) and Cornell University in the United States recently investigated the chemical defences of potato plants, with exciting findings. The study focused on a potato variety called *pastusa suprema*, which is grown commercially in Colombia, and its response to the destructive Guatemalan tuber moth (*Tecia solanivora*) feeding on its tubers.

Lead researchers, BTI Professor Georg Jander and Cornell University Assistant Professor of Entomology Katja Poveda wanted to investigate the previously unexplored question of how plants signal and respond to tuber attacks. To look at this, they tested the defensive responses of *pastusa suprema* to attacks from underground Guatemalan tuber moth larvae, and analysed how those defences affect two aboveground leaf-eating

pests – the Beet armyworm (*Spodoptera exigua*) and the Fall armyworm (*Spodoptera frugiperda*).

A chemical defence

The research team grew Guatemalan tuber moth larvae on a single tuber of a potato plant over a period of eight days. During this time, they collected leaf and tuber samples from the plant to test for gene expression changes and the production of chemical defences.

The results showed that the plant with infested tubers had higher levels of defensive compounds in its leaves, including chlorogenic acid and glycoalkaloids, which are bitter-tasting plant toxins. The research team attempted to rear Beet armyworm and Fall armyworm on these leaves, as well as on the leaves of plants that were not infested by tuber

moth larvae.

The team found that the Beet and Fall armyworm larvae gained less weight when they were raised on the infested plant than when they were raised on an unexposed plant. However, the potato plant defence did not work in reverse, as the tuber moth showed no ill effects when fed on potatoes whose leaves had been chewed by the Beet armyworm larvae.

Future potential

The researchers believe that this response may help potato plants to overcompensate for the damage by increasing tuber yields. By maintaining high levels of photosynthesis, and therefore healthy leaves, the plant increases its defences against leaf-eating pests and provides more nutrients to its tubers.

The research team has not yet determined the exact

insect compounds that trigger this response, however they believe that, in the future, these compounds could have significant benefits for agriculture. Utilising the compounds could result in the creation of potato plants that mimic the effects of tuber moth infestation by growing larger tubers and showing a heightened resistance to leaf-eating insects.



For more information visit phys.org/journals/oecologia.

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

Project Number: PT15007

Making on-farm data transfer easier

WHETHER YOU'RE IN A TRACTOR OR OUT IN THE FIELD, THE ABILITY TO REMOTELY ACCESS AND TRANSFER DATA ABOUT YOUR FARM IS ESSENTIAL. RECENTLY, JOHN DEERE DEVELOPED A SOLUTION FOR GROWERS TO EFFICIENTLY ACCESS AND TRANSFER THIS INFORMATION DESPITE RUNNING OLDER OR MIXED-FLEET EQUIPMENT.

John Deere is adding more tools to its Operations Center within MyJohnDeere™ and making it easy to wirelessly transfer data from older equipment and non-John Deere displays to the Operations Center.

This is achieved with Mobile Data Transfer, which enables customers to wirelessly transfer agronomic data to and from non-John Deere displays and from the GreenStar™ 3 2630 display (in older equipment that is not JDLink™ compatible) to the Operations Center. It enables producers to consolidate data from multiple branded displays into one centralised location for their use or to be shared with trusted advisers.

"Mobile Data Transfer is the simple solution for customers who run older or mixed-fleet equipment and want immediate access of information stored in their displays. It eliminates the manual transfer of data," explains Jeff Nolting of John Deere Intelligent Solutions Group (ISG).

"It's a USB to WiFi device that plugs into the display and transfers data using your smartphone via the Mobile Data Transfer app. Your phone sends the data to the Operations Center to give farm managers and trusted advisers immediate access."

There are multiple ways to get data into the Operations Center where it can be put to use. Mobile Data Transfer works with a variety of in-cab displays and mobile devices to facilitate the transfer of information. If you

are running older equipment and have not yet moved to a JDLink Connect enabled machine, this option is a great way to get started.

Streamlining jobs

The Operations Center allows growers to access the tools to start planning with the MyJobs app. These tools allow a manager to define a job that needs to be done, and it includes all of the specifics of that job.

"Add Jobs" automatically syncs up with the "My Jobs" app on mobile devices of operators and other employees. This allows detailed job orders to be received in real time instead of spending hours on the telephone or managing to-do lists that can be lost or misplaced.

The features allow growers to ensure everything is in order by keeping track of the year-to-year changes that can bring about higher efficiency and yields.



For more information, visit johndeere.com.au or your nearest John Deere dealer.

12 useful apps for potato growers

WHEN YOU'RE WORKING ON THE FARM, AN INTUITIVE APP CAN MAKE POTATO GROWING A LITTLE BIT EASIER. APPS CAN HELP WITH MEASURING PADDOCKS, KEEPING RECORDS OF ON-FARM OPERATIONS, IDENTIFYING PESTS AND DISEASES AND PLANNING FOR THE WEATHER. *POTATOES AUSTRALIA* HAS COMPILED A LIST OF 12 USEFUL APPS FOR POTATO GROWERS, PROVIDING A DIGITAL SOLUTION FOR A RANGE OF ISSUES.

Bayer Crop Manual



The Bayer Crop Product Manual helps you to find the right crop protection and environmental science product for your agricultural needs.

- View up-to-date label and safety data sheets for Bayer's herbicide, insecticide and fungicide products.
- Search by product, active ingredient or crop.
- Access detailed information on each product.

Price: Free

Compatible with: Android

Syngenta TankCalc



Syngenta TankCalc is an easy way to calculate filling plans for spraying. It allows quick and accurate tank mixing, based on the area to be sprayed, tank size, product, dosage and driving speed.

- Create a filling plan with the amount of products, water and number of tanks.
- View a summary of the total consumption of products and water.
- Calculations can be saved and exported to your PC for easy access.

Price: Free

Compatible with: Android and Apple

TankMix by DuPont



TankMix by DuPont allows growers to easily calculate the amount of product or water needed to treat a specific field area, as well as the amount of product needed for a specific tank size or to achieve the desired volume to volume ratio.

- Choose from various units of measurement.
- Quickly calculate the amount of product or water needed for your desired use.
- Enter information using either decimals or fractions.

Price: Free

Compatible with: Apple

uManage by Netafim



uManage by Netafim is a real-time crop management Decision Support System (DSS) for greenhouses and open fields.

The app continuously collects data from a wide range of field sensors and activates devices such as irrigation valves and pumps connected to irrigation controllers.

- Instantly access and update critical information from the field.
- Respond immediately to new events such as Irrigation, Sprays, Faults and Maintenance.
- Fully customisable with mobile access to custom objects and configuration.

Price: Free

Compatible with: Apple and Android

JDLink



JDLink™ is a telematics system designed for customers and managers to monitor and manage their John Deere fleet from a laptop, desktop or mobile device.

- Access multiple machine mapping, including Engine Hours.
- View and search by Machine PIN or barcode scanner.
- Access a fleet scorecard for alerts and filter multiple alert categories at one time.

Price: Free

Compatible with: Apple and Android

FertiMatch



Developed by Haifa-Group, FertiMatch helps growers determine the right amount of fertilisers needed to achieve the desired nutritional composition in three simple steps.

- Insert details about the Fertigation control head, define a reference element and concentration and select fertilisers.
- The output outlines what quantity of fertiliser is needed and the concentration of nutrients in the irrigation water.
- Flexible settings are available and no internet access is required.

Price: Free

Compatible with: Apple, Android and Windows

Elders Weather



Elders Weather provides accurate weather information, which is updated regularly. The app includes over 2,000 Australian locations and key international locations.

- Add up to 10 favourite locations. Weather data includes Delta T, a seven-day forecast, 12-month rainfall data, temperature from the past 24 hours,
- Nino 3.4 index and local radar with play/pause functionality.
- You can switch between units of measurement for temperature, wind speed and rainfall.

Price: AUD\$2.49

Compatible with: Apple

APVMA



Developed by the Australian Pesticides and Veterinary Medicines Authority, this app allows you to access the databases of Australian registered agricultural and veterinary chemical products, including minor use and off-label permits.

- Search for products that are registered, suspended, cancelled, stopped or archived and email your search results.
- Switch between products and permits, and view details such as withholding periods, pack sizes, registered pests and hosts, and accompanying documents.
- Save products and permit documents for fast retrieval.

Price: Free

Compatible with: Apple

Veg Pest ID



Veg Pest ID helps growers and agricultural professionals identify pests, diseases and disorders affecting Australian vegetable crops using a database of pictures and information.

- Search by crop or pest and access high quality photos, which can be viewed in full screen or enlarged.
- View detailed information on each pest to help you identify different life stages, understand the risks and take steps towards control.
- The content is available offline and updates automatically when connected to WiFi.

Price: Free

Compatible with: Android and Apple

IPM Toolkit



IPM Toolkit was developed by the University of Wisconsin's Integrated Pest Management (IPM) program, and assists growers in adapting IPM practices to their farm.

- Access research, news articles and useful information through videos, publications and pictures.
- Add Twitter lists and YouTube channels to keep the latest information in one place.
- Bookmark articles or videos that you want to read or watch later.

Price: Free

Compatible with: Android and Apple

Farmware



Farmware is a farm management application used to store all of your farm activities. With over 40 types of cropping activities built-in, you can record completed activities or plan future activities.

- Record over 40 different crop and paddock activities within the areas of cultivation, harvest, applications, preparation, testing, monitoring, repairs and construction.
- Maintain storage inventories for chemicals, commodities and fertiliser, and record sales, purchases, transfers and usage of stored items.
- All data can be accessed on your smartphone while offline.

Price: Starting from \$22 per month

Compatible with: Android, Apple and Blackberry

GPS Fields Area Measure



This GPS measuring tool can help growers to check and record planting areas. You can measure the area and perimeter of paddocks, as well as the distance of roads.

- Save, name and group your measurements.
- Easily switch between measurement units.
- Send Google Maps links that show the selected area or route to your colleagues and add markers to important locations on the mapped area.

Price: Free

Compatible with: Android



For more information, visit ausveg.com.au/resources/smart-phone-apps.htm.

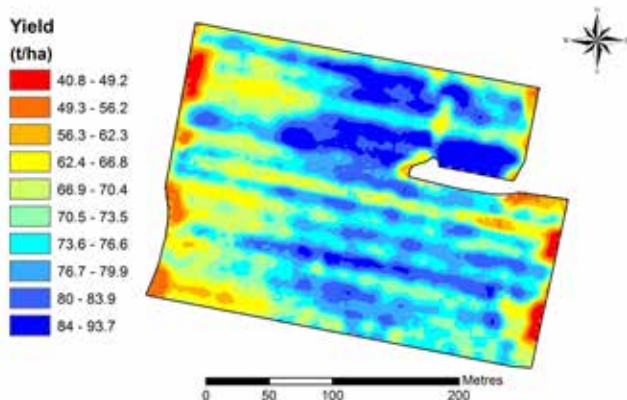


Figure 1: Crop yield gathered on-harvester.

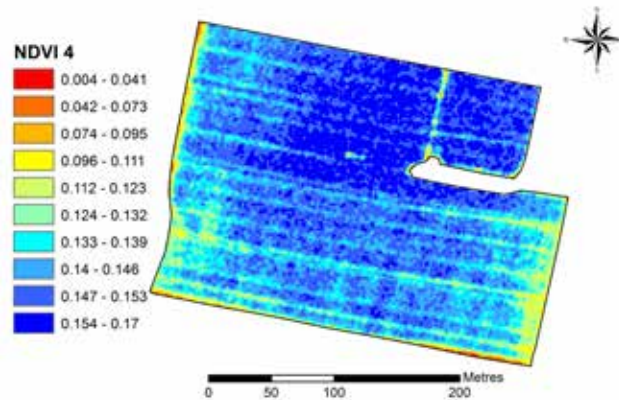


Figure 2: Aerial NDVI imagery gathered during the growing season (week 16).

Improving potato yield and production efficiency with spatial variability

FOLLOWING A PROGRESS REPORT PUBLISHED IN *POTATOES AUSTRALIA* APRIL/MAY 2015, WE SHARE THE FINDINGS FROM A TWO-YEAR RESEARCH PROJECT BETWEEN THE UNIVERSITY OF SYDNEY, SIMPLOT AUSTRALIA AND TERRAPIX TO TRIAL PRECISION AGRICULTURE TOOLS TO BETTER UNDERSTAND POTATO YIELD VARIABILITY.

This research project aimed to pioneer an understanding of the extent and causes of within-field spatial variation in Tasmanian potato yield using a range of new sensing technologies, and provide a preliminary assessment of the potential for variable-rate management responses to improve the profitability of potato growing.

To achieve this, soil apparent electrical conductivity (ECa) and high resolution elevation data were used to first define the variation in soil and landscape resources. Variation in crop production was then estimated using in-season aerial reflectance measurements and measured using a first generation on-harvester yield monitoring system.

During the season, the physical and chemical properties of soil and crops were measured to groundtruth/calibrate the sensor-derived data.

Results

An example of the data gathered for one field is shown in Figures 1-3 above.

The yield monitoring proved that potato yields vary substantially between fields in both Tasmania's north and the

Midlands (54 t/ha to 78 t/ha; avg = 64.3 t/ha) with an average 3.5-fold yield variability within any field (28 t/ha to 96 t/ha). This variability is of similar magnitude to that found in broad acre and other horticultural crops.

The soil within the potato fields showed an extensive variation in soil type and texture which could be mapped using the ECa sensors. The data showed that the topsoil is more variable in soil physical properties than the subsoil, with the Midlands showing the greater within-field variability.

Soil properties

Of the physical soil properties measured, increasing clay and decreasing silt content had the biggest impact on raising crop yield. Soil nitrogen and potassium showed a significant positive relationship with yield and when the exchangeable cations of aluminum, calcium and magnesium increased as a portion of Cation Exchange Capacity (CEC), then yield fell. Increasing iron concentration in the soil also reduced yield.

The concentration of the key micronutrients boron and iron in plant tissue indicated a potential for toxicity in both areas. Manganese concentrations

in the plant tissue showed a positive relationship with yield, which may indicate an important tendency towards deficiency in both regions.

Soil-borne diseases

The relationship between yield and the soil-borne disease pathogen load showed a negative correlation with Lesion nematodes including *Pratylenchus penetrans* and *Pratylenchus crenatus*, suggesting a tendency for the present loads to be negatively impacting yield.

Positive correlations with yield were found with Root-lesion nematode (*Pratylenchus neglectus*), Northern root-knot nematode (*Meloidogyne hapla*) and Powdery scab, which may indicate that where yield is highest, the conditions and increased plant material causes pathogen loads to build but they are not yet at damaging levels.

Plant growth

From a plant physiological view, increasing the average stem length of the plants within a three metre length of row showed up as the most significant plant parameter that positively affects crop yield compared to the number of

plants or numbers of stems.

By also monitoring the plant growth at five times during the season (weeks 8, 12, 14, 16 and 19) using aerial Normalised Difference Vegetation Index (NDVI), a number of important interactions could be observed.

Conclusion

In general, changes in elevation and the related soil physical changes are generally working to influence crop growth, and during the first two thirds of the season it was the areas of higher elevation that produced higher NDVI. This may indicate that elevation/soil interaction is actually combining with rainfall/irrigation quantities to create a production restriction at lower elevations.

The timing of each NDVI survey produced information that was directly relevant to seasonal stages of production. Early season surveys responded significantly to differences in soil properties and soil-borne disease pathogen load.

From mid-season onwards, the NDVI significantly responded to differences in plant-related physical and chemical properties. It is worth noting that differences in both plant nitrogen and plant phosphorus – the two

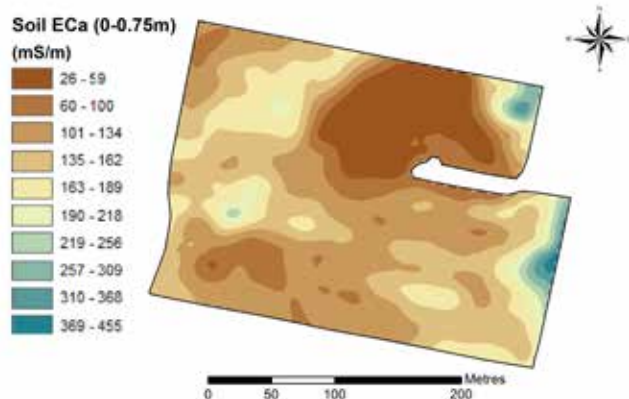


Figure 3: Soil ECa gathered for a field.

major elements applied in fertiliser management regimes – significantly influenced NDVI at this stage.

The relationship between on-harvester yield and NDVI gathered during the season showed a distinct trend to increasingly significant positive relationships by the fourth survey (week 16). This is an encouraging result for the use of NDVI as a predictor of potato yield at the whole-field scale. It suggests that it is more useful to gather aerial imagery from mid-season onwards if the prediction of variability in crop yield or the identification of potentially low

production areas is desired during the season.

Grower guidelines for spatial management of inputs

The results of this project indicate that a simple focus on managing spatial variability in the main macronutrients should be the first target. This is also a well-adopted management target in other cropping industries so technology for operations is widely commercialised.

The second area for consideration is the use

of soil ECa, elevation and NDVI imagery to manage irrigation water. The options for implementation include:

- A pre-season survey for soil ECa and elevation. Early season aerial NDVI could be substituted for ECa to minimise costs. This step is most important if irrigation management is likely to be a target.
- Mid-season aerial NDVI imagery gathered to detect areas of potential nitrogen and phosphorus deficiency and yield limitations.
- Use mid-season imagery or combine with ECa/early imagery and elevation to stratify fields into potential management classes (PMC) and direct sampling.
- Sample top soil in each PMC for crop and soil chemical properties to determine the potential for variable-rate nutrient management options based on the measured concentrations in each PMC. Nitrogen, phosphorus, potassium and manganese are priorities to target and avoid deficiency. Toxicity issues to assess include boron and iron. If

irrigation management is also a target, sampling topsoil and subsoil for particle size analysis and soil conductivity is recommended.

- Rectify any easily managed issues. Collect yield data to build a dataset for the field to use in quantifying the impact of in-season management changes on production and to refine any future changes to nutrient or water management.



This project, *Understanding spatial variability in potato cropping to improve yield and production efficiency* was funded by Horticulture Innovation Australia Limited using the National Potato Levies with co-investment from Simplot Australia Pty Ltd – Tasmania and funds from the Australian Government.

The final report for this project highlights further research issues and will be made available online on the InfoVeg database at ausveg.com.au/infoveg.

Project Number: PT13000

**Horticulture
Innovation
Australia**

CALENDAR

23-25 June 2016

2016 National Horticulture Convention

Where: RACV Royal Pines, Gold Coast

What: Co-hosted by AUSVEG, Apple and Pear Australia Limited (APAL), Growcom, Persimmons Australia, Australian Organic, Onions Australia and the Central Markets Association of Australia in partnership with Fresh Markets Australia (CMAA-FMA), the highly anticipated National Horticulture Convention will return to the Gold Coast with a program that is bigger and better than ever.

Further information: Please contact AUSVEG on 03 9882 0277 or email convention@ausveg.com.au or visit hortconv.com.au.

31 July – 4 August 2016

Potato Association of America 100th Annual Meeting 2016

Where: Grand Rapids, Michigan, United States

What: The 100th Annual Meeting of the Potato Association of America is a great networking opportunity for those interested in the North American potato industry. The event will include updates from the latest in potato research and presentations from industry representatives who will discuss ways to improve the potato industry as a whole.

Further information: Please visit potatoassociation.org.

Regional updates

South Australia



The recent news that Oakville Produce has been placed in voluntary administration is concerning for the South Australian potato industry, with growers all around the state already struggling with high levels of debt, high

production costs and tightening profit margins.

AUSVEG SA will be investigating ways for both the State and Federal Governments to step in and help our growers by providing assistance where possible to South Australian potato growers who have been impacted.

Many potato growers and companies are beholden to major retailers and pack

houses, and when they collapse it can place extreme financial burdens on growers. AUSVEG SA has received reports of growers being left hundreds of thousands of dollars out of pocket, which is clearly unsustainable for many growers in the state.

There are structural issues within the Australian potato industry that should be addressed in the long-term, and

AUSVEG SA is working closely with the national Peak Industry Body and other AUSVEG State Members to address this issue.

Jordan Brooke-Barnett

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State Manager
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Adelaide SA 5000
Phone: 08 8221 5220

Victoria - seed



At a recent SPV meeting, our certified seed potato growers commented how rewarding it is to see the low levels of Potato virus Y (PVY) in seed crops. Nigel Crump, Manager of ViCSPA, and staff, who have worked long and hard on this issue, also commented that

ViCSPA has seen very little PVY in certified seed potato crops this year, with some of the lowest rejection rates seen for years.

So we thought it would be a good news story to share with the industry. It has taken more than five years to get to the point that certified seed growers can now safely claim they have managed PVY. The forces behind the drop in the prevalence of PVY in the Certified Seed Potato Scheme

include increased seed grower vigilance, enhanced ViCSPA protocols relating to the certification of seed potatoes, favourable climatic conditions and the removal of infected tubers from the Certified Seed Potato Scheme.

For some growers, clean seed has cost them thousands of dollars as they systematically destroyed infected crops or sold seed as commercials (if there was a market). This does not mean the industry should

be complacent about PVY; rather, it demonstrates that the certification system works and emphasises the importance of clean certified seed and the professionalism of seed growers.

Dean Bone

Seed Potatoes Victoria
Chairman
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Warragul, VIC 3820
Phone: 03 5622 3025
Email: admin@spv.org.au
Website: spv.org.au

Tasmania



Tasmanian potato growers were happy to accept a new deal with potato processor Simplot Australia recently. Simplot has offered a five per cent increase paid to farmers over a three year period.

This has been a joint

negotiation between growers and Simplot, with the initiative taken by TFGA Simplot Potato Committee Chairman and Scottsdale farmer, Trevor Hall. The new contract provides some relief for potato growers after an uncertain period caused by a decline in trade.

The growers agreed to a three-year deal, with an incremental increase of payment, and a supplementary payment of \$320 a hectare for the current harvest that will also

be paid due to poor growing conditions. This supplementary payment comes before the three-year contract which begins with the planting of the spring crop and will see a price increase of \$7.50 a tonne. The year after will see an increase of \$5.00 a tonne and the following year an increase of \$2.50 a tonne.

While the financial gain is modest still, it does provide us and the industry with stability and ensure against a sudden

price drop. It means growers can budget and prepare for any other costs associated with growing as well.

The negotiations were ratified by 60 potato growers at a meeting in Deloraine.

Peter Skillern

Tasmanian Farmers & Graziers
Association President
Cnr Cimitiere and Charles
Streets Launceston, TAS 7250
Phone: 03 6332 1800

New South Wales



Harvesting in the Crookwell area is well underway. After some late but very welcome rain, the

irrigators are packed away and crops are lifting well. Yields are on average with previous years and enquiry for seed is strong.

Sebago seed is keenly sought after this season and stocks are running out quickly. Cold weather has now hit the district

so grading of seed lots has begun. All crops have tested virus free for the 2016 season.

Matthew Gay

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

Western Australia



Deregulation continues to dominate the potato landscape in Western Australia. The State Government has made \$12 million available to growers as an adjustment package to help them either exit the industry or reposition their businesses to compete in the deregulated market.

The Agriculture Minister has formed an Industry Working Group, which includes grower representatives, to examine all

issues regarding deregulation. The working group will present its recommendations to the Minister by 30 June.

There will also be available to industry a further \$2 million to help maintain existing programs such as R&D and marketing. It will also be available for market development, particularly export. These funds are only available subject to an appropriate business case put forward by the Potato Growers Association. Industry contribution will also be necessary to access the funds.

Meanwhile, growers face an uncertain future with many being unable to secure

contracts for all or even any of their production. Those that have are unable to receive a price so growers now face increased pressure from banks. Some business consultants are recommending growers do not sign these contracts and pursue other activities.

The summer storm that hit the southern growing regions has had a significant effect on autumn supply. Both yield and quality have been affected, so supply has tightened for the first time in nearly a year. Hopefully this translates to improved returns to growers.

Winter harvest is just starting and thanks to one of the best

autumn seasons in many years, crops are looking very good.

WA growers are faced with significant challenges due to deregulation. Once the market adjusts we need to embrace those challenges, create new opportunities and take the industry forward.

Simon Moltoni

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Queensland



Queensland's potato production is focused in the key growing areas of the Atherton Tableland, Bundaberg, Killarney and Eastern Darling Downs and the Lockyer Valley.

This issue's report comes from the Lockyer Valley region, where growers who are about to start planting could use more rain. Input costs are up with increased irrigation rates of around 0.7 megalitre/ha per farm and increased electricity charges after a summer that has gone on "a month too long".

A longer summer has come

unsought for insect pests such as mites and aphids, requiring spraying on some farms.

Growers in the Valley are mainly producing washed potatoes for the market with a handful of growers supplying to processors – Snack Brands Australia and Smith's Snackfood Company. The Valley prides itself on the superior quality of its fresh potatoes which are not stored in the ground but promptly harvested and supplied quickly to the market.

The dozen or so washed potato growers are hopeful it will be a better season than last when the price collapsed due to a major oversupply nationally. They grow a range of red and white varieties which are washed and packed at two packhouses and supplied in a

wide variety of pack sizes and grades to suit the customers.

The four growers managing the processed (chip) market believe they get a better average margin than for fresh. However, the quality specifications insisted on by the processors are not for the faint hearted. Two varieties grown for processing in the Valley are Snowden and Atlantic.

There is room for expansion of the production area for the processed market but requirements are stable at present with around 15,000 tonnes grown of the estimated 24,000 tonne total potato production.

Growers are hoping that winter from June will last for just a fortnight and forecast rain holds off until after harvest.

Growers believe the Valley has a good future for potato growing due to a perfect climate for the commodity. However, an additional challenge for all potato growers, and growers of many other commodities in the Valley and elsewhere in the state, is the threat of fewer backpackers for future harvests with the backpacker tax due to be introduced from 1 January 2017. Backpacker labour is considered vital in the Valley.

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Victoria



News that Oakville Produce has recently been placed in voluntary administration has caused significant concern for the Victorian potato growers already struggling with significant levels of debt and tenuous profit margins.

AUSVEG VIC is calling on

both the State and Federal Governments to provide assistance to Victorian potato growers impacted.

In 2013-14 the average level of debt carried by Australian vegetable and potato farms was approximately \$609,000 with a cash to receipts ratio of 65 per cent during the same period.

AUSVEG VIC has received reports of growers being left hundreds of thousands of dollars out of pocket, which is

clearly unsustainable for many Victorian potato growers.

Given that both Mondello and now Oakville have faced similar fates, it is clear that there are structural issues within the Australian potato industry that must be addressed in the long-term. AUSVEG VIC is working closely with the national Peak Industry Body in an attempt to identify how this may be addressed.

However, in the short-term it

is clear that growers must be supported if the ongoing viability of the Victorian potato industry is to be assured.

Kurt Hermann

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Stu Jennings

G'day again!

Well the rain finally arrived here at Thorpdale after a summer when it was hard to come by, which made life a little challenging. I hope that the weather has been kind to you in your patch wherever you are.

Despite a tough growing season overall, we've managed some reasonable yields and good quality in some blocks. We've been growing a promising new

white-fleshed variety for the fresh market this year from the Elders seed range and pulled some good numbers from our first crop. The feedback from consumers has been great too and we will be putting more in the ground next time around.

As you will be aware we recently conducted our third YPP Facebook Photo Competition in conjunction with ADAMA, with the aim of further encouraging the YPP community to share our experiences. I'm pleased to say that Patrick Fox from Fox Farming, Margaret River, WA has won himself a trip to attend the National Horticulture Convention on the Gold Coast this month. ADAMA and AUSVEG have covered Patrick's flights, accommodation and full delegate pass so that he can experience this country's largest horticulture event,

which promises to be bigger and better than ever. Patrick and his partner Shannon have decided to take the star of the show, daughter Bayley (see photo collage opposite) and spend a few extra days on the Gold Coast to make the most of sunny Queensland – nice work Team Fox.

Thanks to everyone who shared their images – it's a great way of seeing what you are all up to and generating conversation. The theme of family and involvement by more than one generation of growers was prominent in many of the photos and highlights just how important family is in successful farming and maintaining a good work/life balance. Keep the pics and comments coming on Facebook. I really think it does make a difference. I think we will hit Patrick up for a report and plenty of pics from his Convention experience – seems only fair!

Thanks to ADAMA and AUSVEG for your continued support of the Young Potato People group! We certainly appreciate it!

Until next time – have a great Convention!

Stu

PS: I don't get a chance to win the Photo Comp but since I do get to pull this page together, I get to stick my photo here! How's the serenity?!



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Find us on Facebook

www.facebook.com/groups/youngpotatopeople/

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'Fifth generation Albany spud grower' - Chris Ayres



'Photo Bomb!' - Michael Smith



'Just another day at the office' - Jennifer Parker



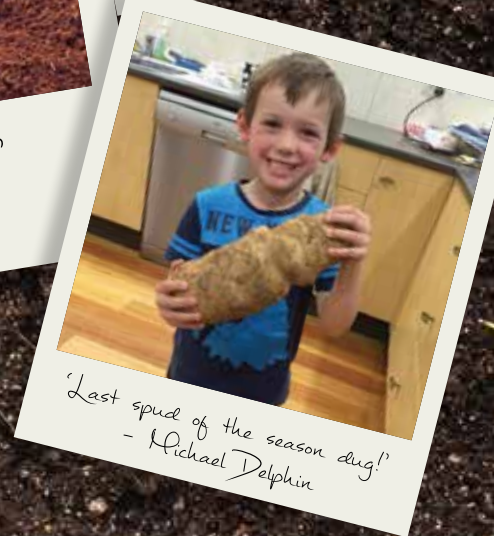
'Thumbs up from the boss' - Patrick Fox



'Three generations of Westcott Potato growers' - Kate Westcott



'Uphill battle' - Nicole Rose



'Last spud of the season dug!' - Michael Delphin

2016 YPP Photo Competition Finalists.

Adama Australia are pleased to support our potato industry. Partnering with AUSVEG and the Young Potato People are just two of the ways we hope that we are making a difference.

We believe that the fostering of community spirit and a sense of connection is as important today as it ever has been, so wherever possible get involved, take the leap and join in. You'll be surprised where it might take you.

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