

potatoes

australia

June/July 2013

Michael Delphin & Christie McLeod

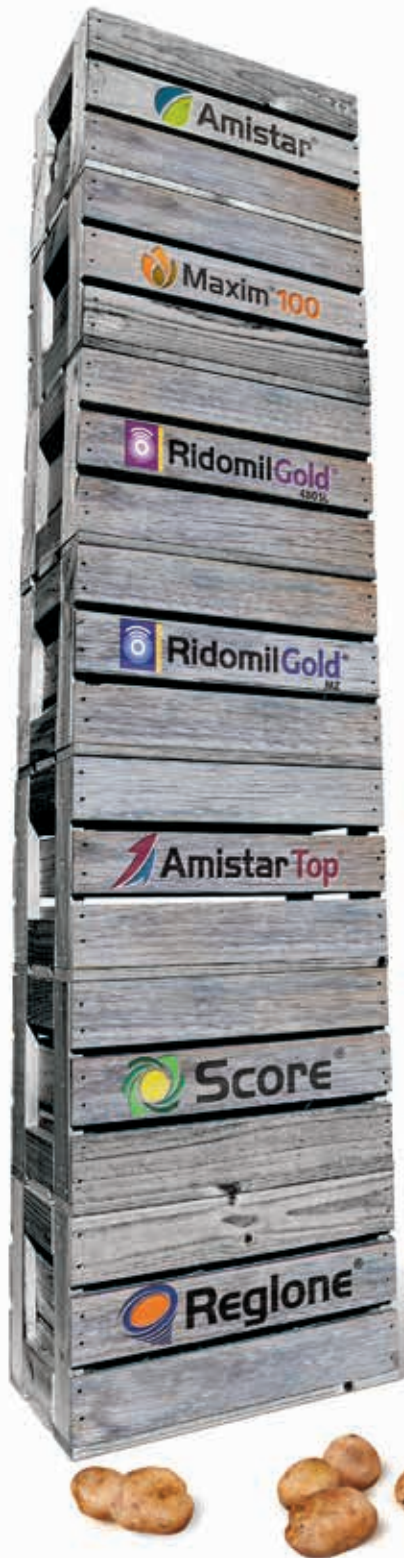
Young growers

Richard Mulcahy
Four years of growing
influence

Darren Long
R&D champion



Visit www.ausveg.com.au



The potato performers with stacks of benefits.

With Syngenta's wide range of potato products, you don't have to dig deep to find something that will suit your needs. Syngenta's potato range combines the latest technology with proven chemistry to create the ultimate crop management program, to help you deliver optimum output.

syngenta®



For further information please call the Syngenta Technical Product Advice Line on 1800 067 108 or visit our website at www.syngenta.com.au

The information contained in this document is believed to be accurate. No responsibility is accepted in respect of this information, save those non-excludable conditions implied by any Federal or State legislation or law of a Territory. © Registered trademark of a Syngenta Group Company. AD13/488 SYN0038/PA

Contents

June/July 2013

Regulars

- 5 Chairman & CEO messages
- 7 Editorial

Features

- 10 Michael Delphin & Christie McLeod: Q&A Young grower profile
- 26 Dean Bone: Staying positive
- 28 Richard Mulcahy: Four years of growing influence

Industry update

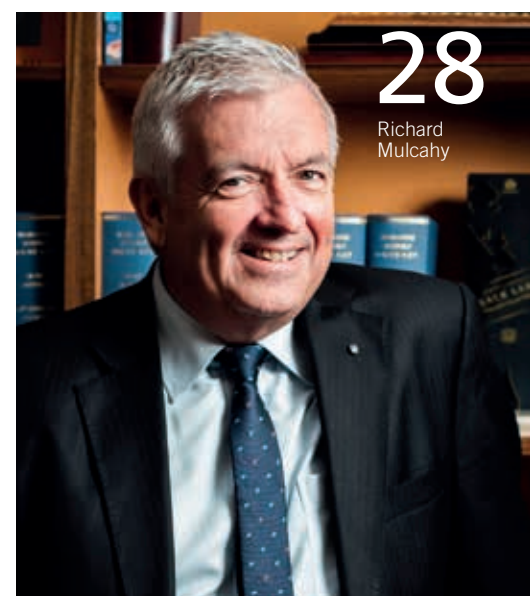
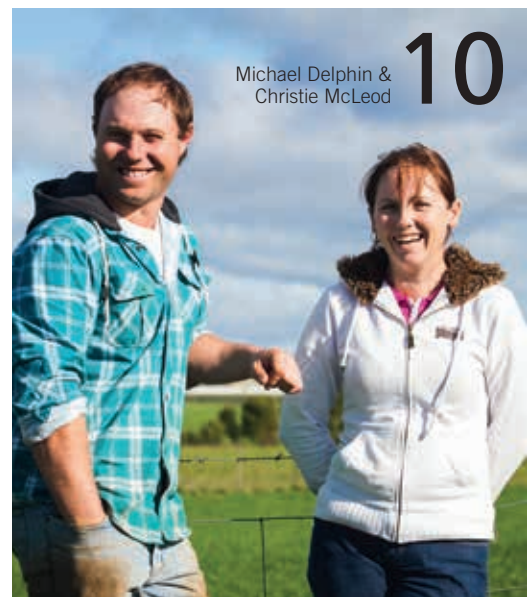
- 15 Soil solutions
- 38 Ask the industry

News

- 8 US food scientists bring the focus back to white vegetables
- 8 New US research shows resilience of highly destructive potato pest
- 12 The 2013 AUSVEG National Convention: Bigger than ever
- 19 Potato growers wave a spud-spangled banner
- 22 AUSVEG National Awards for Excellence

R&D

- 16 Potato Extension Program: Darren Long - R&D champion
- 20 New analysis techniques uncover the key to healthy soil
- 32 Richard Falloon: "The challenges of soil-borne diseases are still very great"
- 34 Monitoring Australian potato crops for psyllids
- 36 The young faces of training and education in the Australian potato industry (Part 2)



Your badge of protection from Late Blight and Sclerotinia



Emblem® fungicide provides potato growers with an important new tool to protect their crops from Late Blight and Sclerotinia.

- New group 29 chemistry for potatoes for resistance management
- Provides very high protectant activity on leaves, stems and tubers
- SC formulation compatible with early blight fungicides
- Can be used throughout the crop cycle
- Rainfast after 2 hours (up to 40mm of rain)
- Safe to all varieties of potatoes
- IPM friendly



www.cropcare.com.au





John Brent
AUSVEG Chairman

The huge success of the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence was yet another indication of what our industry is capable of, and I could not be more proud of the efforts of the AUSVEG team in organising such a tremendously successful event.

A highlight of the Convention was the Awards for Excellence Gala Dinner, held on Saturday 1 June. Attendees of the Gala Dinner enjoyed speeches by Senators Joe Ludwig, Christine Milne, John Madigan, and Ian Macdonald, and recipients of the Awards for Excellence. A death-defying acrobatic display was provided by Aerial Angels Entertainment Australia, whilst guests enjoyed dessert.

Following the Convention, also held at Jupiters Gold Coast, was the Fresh Potato Industry Advisory Committee (IAC) Meeting, where Committee members discussed new project ideas to best meet the objectives outlined in the new Fresh Potato Strategic Investment Plan (SIP). A number of new research and development (R&D) projects were discussed for endorsement and presented to the Committee by consultants, Dr Doris Blaesing and Dr Denis White.

There is much to be excited about for workers in the Australian potato industry at the moment, but we are not without our challenges. Potato and vegetable processing is currently struggling in Australia for a number of key reasons. Rising import, electricity and transport costs are hurting the horticulture industry severely, yet it is still more expensive to process food in Australia than to

import it from overseas.

This has been manifested in threats by Simplot this month to close down two of their plants due to unsatisfactory financial returns. We at AUSVEG are calling on the Government to provide greater assistance to the industry in order to maintain food security in Australia. According to research undertaken by AUSVEG, the majority of Australian consumers would prefer to pay a bit extra for their food if they know it is locally produced.

We continue to push for legislative change with regard to Country of Origin Labelling. It is our contention that consumers are continuing to be misled by current labelling practices, which fail to make it clear to consumers what is and what is not Australian produce.

John Brent
Chairman
AUSVEG



Richard Mulcahy
AUSVEG Chief Executive Officer

It is with great pride that AUSVEG reflects on the tremendous success of the 2013 AUSVEG National Convention, held in late May/early June at Jupiters Gold Coast. The Convention provided members of the Australian vegetable and potato industries with a valuable opportunity to reflect on the biggest success stories of the past year, investigate the latest in agricultural technology from around the world, and to discuss the most important issues currently facing our industry.

This year's Convention was the biggest AUSVEG has ever held, welcoming approximately 1,100 Australian and international delegates from diverse areas of the broader industry. Attendees were treated to a series of informative, varied presentations from leading Australian and international researchers, businesspersons, politicians and other figures of note.

Attendees of the National Convention were also given the opportunity to network at social events, including themed dinners, a go-kart rally and a harbour cruise. More details of the Convention, including the award winners announced at the AUSVEG National Awards for Excellence Gala Dinner, can be found in this magazine.

Also held in conjunction with the Convention at Jupiters Gold Coast on Saturday 1 June was the Annual Potato Levy Payers' Meeting. At the meeting, Australian potato growers received a comprehensive update from AUSVEG and Horticulture Australia Limited on the current state of the potato industry and were given

the opportunity to address any concerns within both the fresh and processing potato sectors.

Ongoing education within the Australian horticulture industry is paramount for the future competitiveness of the industry. AUSVEG seeks to provide new information to the industry in a variety of ways, from seminars such as those delivered at the Convention, to a range of international grower study tours. Potato grower, Dean Bone, who participated in an international grower tour last year, is featured in this edition of *Potatoes Australia*. During the tour, Dean was provided with the opportunity to enrich his knowledge of world-class growing and processing operations and establish valuable industry contacts both in Australia and abroad.

AUSVEG is currently preparing for the next international potato growers' study tour to be held in July/August of this year, in which growers will be taken to several key potato growing regions of the United States and Canada. This will undoubtedly be an invaluable experience for all participants.

Richard J Mulcahy
Chief Executive Officer
AUSVEG

AUSVEG Chairman

John Brent

AUSVEG CEO

Richard J Mulcahy

Communications ManagerWilliam Churchill
william.churchill@ausveg.com.au**Senior Writer/Journalist**William Gregory
william.gregory@ausveg.com.au**Writer/Journalist**Felicity Powell
felicity.powell@ausveg.com.au**Graphic Design**Nina Siciliano
nina.siciliano@ausveg.com.au**Editorial Enquiries**AUSVEG
Ph: (03) 9882 0277
Fax: (03) 9882 6722
info@ausveg.com.au**Advertising**Marc W. Wilson
Gypsy Media
Ph: (03) 9580 4997
Fax: (03) 9523 2270
M: 0419 107 143
marc@gypsymedia.com.au**Print**

Southern Colour Pty Ltd

Contributors

Karen Shaw



Horticulture Australia

All research and development projects are facilitated by HAL in partnership with AUSVEG, and in relation to processed potatoes also the PPAA, and are funded by the National Potato Levy and/or voluntary contributions from the industry. The Australian Government provides matching funding for all HAL's R&D activities. For further information visit:

www.ausveg.com.autwitter.com/ausveg

Potatoes Australia is produced by AUSVEG and is free for all National Potato Levy payers.

Disclaimer: AUSVEG makes this magazine available on the understanding that users exercise their own skill and care with respect to its use. Before relying on or altering any business practices, users should carefully evaluate the accuracy, completeness and relevance of the information for their purpose and should obtain appropriate professional advice relevant to their particular circumstances. This magazine contains views and recommendations that do not necessarily reflect those views of AUSVEG.

Special care should be taken with agricultural chemicals which may have been used experimentally but are not yet registered for commercial use. Clarification should be sought from the researchers or chemical manufacturers. *Potatoes Australia* reserves the right to use imagery across the publication which does not directly correlate with information displayed on the same page. Images used may be from a stock photo library and not taken on-site.

© Copyright AUSVEG Ltd and Horticulture Australia Ltd 2013

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior permission from AUSVEG. Requests and inquiries concerning reproduction and rights should be addressed to AUSVEG at:

PO Box 138, Camberwell, Vic, 3124

ISSN 1834-2493

**FRONT COVER:**Michael Delphin &
Christie McLeod

Photograph by Brandon Rooney

Editorial

16

Darren Long



26

Dean Bone



The biggest news in Australian horticulture is the tremendous success of the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence. Held early this month at Jupiters Gold Coast, the Convention provided members of the Australian horticulture industry with the opportunity to recognise and celebrate the achievements that have been made over the past 12 months. This edition of *Potatoes Australia* features a wrap-up of the event (page 12), and details the recipients of the Awards for Excellence (page 22).

The cover of this edition features a photograph of young potato growers, Christie McLeod and Michael Delphin, with their son on their property in Moriarty, Tasmania. In Young Grower Q&A (page 10), Christie and Michael

discuss the innovative way in which they have employed new media to help growers network amongst each other and with others associated with the industry.

This edition of *Potatoes Australia* also profiles Victorian seed potato grower, Dean Bone. In the article, Dean discusses the challenges he faces as a grower, as well as his participation in the 2012 Potato Growers' Study Tour to Belgium and Scotland (page 26).

Also featured is AUSVEG CEO of four years, Richard Mulcahy (page 28). Mr Mulcahy describes the challenges he has faced in his role, and some of the greatest achievements that have been made by the organisation over the last four years.

The Potato Industry Extension Program column in this

edition profiles Tasmanian fresh market potato grower, Darren Long, whose dedication to the employment of new research and development in his operation has seen his business grow and efficiency increase continuously. Mr Long champions the benefits that R&D adoption can deliver (page 16).

The June/July 2013 edition of *Potatoes Australia* also features some exciting R&D updates, including an investigation into native psyllid populations in eastern Australia, for the broader purpose of monitoring for potential Tomato-potato psyllid (TPP) incursions (page 34).

New Zealand plant pathologist, Professor Richard Falloon, also talks about his research into soil-borne diseases in potatoes, the benefits of

international collaboration in scientific research, and how he envisages the future of potato industry research and development (page 32).

We also highlight the work of Canadian researcher, George Lazarovits, into soil-borne bacteria in the International R&D Update (page 20). Dr Lazarovits discusses the paper he produced last year which was awarded the Paper of the Year prize by the American Journal of Potato Research for 2012.

To follow on from our University of Melbourne PhD student profiles that featured in the previous edition of *Potatoes Australia*, for this edition, we speak to a number of PhD students from the University of Tasmania about their research activities (page 36).

The industry needs your help! Now is the chance to have your say.

Fresh potato levy payers from Victoria and New South Wales who have an interest in serving on the Fresh Potato Industry Advisory Committee (IAC) are invited to register their interest with AUSVEG now.

The role of the IAC is:

- To represent fresh potato levy payers by acting as the final Advising Group to Horticulture Australia Limited (HAL) in recommending the investment of industry R&D levy and matching Australian Government funds.
- To assess the relative return to growers from investing in one area over another, and determine a weighting of significance for each strategy based on chance of success, value of return to growers, relative cost, and significance to the industry as a whole.

Requirements for appointees:

- IAC Members must be levy payers or could be a senior employee with a levy payer and must reside in Victoria or New South Wales.
- A knowledge and commitment to horticultural industry issues and R&D work is essential.
- For IAC Members an ability to participate in bi-annual one-hour teleconferences to discuss R&D proposals and to attend face-to-face meetings on three occasions each year.
- Must be capable of reading and reviewing R&D project proposals.

- Preference will be given to those applicants demonstrating involvement with established industry networks that provide linkages with other growers of their product at state or national level.

Individuals who wish to be considered for appointment should enclose their curriculum vitae and any other information demonstrating the ability to undertake the role and write to:

Expressions of Interest – Fresh Potato IAC.

C/- AUSVEG Limited
PO Box 138
Camberwell VIC 3124
OR email richard.mulcahy@ausveg.com.au (CEO of AUSVEG)
... by no later than 15 July 2013.

All applications will be treated as confidential to AUSVEG and HAL. Nominees may expect to be interviewed.

US food scientists bring the focus back to white vegetables

White vegetables such as potatoes are often overlooked as sources of key nutrients, according to leading US food and nutrition scientists who spoke at a recent meeting for the American Society for Nutrition.

White vegetables are an excellent source of potassium and dietary fibre, both of which are critical to good health. Much of the world's population does not consume sufficient quantities of these nutrients.

Tufts University Professor

and meeting co-chair, Johanna Dwyer, noted that while there is a promising amount of nutrition research currently underway in the potato industry about the health benefits of eating white vegetables, more research is needed.

She said that there are data gaps with regard to how we look at the whole group of white vegetables and the contributions they make towards total intake of nutrients and positive health outcomes.

As a result, Ms Dwyer believes

more research outcomes are needed, and food and nutrition scientists need to look at the area more closely.

The meeting highlighted emerging research and development projects and innovations that enhance the nutritional impact of white vegetables, especially the potato, in a healthy, well-balanced diet.

Several US-based food and nutrition scientists made presentations at the meeting on a variety of topics, from

reviews of innovations in food chemistry and processing that enhance the nutrient profile of white potatoes, to an historical account of how nutrient and food recommendations are translated into dietary guidance.

The meeting was sponsored by the Alliance for Potato Research and Education (APRE), a not-for-profit organisation dedicated to translating potato research into policy and education initiatives, based in the US.

New US research shows resilience of highly destructive potato pest

Researchers in the United States have found that the Tomato-potato psyllid (TPP) – a highly destructive pest that affects potato crops – can survive much harsher climate conditions than was previously known.

Conducted by the Idaho, Washington State and Oregon Potato Commissions, the research found that despite the extremely cold temperatures experienced in north-west America's key potato growing regions, the TPP did not die out during the winter months of 2012-13.

A small, flying insect, which is highly destructive to potato plants in its own right, the Tomato-potato psyllid is also known to harbour the bacterium, *Liberibacter*, which commonly causes Zebra Chip disease. The disease renders potatoes unsellable by causing striped bands in the flesh of affected tubers that blacken when cooked.

The pest and its associated disease have caused catastrophic losses to the potato industries of both North America and New Zealand, but are not yet found in Australia.

AUSVEG spokesperson, Luke Raggatt, who coordinates the Potato Industry Extension Program, said that the research proves how resilient the pest can be.

"These findings from the US reaffirm how critical the research and development work that is being conducted on the TPP within the Australian potato industry continues to be for growers and processors alike," said Mr Raggatt.

"It is critical that the Australian potato industry remains vigilant to ensure that it can swiftly and effectively identify a potential outbreak of the Tomato-potato psyllid."

"While Australia is currently free from the psyllid, there is a real possibility of the pest entering our shores through



a number of different means, including the transit of plant materials arriving from affected countries such as the US or New Zealand," he said.

In Australia, the Tasmanian Institute of Agriculture (TIA) is currently conducting a project which is monitoring the distribution and prevalence of native psyllid populations in key potato growing areas of the eastern states. The study aims to provide industry with an effective early warning system for a potential incursion of the Tomato-potato psyllid.

Other Australian projects into TPP have included an investigation into the role of psyllids as vectors of disease; raising the awareness of Zebra Chip disease within the industry; developing rapid diagnostic tools for the detection of pathogens associated with Zebra Chip; and

Integrated Pest Management (IPM) strategies that would help to control the psyllid.

"In the last few years, the Australian potato industry has invested heavily in a range of research and development projects in an attempt to ensure that potato growers and processors are in a position to deal with this devastating pest and its associated disease, should it arrive here in the future," said Mr Raggatt.

"Research findings from the United States, Australia, New Zealand and elsewhere, have all re-enforced how much there is still to learn about the behaviour of the TPP and the spread of the destructive disease that it harbours."

Image courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org.

The world's leading fungicide.



For Australian potato growers, AMISTAR is the proven,
reliable, consistent, high quality performer.
Why wouldn't you choose the best for your potato crop?



syngenta[®]



For further information please call the Syngenta Technical Product Advice Line on 1800 067 108
or visit our website at www.syngenta.com.au

The information contained in this document is believed to be accurate. No responsibility is accepted in respect of this information, save those non-excludable conditions implied by any Federal or State legislation or law of a Territory. © Registered trademark of a Syngenta Group Company. AD13/489 SYN0031/PA.

TM

Q&A Young grower profile

Names: Michael Delphin & Christie McLeod

Age: 28 & 32

Location of farm: Moriarty, Tasmania

Work/Title: Grower/Farm manager

Grows: McCain's mac1 Potatoes



Moriarty, TAS





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

Christie: We share-farm with the neighbour and he has been involved for many years, and that's how we became involved.

What are your roles in the business?

Michael: I guess I'm the manual labour - the work side of things. Christie organises all the accounts and that sort of stuff and I take care of the outside.

Can you describe your average day at work?

Christie: There are lots of different things that we do, because we both have off-farm incomes as well. Sometimes I'm teaching and sometimes I'm doing our book work and making sure the bills are paid, and looking after our son as well. So yeah, they're probably my most active days.

Michael: Well generally, I suppose, of a morning I have a run around the farm. From Monday to Thursday, I work for

the local John Deere dealer as a mechanic, and then Friday, Saturday, Sunday are generally farm days for me. I do whatever needs to be done.

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

Michael: I suppose there's a pretty good network of people around to give us a hand and that sort of stuff, but I suppose we also just enjoy growing them.

What are the biggest challenges that you face as growers?

Christie: Making money really, I think, because our input costs are getting higher, and the price we're getting for the product at the end is getting lower.

Michael: Yeah, that's the biggest test of all.

What is Harvest Link Tasmania and what are your primary goals for it?

Christie: We created Harvest Link Tasmania and came up



with the idea last November. It was really because we planted some pumpkins over in a patch where our poppies didn't strike, and because we're new in the industry, we don't have a lot of contacts for selling our produce, so it was really an idea to create a space for an online market for Tasmania. [It's] a bit like a Vic Market but something online because we have Bass Strait also to contend with and we're all quite spread out across Tassie, so [we thought] if we had something online it'd be easier for people to access us too. And then from there, it grew to something that also now includes food and beverage producers - so value adds - and agri-tourism, and a space for farmers and everyone through the food chain to connect and interact as well.

What do you see as the biggest threats to the Australian potato industry?

Michael: I guess the ongoing price-cuts to compete with all the other imports and that sort of stuff are the biggest challenges that everybody has to deal with. So yeah, just cost-cutting to try and get the best out of what you're doing.

How do you think more young people could be encouraged to take up jobs in horticulture?

Christie: I think we need to make the industry more

accessible, because farmers, by nature, work in their own little space, and it's really hard to get access to the people with the knowledge that you're looking for at the time. And that's also what Harvest Link is about: trying to make a connection in the industry so that the people of our generation who use the Internet - and that's where we go, that's our first stop when we're looking for information - can access the people that we need, at the time that we need them. So I think that would be a really good first step to improving young people's access to our market, to our industry.

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

Michael: I'm a diesel mechanic so I work for John Deere actually, in Latrobe.

Christie: We're also growing onions and poppies and cattle.

Where do you see yourselves in five years?

Christie: Hopefully full-time farming! That's the main goal, to eventually be able to afford to work on the farm full-time.

Michael: At the moment, since we're fairly new to the industry, it's good to have a bit of a back-up, a weekly wage, while we're learning and sort-of feeling our way. But yeah, eventually that'd be good. We'll see how we go.



Photographs by Brandon Rooney.



The Hon Dr John McVeigh, Queensland Minister for Agriculture, Fisheries and Forestry with Councillor John Brent, Chairman of AUSVEG.

The 2013 AUSVEG National Convention: Bigger than ever

APPROXIMATELY 1,100 DELEGATES FROM AROUND AUSTRALIA AND THE WORLD ATTENDED THE 2013 AUSVEG NATIONAL CONVENTION, TRADE SHOW AND AWARDS FOR EXCELLENCE, MAKING IT THE BIGGEST OF ITS KIND EVER HELD BY AUSVEG.

THURSDAY - 30 May 2013

The highly anticipated 2013 AUSVEG National Convention, Trade Show and Awards for Excellence kicked off with an evening of entertainment at Jupiters Gold Coast. Delegates were welcomed by AUSVEG Chairman, John Brent, and prominent Australian media identity and Master of Ceremonies, Mr Mike Jeffreys. The Welcome Reception not only marked the opening of the Convention, but also gave attendees the valuable opportunity to begin networking

with their peers and get a taste of what was to be a weekend of inspirational ideas and valuable insights.

The Trade Show was officially opened on the Thursday night, allowing delegates to preview the nearly 70 stalls and booths that were to be on display over the coming days.

FRIDAY - 31 May 2013

Returning to the AUSVEG National Convention after a successful debut in 2012, the Agribusiness Leaders Breakfast featured speakers from a number of leading

multinational companies, coming together to discuss some of the most prominent issues facing Australian horticulture. Delegates were given the opportunity to hear insights into the industry from representatives from some of the country's leading agribusinesses.

The panel featured speeches by Syngenta's Paul Luxton, Elders' Mark Geraghty, Bayer's Dr Jacqueline Applegate, and Jeremy Cocks, who represented DuPont.

Delegates had the opportunity to interact with the panel in a question and answer format, making it one of the

most engaging events of the Convention.

AUSVEG Chairman, John Brent, also spoke about the importance of continuing to change our way of thinking, at a time when the Australian horticulture industry is as exciting as it is volatile.

Liberal Senator for Tasmania, the Hon Richard Colbeck, also addressed the Convention. He spoke about the 2005 tractor rally, which travelled from Tasmania to Parliament House in Canberra, and saw the birth of a national campaign against cheap imports and misleading Country of Origin Labelling.

One of the Convention's most

anticipated appearances was that of Pam Hawkes, a former Victorian potato grower and co-owner of champion racehorse, Black Caviar. Ms Hawkes talked about her incredible journey travelling with Black Caviar across Australia and the world, with her highlight being the day she met Queen Elizabeth II at Royal Ascot in England.

Ms Hawkes was just one of many inspirational speakers to appear at the Convention. The speaker line-up also included the University of Sydney's Professor Salah Sukkarieh, who spoke about the fascinating future of field robotics; Bayer CropScience's Denise Manker from the United States, who looked at the relationship between science and nature; Bob Mullins, also from the United States and representing Syngenta, who spoke about marketing products and solutions for vegetable growers and consumers; and Meat & Livestock Australia's Peter Barnard, whose rousing address to delegates showed how the vegetable industry can learn from the successes of the meat industry's foray into exports.

In the evening, guests were invited to enter the enchanting world of Casablanca at "Rick's Café". They were treated to a night of exquisite cuisine and spectacular surrounds in the midst of a Moroccan paradise.

SATURDAY - 1 June 2013

Another entertaining breakfast event left delegates with no doubt that the closing day of the Convention was going to be one to remember.

Respected veteran political journalists, Steve Lewis and Chris Uhlmann, hosted the Saturday Morning Breakfast, captivating the large audience by talking about the inspiration for their book: a political thriller entitled *The Marmalade Files*.

The Saturday speaker sessions program boasted yet another diverse line-up of speakers. DLA Piper Australia Special Counsel, Tass Angelopolous, discussed the pitfalls and processes of unfair dismissals, and James Bond, Chief Economist at the Financial Services Council, spoke about the changing global and Australian economies.

Mr Bond was followed by AUSVEG CEO, Richard Mulcahy, who reflected on the shocking

trend of closures of local food processing operations over the last 18 months, and the current threat of foreign vegetable imports flooding our shores. Mr Mulcahy's address was followed by a presentation by Dr Roger P. Hellens from Plant & Food Research in New Zealand. Dr Hellens discussed the application of genetics and genomics to new cultivar management.

The Food Industry Security



Panel provided a valuable platform for discussion about the food industry in Australia, current trade agreements and the importance of biosecurity to our industry. Independent Senator for South Australia, Nick Xenophon, biosecurity expert, Dr Kevin Clayton-Greene, international trade expert, Arthur Vlahonasios and agriculturalist, Ruth Armstrong,



Captions: Clockwise from top: AUSVEG National Awards for Excellence Gala Dinner; AUSVEG CEO, Richard Mulcahy and Senator Nick Xenophon; Leader of the Australian Greens, Senator Christine Milne; MasterChef All Stars Winner, Callum Hann, presenting at the Reverse Trade Mission; Aerial Angels; Renowned Tokyo chefs, Junichi Miyazono and Tamaki Koichi at The Reverse Trade Mission; Journalists, Steve Lewis and Chris Uhlmann, signing copies of *The Marmalade Files*.





AUSVEG Chairman, John Brent, and Coles General Manager Corporate Affairs, Robert Hadler.

provided a wealth of knowledge on the topic and plenty of food for thought.

The Great Debate finished off the morning. Chaired by ABC journalist, Chris Uhlmann, the debate discussed a variety of scientific and ethical arguments surrounding the polarising topic of Genetic Modification (GM). The four speakers argued the case for and against the potential impact of GM on

Australia's horticulture industry, biosecurity and human health.

As the last day of the Convention drew to a close, the youngest attendees of the Convention jumped in their go-karts for an afternoon on the race track. And over on the Gold Coast's picturesque Broadwater, the Convention's annual Women in Horticulture event set sail. The event highlighted the important role that women play

within the industry, and gave delegates the opportunity to network with other women in horticulture. Liberal Senator for South Australia, Anne Ruston, spoke about the importance of recognising the vital contributions that women make in the Australian horticulture industry, and her background as a former commercial rose-grower and small business owner in the Riverland district.

Soon it was time for the Convention to draw to a close. The Pavilion Gallery quickly filled with delegates, giving them the chance to rub shoulders at the Convention's highlight event: the AUSVEG National Awards for Excellence Gala Dinner, which was attended by nearly 600 people.

In total, 13 awards were presented on the night, which featured acrobatic entertainment from the talented Aerial Angels and speeches from key political figures and industry participants.

The potato industry was well represented in the Awards. Thorpdale seed potato grower, Stuart Jennings, won the Rising Star of the Year Award, and Dr Kathy Ophel Keller from SARDI was named Researcher of the Year for her important work in APRP2.

AUSVEG would like to thank its leading Strategic Partners for their support, as well as our many other partners, which made this spectacular event possible. No levy funds contributed to the funding of the 2013 AUSVEG National Convention.

We know Horticulture



Talk to your CRT Local Bloke about how to provide effective control over pests on your vegetable crop.

Give your crops the best chance to reach their full potential with quality insecticides like Success™ NEO. Success NEO Insecticide contains a new active ingredient, spinetoram, providing long-lasting effective control over pests of root and tuber vegetables.

Product	Success™ NEO	Belt®	Coragen®	ViVus® Gold
Active ingredient	Spinetoram	Flubendiamide	Chlorantraniliprole	Polyhedrovirus
Chemical Group	Spinosyns (Group 5)	Diamides (Group 28)		Unspecified
Labelled pests:				
Potato moth	✓	✓	✓	✗
Helicoverpa (Heliothis/budworm)	✓	✓	✓	✓
Loopers	✓	✗	✗	✗
Light brown apple moth	✓	✗	✗	✗
Approved for other root and tuber crops?	Beetroot, carrots, celeriac, Galangal, parsnips, radishes, daikon, sweet potatoes, swedes and turnips	None	None	None



Talk to your CRT Local Bloke or email hortifocus@ruralco.com.au and find out how Success NEO can benefit you.



Dow AgroSciences © Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.



There's always better value at CRT.
www.crt.com.au



with Andrew Olley

Controlled Release Fertilisers

IMPACT FERTILISERS' NATIONAL SERVICES MANAGER, ANDREW OLLEY, DISCUSSES THE BENEFITS OF CONTROLLED RELEASE FERTILISERS IN COMMERCIAL AGRICULTURE

Potato growers in Australia have refined their crop nutrient delivery strategies over time using granular and soluble fertilisers. This has been required to maximise the efficiency of nutrient applied, and, importantly, the yield and quality of potato crops grown.

Strategies in potato crops such as splitting applications and fertigation of solubles have been useful, but not entirely satisfactory. Large applications of nitrogen (N) and potassium (K) are often applied at planting and are prone to losses. The efficiency of nutrient uptake into the potato crop can be poor due to loss mechanisms in the field, such as leaching, denitrification (gaseous loss of root-zone nitrogen) and volatilisation (gaseous loss of surface-applied nitrogen). Extra nutrient must be applied to counteract these losses, with the high cost of labour and nutrients

compounding the problem.

Slow release fertilisers have been available in amenity horticulture, such as nurseries and turf, for decades. Growers' returns in these industries have allowed the use of exotic polymers to provide nutrient that releases over time. These products are expensive due to the cost of manufacture and high-quality fertiliser base products that are utilised. Another factor limiting their introduction into commercial horticulture is that many are fixed N: P (phosphorus): K: S (sulphur) blends, requiring a multitude of products to meet a grower's requirements. A further downside is that these products are highly dependent on soil temperatures, and hence release rates change dramatically depending on when the crop is grown.

Recently, controlled release products from commercial agriculture in the Americas have become available at a cost that makes them viable in Australian horticulture. They are known as "controlled release" due to the fact that soil temperature does not greatly affect the release rate. Importantly, they are base nitrogen and potassium granules and hence can be easily blended into existing programs, replacing a component of conventional nutrient application.

Controlled release fertilisers allow a

portion of the nitrogen and/or potassium to be applied at planting and have the ability to replace sidedressing/fertigation for periods of up to 3 months. These controlled release programs are providing nutrient programs, similar to the fine tuning that is available from hydroponics.

Potato crops benefit particularly from small, daily doses of nutrient. Disorders such as poor calcium uptake are not as prevalent in the plant tissue compared to slug doses of ammonium and nitrates from sidedressing and fertigation applications. Specific gravity increase of tubers has been experienced where controlled released fertilisers have been utilised.

Environmental benefits also are very real, with a reduction of nutrient movement off the field, resulting in less impact on community waterways.

The future is bright for controlled release fertilisers because they can greatly improve fertiliser-use efficiency in horticulture.

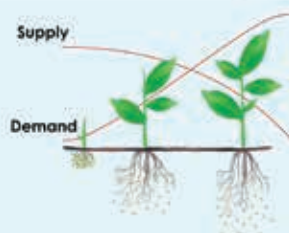
Agrocote® is a controlled release fertiliser available from Impact Fertilisers.

Q

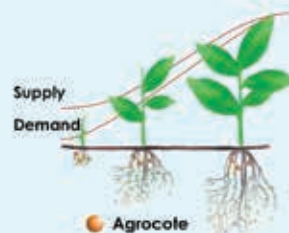
Please send your soil nutrition questions to *Potatoes Australia*.
Email: info@ausveg.com.au
Phone: (03) 9882 0277

Nutrient release aligned with the demand of plants

Traditional Fertilisers



Agrocote Application



With Agrocote, the supply of nutrients matches the demand of the plants to give both optimal growth and nutrient efficiency

Potato Extension Program



Darren Long: R&D champion

DARREN LONG SPEAKS TO *POTATOES AUSTRALIA* ABOUT HIS DECADE-LONG PURSUIT OF POTATO R&D.

Tasmanian potato grower, Darren Long, has a bold vision for the future of his business. Operating on the philosophy, “farming for a future”, MG Produce is a family-based fresh market enterprise located in Sheffield in north-west Tasmania. For more than a decade, MG Produce has trialled a range of emerging, sometimes unconventional farming methods and tools in an effort to boost crop yields, reduce cropping rotations and produce the highest-quality potatoes.

“We aim to be the best at what we do,” says Darren, “not the biggest.”

Cutting his teeth in the walnut industry in the early 1990s, where he undertook a five-year apprenticeship in horticulture, Darren has since worked to continually better his own potato and vegetable producing operations. As a “hands-on” farm manager, where he oversees every aspect of his business - from seed production through to harvesting - Darren’s commitment to on-farm innovation has been pivotal in steering MG Produce in a profitable direction. Importantly, it has helped his business push

through some of the enormous challenges that are now banging on the door of most growers in the broader horticulture sector.

“Every grower, regardless of their crop, faces very similar challenges,” he says. “Inputs required such as water, electricity and fertilisers continue to rise in costs, and such rises are not reflected in the price paid for the end product.”

Experimenting with potato R&D on farm has helped MG Produce overcome some of these hurdles and achieve the success that it now enjoys. Darren has pursued an extensive potato-breeding program, for instance, which has successfully developed two main varieties (marketed as ‘Moonlight’ and ‘Tasmanian Cream Delight’), and the business is currently focusing on three new lines that are close to commercial release.

MG Produce has also been involved in the use of bio-fumigation: an environmentally-friendly system in which plant (i.e. natural) chemicals are used to fight soil-borne diseases. Through a combination of the new potato varieties that it has developed to suit their

climate and “exceed customer expectations”, along with the use of bio-fumigation, MG Produce has seen very positive results, including a marked reduction in crop rotations.

“Our thought process has been to find and develop a sustainable way to grow potatoes and to control diseases with the use of resistant and minimal input varieties,” says Darren. “This has been our focus for the past 10 years and was the main reason for ceasing to grow other crops and concentrating purely on potato production on our property.”

Bio-fumigation harnesses the natural chemical agents of brassicas in particular, to suppress weeds, fungal pathogens and insects. The system uses brassicas with high glucosinolates, grown as a green manure crop, which are then incorporated into the soil.

“We have developed and trialled many varieties from all over the world and now have been able to successfully grow and understand the variety, Calienta,” says Darren. “This is a quick-growing brassica with high bio-mass and, most importantly, has a large tap root supported by a large mass of fibrous roots. Calienta has the highest glucosinolates release currently tested.”

Darren first learned about bio-fumigation research trials in Western Australia 14 years ago. Using data obtained in these trials as a starting point, he then undertook a series of trials with specific varieties on his own property. MG Produce has since been using bio-fumigation both pre and post-planting, with the aim of suppressing potato diseases such as Powdery scab and Rhizoctonia. And through this driven focus, MG Produce

“Growers need to be constantly challenging their own way of thinking and embracing changes that will bring long-term benefits.”

- Darren Long.



continued over page ►



has been able to concentrate heavily on soil health, water and nutrition, crop rotations, potato quality and end-use suitability.

“Currently, we are on a successful three-year rotation, and with the use of bio-fumigation, together with the varieties we have developed and closely-monitored checks for water and nutrition, we have not needed to use fungicide or insecticide for the last 12 years,” he says. “In the last four years we have also been able to stop the use of seed treatment.”

The results MG Produce has achieved through its on-farm innovations and field trials are now also having a flow-on effect, with members of both the Australian and international potato industries queuing up to learn about the farming techniques that Darren and his colleagues have been employing.

“I was fortunate enough to attend and present at the Biofumigation Symposium in Canberra, which was attended by delegates from around the globe,” he says.

“First hand, I was able to gain knowledge on the use

of brassica crops to control diseases from strawberries to tomatoes, and international delegates provided a wealth of knowledge to steer us onto the right path regarding suitable brassica varieties and incorporation methods,” he says.

MG Produce has also hosted a number of field-day events to educate local and interstate growers on the successes of these trials, and Darren recently spoke about bio-fumigation at a potato R&D field day, arranged by the AUSVEG Potato Industry Extension Program in Sassafras, Tasmania.

Despite the successes of implementing a slew of potato R&D outcomes in his operation, Darren and his colleagues are acutely aware that being innovative on-farm cannot be a one-off activity. If the business is to continue tackling the many challenges facing the industry as well as it has, then the pursuit of emerging R&D information must be ongoing.

“As with any area, we are constantly researching and seeking and sharing knowledge to allow us to continue to

develop,” he says. “We are responsible for the entire operation - from soil preparation through to delivery to the distribution centre – [so] any reduction in costs, [such as] through reduced chemical applications, is obviously

financially beneficial.”

As a champion of potato R&D adoption, Darren strongly encourages other potato growers to experiment with new farming practices that are likely to pay dividends further down the track.

“Trials within your property are the only way to get results specific to your situation. Growers need to be constantly challenging their own way of thinking and embracing changes that will bring long-term benefits,” he says.

“You need to be prepared to set goals and remain focused on them in the long-term, rather than anticipate instant results.”

“Seek advice from field officers and other farmers who have already implemented the changes you are considering and be prepared to spend time researching. There is great personal reward in knowing that you are nurturing the land for future generations.”

Biofumigation in potato crops

- Biofumigation has been effectively used both internationally and in Australia, to reduce cropping rotations and boost yields.
- Mustard green manures, such as Caliente, are providing promising alternatives to synthetic chemical fumigants.
- Biofumigation is an environmentally-friendly approach in which plant (natural) chemicals are used to fight soil-borne diseases. In many instances, results have shown to increase marketable tuber yields.
- Brassica varieties with high levels of natural chemical agents (glucosinolates) are used to promote soil health and fight diseases when they're sown, grown and ploughed in as a green manure to the soil. Mustard cover crops can be grown in-field prior to the crop and then tilled into the soil to achieve biofumigation.
- Using biofumigation increases soil health and structure, with minimal tillage required, and can help to establish a more sustainable system.
- With the right potato varieties and management plan, biofumigation can help tackle some of the most troublesome potato diseases, including Rhizoctonia, Powdery scab and Common scab.
- Using biofumigation requires a “whole farm management plan”. Growers should be aware that the broad-spectrum toxicity of mustard biofumigants may have an adverse impact on non-target beneficials, such as biological control agents, which could complicate the integration of cultural and biological control. To successfully replace synthetic fumigants with biofumigation, growers should combine a number of management strategies that work effectively together.



For further information on upcoming Potato Extension events, please contact AUSVEG.
Phone: (03) 9882 0277
Email: info@ausveg.com.au
Project: PT11004

Potato growers wave a spud-spangled banner

It's not often that an Aussie potato grower gets the chance to park the harvester, kick off their Blundstones and set their sights on lands afar. This July, however, a group of nine potato levy payers will take a journey across the Pacific to learn how our North American brethren tackle potato production.

The 2013 Potato Growers' Study Tour will escape a Southern Hemisphere winter for ten days in July to explore potato-producing areas in the United States and Canada, visiting regions such as Idaho, New Brunswick and Quebec. Subsidised by the National Potato Levies, the tour is designed to provide growers with an alternative perspective on growing and processing operations to those in Australia, with an aim to extend knowledge gained on the road to the wider potato industry.

Nearly 34% of the United States' entire potato crop is produced in Idaho – an approximate 400,000 acres planted annually – while Canada's New Brunswick is the North American home of *pommes frites*, or French fries. Both regions will therefore be extremely valuable destinations for Australian potato levy payers to visit in order to broaden their understanding of international



potato production.

While foreign on-farm practices are one particular focus of the tour, the extensive range of potato research and development activities that are undertaken in North America will certainly not be overlooked. A highlight of the trip will include a visit to the Potato Association of America (PAA)

annual conference in Quebec City, Canada, where attendees will receive presentations on cutting-edge R&D at a one-day Symposium on bacterial diseases.

Industry study tours such as this are planned and implemented directly by AUSVEG, ensuring that levy payers attending are provided with a tailored and personal experience. Returning attendees have routinely described these kinds of study tours as the “best value” return for their levy.

One of the most significant fruitions of these tours was the foundation of Young Potato People (YPP), a diverse online community of young potato growers. Profiled in the April/ May 2013 edition of *Potatoes Australia*, Thorpdale grower, Stuart Jennings, first created the YPP website after returning from the 2012 tour to Belgium and the World Potato Congress



in Scotland. Today, the group's members share their diverse knowledge and experiences with one another, and even conduct expeditions to local potato operations.

International study tours have proven to be beneficial initiatives that impart industry members with the know-how needed to address many of the current and future challenges facing the industry. Most importantly, group travel establishes both professional and social networks that endure for life.

With the hope of providing attendees with a renewed perspective on their own operations, AUSVEG will continue to highlight the benefits of industry study tours in the future.



The 2013 Potato Growers' Study Tour to the United States and Canada departs on Sunday 21 July. For further information, please contact AUSVEG. Phone: (03) 9882 0277 Email: info@ausveg.com.au Project: PT12704





New analysis techniques uncover the key to healthy soil

CANADIAN RESEARCHER, DR GEORGE LAZAROVITS' LATEST RESEARCH HAS UNCOVERED HOW LITTLE WE REALLY KNOW ABOUT THE MICROORGANISMS THAT LIVE IN THE ROOTS OF POTATOES. IN THE PROCESS, NEW INFORMATION HAS COME TO LIGHT ABOUT MICROBIAL COMMUNITIES ASSOCIATED WITH SOIL HEALTH.

Dr George Lazarovits' latest research paper was recently named "Paper of the Year" by the American Journal of Potato Research for 2012.

Dr Lazarovits and his research partners established a collaborative study with Dr Dean Hemmingsen at the Plant Biotechnology Institute in Saskatoon, Canada. In this study, they were able to identify the most common organisms that reside on potato roots grown in two different soils from two different Canadian provinces.

"The DNA we extracted

from soils and potato roots was amplified using a genetic marker that exists in all cells but is present only as a single copy. In this way, one copy meant we had one cell and thus we could tentatively identify the organism," Dr Lazarovits says. "At the same time, we could also identify how many times it was detected, and this provided some information as to relative populations in the ecosystem being tested."

"Unfortunately, thus far, only a few soil-borne bacteria have their genetic identities logged into a data bank as based on

genetic region. This meant out of thousands of sequences recovered, we only found one true identity: the Rhizobium species," he says.

Rhizobium bacteria are common colonisers of potato roots. The bacteria can interact positively with potatoes, but researchers have not yet assessed how it impacts potato growth or if it can colonise potato plants internally.

Dr Lazarovits' colleague and co-author, Dr Amy Turnbull, developed a series of semi-selective media aimed at isolating the top ten most

common bacteria on roots, with the hope of matching the bacteria's genetic sequences to those already identified. Of 200-plus isolates selected and sequenced, 44% were found to be unidentified species.

"This is an indication of how primitive our understanding is of the root ecosystems of potatoes," says Dr Lazarovits.

The findings of Dr Lazarovits' research paper can be broadened to the wider area of soil health and productivity.

"We have identified agro-ecosystems where over many years of specific crop rotations,

growers were able to increase their yields by significant amounts and that such increases were likely due to changes in the microbial profiles of the soil," he says.

Dr Lazarovits says the use of microorganisms for agriculture is now being intensively examined by researchers and he is confident that a bio-fertiliser for potatoes will be developed in the near future.

The benefits of a switch from current chemical-based fertilisers to bio-fertilisers for use in crop production are twofold: a reduction in water pollution and nitrous oxides that have been associated with changing climatic conditions, and a greater sense of sustainability - both by improving crop health and growers' financial positions.

Dr Lazarovits believes that the use of microorganism-based products and systems such as bio-fertilisers in agricultural crops will continue to grow.

"Virtually all small companies producing microbial products have been recently sold to large conglomerates. These companies believe that growers and consumers want more bio-rational means of agricultural production," he says.

"My colleagues and I are in the process of testing some of our bio-fertiliser formulations with potatoes as well as other crops such as corn, carrots and cucumber," he says. "We are focusing primarily on developing molecular tools that allow for measurement of microbial functions associated with plant growth and productivity."

"Such rapid tools will allow for the identification of both productive and unproductive sites. Ideally we want to help growers maintain the healthy sites and remediate the poor ones," he says.

Dr Lazarovits has fostered a strong relationship with his Australian counterparts, through a close link with Horticulture Australia Limited's (HAL) potato R&D program. His work is part of the Australian Potato Research Program Phase 2 (APRP2), which is currently being conducted for the Australian processed potato sector.

Dr Lazarovits and his Australian colleague, Dr Tonya

Wiechel, from the Department of Primary Industries Victoria (DPI Vic), have identified soils where Common scab disease is rarely found. By manipulating various physical treatments of the soil, they have demonstrated that the suppression of the disease is likely to be linked to biological components.

"We are working...to identify which microorganism populations may be associated with keeping this very important pathogen from causing disease," says Dr Lazarovits.

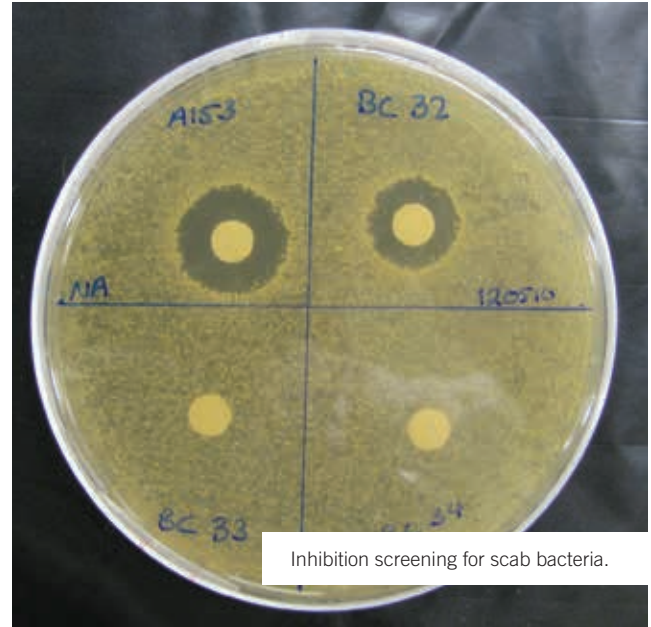
"We are also working together to manage chemical parameters that minimise the ability of pathogens to establish and persist in soils," he says. "Both our groups have shown that while changing the concentration of specific plant nutrients does not eliminate disease, it can reduce it to below economic threshold levels."

"Soil is the most complex ecosystem on this planet," says Dr Lazarovits. "We have only

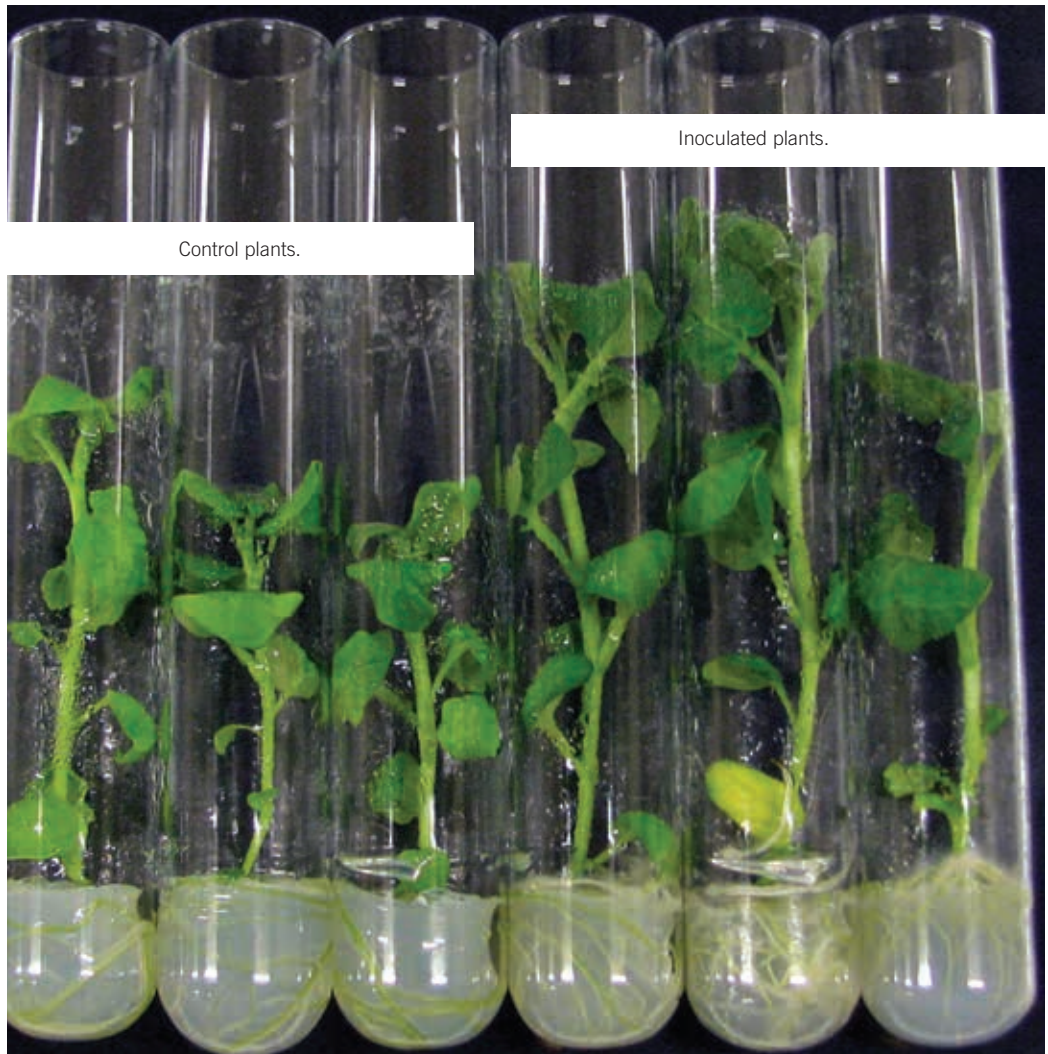
just started to develop methods that allow us to understand what makes soils productive, and how to keep them in that state for long-term food production. If we don't do this now we may face devastating crop failures in the future."

Dr Lazarovits is confident that a continuing affiliation with the

APRP2 program will allow him and his Australian colleagues to increase their understanding of soil health for the benefit of the industry. A discussion meeting has been scheduled for early June in Montreal, Canada, to plan the next phase of this exciting field of research.



Inhibition screening for scab bacteria.



Control plants.

Inoculated plants.

AUSVEG National Awards for Excellence

THE 2013 AUSVEG NATIONAL AWARDS FOR EXCELLENCE CELEBRATED THE OUTSTANDING ACHIEVEMENTS AND CONTRIBUTIONS MADE TO THE AUSTRALIAN HORTICULTURE INDUSTRY BY GROWERS, RESEARCHERS AND ORGANISATIONS AT A MAGNIFICENT GALA DINNER.

Grower of the Year Award

2013 Winner - Matt Hood (QLD)



L-R: Matt Hood, Senator The Hon Joe Ludwig, Paul Luxton representing Syngenta.

Proudly sponsored by Syngenta

syngenta

Industry Leader Award

2013 Winner - Sean Richardson (NSW)



L-R: Sean Richardson, AUSVEG Chairman John Brent.

Young Grower of the Year Award

2013 Winner - Danny Trandos (WA)



L-R: Past winner, Michael Vorrasi, John Gilmour representing Dow AgroSciences, Maureen Dobra representing Danny Trandos.

Proudly sponsored by Dow AgroSciences

DOW

Dow AgroSciences

Rising Star of the Year Award

2013 Winner - Stuart Jennings (VIC)



L-R: Tim Walsh representing Coles, Stuart Jennings.

Proudly sponsored by Coles



Industry Impact Award

2013 Winner - Australian Bio-Plastics (VIC)



L-R: Wayne Dunne representing Visy, Joe Gagliardi representing Australian Bio-Plastics.

Proudly sponsored by VISY



Women in Horticulture Award

2013 Winner - Belinda Adams (QLD)



L-R: Past winner, Tina Lamattina, Belinda Adams, Senator Christine Milne, Murray Lynch representing Steritech.

Proudly sponsored by Steritech



Industry Recognition Award

2013 Winner - Figaro Natoli (WA)



L-R: Jeremy Cocks representing DuPont, Maureen Dobra representing Figaro Natoli.

Proudly sponsored by DuPont



Researcher of the Year Award

2013 Winner - Dr Kathy Ophel Keller (SA)



L-R: Past winner, Dr Calum Wilson, Sue Cross representing Bayer CropScience, Dr Kathy Ophel Keller.

Proudly sponsored by Bayer CropScience



Innovative Marketing Award

2013 Winner - Adelaide Produce Markets (SA)



L-R: Past winner, Andrew Fletcher representing Aussie Farmers Direct, Angelo Demasi representing Adelaide Produce Markets, Andrew Young representing CMAA.

Proudly sponsored by CMAA



Environmental Award

2013 Winner - John McKenna (TAS)



L-R: Stuart Upton representing Netafim, Max Baker representing John McKenna.

Proudly Sponsored by Netafim



Productivity Partner Award

2013 Winner - John Deere (QLD)



L-R: Senator Ian MacDonald, past winner, Wayne Dunne, Royce Bell representing John Deere, Chris Willis representing Elders.

Proudly sponsored by Elders



Trade Display of the Year Award

Single-booth

2013 Winner - Crop Care Australasia (QLD)



L-R: AUSVEG Director David Addison, Kerrie Mackay representing Crop Care Australasia.

New Awards 2013!

Trade Display of the Year Award

Multi-booth

2013 Winner - Bayer CropScience (VIC)



L-R: Dean Schrieke (AUSVEG), Lachlan Bird representing Bayer CropScience.



Unlock your crop's potential with Omnia.



Compound preplant fertilizer for potatoes

- All nutrients in every granule
- High in phosphate and zinc to stimulate tuber initiation



Stimulate root and tuber growth

- Comprehensive nutrient foliar with kelp
- Improve plant stress management



Most of Australia has naturally low levels of Boron in its soil.

- Certified for Organics
- Provides available Boron on a slow release / continual basis
- Improve plant stress management

03 5133 9118
www.omnia.com.au
info@omnia.net.au

 **omnia**
NUTRIOLOGY*
**the science of growing*

Dean Bone: Staying positive

VICTORIA'S DEAN BONE HAS OVER 20 YEARS OF EXPERIENCE GROWING SEED POTATOES. HE RECENTLY SPOKE WITH FELICITY POWELL ABOUT THE CHALLENGES AND FUTURE OF THE SEED POTATO INDUSTRY, AND THE IMPORTANCE OF MAINTAINING POSITIVE RELATIONSHIPS WITH INDUSTRY CONTACTS.

Nestled deep in Victoria's Otway Ranges, Kennedys Creek is a quiet farming town and home to seed potato grower, Dean Bone.

Along with his father, Allan, and brothers, Andrew and Gavin, Dean has been growing seed potatoes for over twenty years.

The three brothers began their careers as potato growers in 1983, after deciding they needed to take on another project in addition to milking dairy cows on their land.

"The first year was terrible, because we didn't know much about [potato growing]...The grubs got most of them," Dean says.

But Dean saw an opportunity in potato seed production and persisted with his new passion. Along with his wife, Jill, Dean has since established his own successful business on the property which spans some 1000 acres, and where he now grows 20 different seed potato varieties.

Dean has faced his fair share

of challenges over the years.

"Up until about five years ago, the industry was really good. The industry's changed a lot to what it used to be," he says.

"Even if you get everything right, you only just make [a profit]. You can't afford to make too many mistakes. And when I say making a mistake, that could just be getting a lot of rain when you don't want it."

"Supply and demand will always be a major factor in our industry. Unfortunately, someone's misfortune will

be another's good luck.

Growing potatoes is a love-hate relationship depending on the day," he says.

Dean has concerns about the future of the seed potato industry, noting that the numbers of experienced growers continuing to work in the industry are dwindling.

"There's not a lot of us left. There's maybe about 80 seed growers left in Victoria: in Gippsland, Ballarat and Portland," he says. "There's some real concern for the next



“... Even when you're feeling down about it all, when you go out and pull up a spud plant and you see a good crop of spuds under there, that's a great feeling.”

- Dean Bone.

five years. The older ones will be getting out and it's whether the young ones want to take over or not."

"We'll be losing a lot of experience. You learn something different every year when you grow potatoes. You can't just come in, whack them in the paddock and grow a crop."

While there is a lot of pressure on seed potato growers at the moment, Dean says quality of product should never be compromised. He believes it's as simple as supplying the best quality seed to buyers to ensure they'll keep coming back. And in turn, that quality is then passed on to consumers.

"There's plenty of stuff out there that's not quality, but if you want quality you just have to pay the price," he says. "We're all in it for the same reason. At the end of the day, if the customer's happy, they're going to stick with eating potatoes."

Dean's potatoes are sewn in an isolated piece of land with a stunning view, looking



over to the outskirts of Laver's Hill near Victoria's south-west coast, surrounded entirely by dairy farms. Out on the potato field, Dean and his father, Allan, remark that it is their geographic isolation from other potato growing operations that lends itself to the production of high quality potatoes. Isolation from large-scale commercial growers means there is less of a threat of disease-carrying aphids catching a ride on the wind, bringing disease to Dean's crops.

"We're really lucky down here. We don't use a lot of sprays. We haven't had many disease problems around here so many people are keen on buying our seed," he says.

Dean works with brother, Gavin, and father, Allan, to grow their specialty, Otway Red potatoes. This variety of potato is a beautiful, deep, red colour, about the size of a human palm, and according to Dean, tastes delicious, no matter which way you cook it.

The Bone family also grows Sebago, Nadine, Valor, Kestrel, Atlantic, Golden Delight, Lady

Christl, Almera (a low GI potato), Malin (otherwise known as Pink Kiss) and several other varieties. A variety known as FL1867 is grown especially for Red Rock Deli potato chips, and seed is sent to growers in Queensland. Dean notes that growers in Atherton, Charters Towers and Bundaberg in Queensland are some of "the best customers [they've] got".

In 2012, Dean participated in the AUSVEG Potato Growers' Study Tour, which took the group to Scotland to attend the World Potato Congress and also to Belgium, to visit a range of potato growing businesses.

The tour was an opportunity to provide Australian growers with exposure and access to the technological, marketing and business initiatives that are currently being undertaken by the potato industries in Europe, as well as international ideas at the World Potato Congress. It was also a chance for participants to get to know other growers and establish friendships and valuable networks with their counterparts from growing regions around

Australia.

"There's a lot of really good people in the industry. That's probably why we keep doing it. They make what we do enjoyable," Dean says of his fellow potato growers.

Looking back on the experience, Dean says that Australian seed potato growers are not the only ones doing it tough.

"We're all going through similar issues. If you went over there you could sit down at one of their tables, and you'd be talking about exactly the same sorts of things," Dean says.

As a representative for the Otway region for Seed Potatoes Victoria (SPV), Dean meets with other delegates every couple of months to discuss the state of the industry and to work on building relationships between seed growers and buyers, to help understand each other's issues.

"I'd like to see Seed Potatoes Victoria take a bigger role and represent growers more," he says. "It's hard for potato growers because you only get a return on a portion of your land every four to five years. A lot of us have to do other work with our land, like take on dairy cows on agistment."

Out amongst his potato crops, Dean digs into the rich soil and uncovers a few of his prized Otway Red potatoes. He looks up with a satisfied smile.

"I enjoy the challenges, because even when you're feeling down about it all, when you go out and pull up a spud plant and you see a good crop of spuds under there, that's a great feeling," he says.

"Once you get away from the politics and money side of things, you could just do this all day... digging spuds. It's a great office to work in."



Photographs by Brandon Rooney.



Four years of growing influence

IT HAS BEEN FOUR YEARS SINCE RICHARD MULCAHY ASSUMED THE POST OF AUSVEG CHIEF EXECUTIVE OFFICER (CEO). THIS PERIOD HAS BEEN ONE OF EVOLUTION FOR THE AUSVEG TEAM THAT HAS SEEN THE COMPANY'S REACH AND INFLUENCE GROW ENORMOUSLY.

Over the past four years, AUSVEG has been revitalised as a force in horticulture to such an extent that *The Weekly Times* reported in late 2011 that AUSVEG was now “considered in Canberra to be one of the nation’s most powerful agri-lobby groups.”

Two years on and the organisation continues to go from strength to strength, having developed strong relationships across the political spectrum. However, at the time of his appointment to the national Peak Industry Body representing Australia’s vegetable and potato growers, Mr Mulcahy says he knew little about the vegetable industry.

“It was very clear [in the initial

interview] that apart from eating them and enjoying them, I had very limited knowledge,” he says.

At that time, the AUSVEG Board considered an in-depth understanding of Australian horticulture to be an important quality in a prospective CEO. Nevertheless, Mr Mulcahy was able to convince the Board that AUSVEG needed to be led by people with real expertise in administration (Mr Mulcahy had previously held chief executive roles in the Confectionery Manufacturers of Australia and the Australian Hotels Association, among others).

“The Board took the decision that was compelling, resolved to appoint me, and I think it is fair

to say that the success we’ve had in the four years since I was appointed has confirmed the point I was making,” he says.

Thus, the reinvigoration of the Australian vegetable and potato growers’ national Peak Industry Body commenced. Mr Mulcahy says that over the four years following his appointment, the AUSVEG team, supported by Chairman, John Brent, and the Board of Directors, has moved the organisation to be on a stronger financial footing and has increased Australian horticulture’s media profile, which has given rise to expanded political influence. AUSVEG has also successfully transformed the way in which industry research

and development (R&D) is managed, ensuring that it is now undertaken on a more cost-effective basis, he says.

But one of the greatest strengths that he has brought to the role has actually been the engagement of a fresh, young staff, which, he says, periodically looks for mentoring and guidance. New people bring new ideas, and this has been to the benefit of the organisation.

According to Mr Mulcahy, AUSVEG is now the highest-profile agricultural group in Australia, thanks to the team’s relentless effort to increase the prevalence of industry concerns in mainstream media.

“AUSVEG was, at the time of my appointment, generating

only around about 25 media mentions a month. It has, in this past year, seen months where the figure has been more than 1000," he says. "The media is a powerful tool in terms of advancing concerns of constituents and, again, I have had success in other industry organisations in utilising the media."

Two issues currently of concern to the Australian horticulture industry, about which AUSVEG has been particularly vocal in the media, include the Biosecurity Bill, and the threat of Zebra Chip disease. AUSVEG believes that the Biosecurity Bill continues to have deficiencies, and has fought the passing of the Bill in its current form.

"We were able to force extended consultation by taking our concerns into the public domain, and there has been, subsequently, a Senate Inquiry into this Bill," Mr Mulcahy says. "There is general agreement that there is scope for biosecurity reform, given that the base legislation was introduced in 1908. However, the consensus is that this Bill

needs more work."

Similarly, AUSVEG has run a media campaign to increase public awareness of the biosecurity threat to the potato industry from Zebra Chip disease, using social media, such as the production of an animated video that was uploaded to YouTube, as a vehicle to explain its concerns. Zebra Chip disease has not yet reached Australia but has caused hundreds of millions of dollars in damage to the New Zealand potato industry. AUSVEG's video was picked up by the national media, including highly-rated television programs such as Network Ten's *The Project* and *Today Tonight* on Channel 7.

"[The video] has recently been rated by Medianet, one of the media distribution organisations, as a case study of one of the most successful campaigns using various aspects of media," says Mr Mulcahy. "It contributed, in no small way, to a heightened awareness by parliamentary decision-makers of our concerns about this devastating disease."

"We remain optimistic that they will not endorse the plan to import potatoes from New Zealand," he says.

Importantly, during Mr Mulcahy's time at AUSVEG, the company's financial stability has also increased, allowing it to focus on a whole suite of issues that affect growers and suppliers. While in the past, AUSVEG had been heavily reliant on levy funds to carry out its duties and was focused almost exclusively on research and development related activities, a sound financial foundation has enabled the creation of a public affairs unit.

"AUSVEG is not the first industry organisation where [financial stability] was an issue at the time of my appointment," says Mr Mulcahy. "I've had success in each instance in getting those organisations on a sound footing, and my view is that without a strong financial base, it's very difficult to progress the ambitions of the constituents."

"We are [now] also focused on the political considerations that impact on the industry, the image of the vegetable industry,

global factors that might have adverse consequences for the industry, as well as opportunities for the industry," he says. "It has become apparent that many of the key suppliers to the industry want to be part of that journey and are willing to support the organisation."

Mr Mulcahy's career has been diverse, and this has enriched his education of administrative responsibility. As well as having held chief executive positions in a range of industries, Mr Mulcahy spent several years in Australian politics. He was a member of the unicameral Australian Capital Territory Legislative Assembly, where he represented the Liberal Party and, later, where he served as an independent. Mr Mulcahy says that political life taught him valuable lessons that he has been able to apply to his management of an industry body.

"Agri-politics are as tough as parliamentary politics," he says. "What I've found in parliamentary life was that it's important to stay in touch with constituents...and understand their concerns."



Photographs by Brandon Rooney.

AUSVEG Director, David Addison with CEO, Richard Mulcahy.

“AUSVEG has made a concerted effort to talk to leading growers in Australia, who have a broad understanding of market forces, and they are able to keep us fully informed on emerging issues,” he said.

There is much that Mr Mulcahy loves about his job. He says that he enjoys the variety and the pace of work and the broad range of people with whom he comes into contact. He says that his favourite memory of his time at AUSVEG was the initial address that he gave to the Australian horticulture industry at the vegetable conference at Crown Hotel Casino in 2009.

“I was the new kid on the block, unknown by most, understood to be a former politician, and I had the opportunity to lay out my vision for the future, only two weeks after my appointment,” he says. “This was a challenging situation, an important address, and it was extremely well-received by those who were in attendance. I feel comfortable that the direction that I outlined, that I was recommending to the organisation, with the support of the Board, continues to be

accomplished.”

“And I’m also proud of the vastly improved relationship now existing between AUSVEG and Horticulture Australia Limited and their Board, their Chairman, Selwyn Snell, and their CEO, John Lloyd,” he says.

But work at AUSVEG has also presented Mr Mulcahy with significant challenges that he has had to overcome.

“Initially, it was reputational damage that AUSVEG suffered, in the view of suppliers, growers and the media, and this was something that I had to address in the first year,” he says. “It is also challenging dealing with the disparate needs and varying resources of our member organisations, some of which are in far stronger positions than others, and attempting to work with each of those bodies on a comparable level to deliver the best outcomes for growers.”

According to Mr Mulcahy, the horticulture industry itself has also seen considerable change during his four years as AUSVEG CEO. He says that during this time, the market has become increasingly competitive.

“The industry, by its very

nature, is very supply and demand-driven. There are few impediments to price fluctuations, meaning that in times of strong production, prices will generally fall dramatically,” he says. “We’re also seeing increased consolidation, by which, I mean there are more and more farms becoming larger, acquiring neighbouring properties, or entering into arrangements with neighbouring properties.”

“This is paralleling a push by the major retailers to limit the number of direct suppliers with whom they want to deal, together with their determination to push the middle-men out of the equation and have relationships that operate as retailer and grower,” he says.

“There will always be challenges with the production of produce, but it would appear to be a lot more difficult at the present time due to issues relating to production levels, retail relationships, the cost of labour and competition now in the order of nearly a billion dollars in processed vegetables offshore,” he says. “AUSVEG has worked on a range of fronts to try and assist growers to go

through these areas.”

It is fitting that at the four-year mark, Mr Mulcahy reflects on his forecast for the organisation for the next four years.

“I hope to see AUSVEG continue to grow in the corporate space. We continue to do research and development projects within certain areas of activity such as communications, the environment and some trade activity, as well as grower tours, and we will continue to do those projects where we are best-suited to carry them out on a cost-effective basis,” says Mr Mulcahy. “I do not harbour ambitions to continue to expand our activity in that space, but would rather see us continue to build our corporate base, which provides us with fewer constraints, the capacity to use those funds to support agri-political activities, and to undertake any other activity that the Board of the organisation might deem appropriate.”

“Our success has become the envy of many other organisations,” he says. “And the organisation may well expand its footprint in years to come.”



AUSVEG Public Affairs Manager, William Churchill with CEO, Richard Mulcahy.

"The challenges of soil-borne diseases are still very great"

NEW ZEALAND SCIENTIST, PROFESSOR RICHARD FALLOON, IS INTERNATIONALLY RENOWNED FOR HIS WORK IN PLANT PATHOLOGY. WHILST IN MELBOURNE RECENTLY, HE TOOK THE TIME TO SPEAK TO WILLIAM GREGORY ABOUT HIS RESEARCH INTO SOIL-BORNE DISEASES IN POTATOES, THE IMPORTANCE OF POTATO-INDUSTRY R&D AND INTERNATIONAL COLLABORATION IN RESEARCH.

Professor Richard Falloon wears many hats. His extensive curriculum vitae lists several diverse titles, including Deputy Director at the Bio-Protection Research Centre at Lincoln University; Co-Editor-in-Chief of *Phytopathologia Mediterranea*, a journal about Mediterranean plants; and Immediate Past President of the International Plant Pathology Society, an organisation of 20,000 plant pathologists around the world.

"How do I manage it? I don't know," Prof Falloon says. "I balance it and do the jobs that I have to and enjoy doing it."

It is his work as a plant pathologist that has gained Prof Falloon international recognition. Despite his commitments in New Zealand, it is this work that brought him to Australia earlier this year to conduct research for a project connected with the Australian Potato Research Program Phase 2 (APRP2). In Melbourne, he investigated management strategies for

soil-borne diseases, which are notoriously difficult for potato growers to control.

"Soil-borne diseases cause damage to the tubers of potatoes. Of course, that's very well-known," he says. "There are a number of pathogen organisms that harm the quality of potatoes. My personal research is focusing more on things that affect the yield of potatoes - not just how good the potatoes are, but how many of them, and how big they are, and so the amount that is harvested from the crop."

"I've got a program in New Zealand... and it is quite a large program, but part of it has always been linked with colleagues in Australia," he says. "We just linked

through normal networking that scientists do: going to conferences and meeting each other and discussing our results."

Prof Falloon says that he enjoys the experience of working with Australian researchers on the project. According to Falloon, international cooperation increases the efficiency at which research can be conducted, as responsibilities can be distributed amongst a larger and more diverse group of organisations.

"There's a network of international science on potato soil-borne diseases that's operating at the moment," he says, "[including] the UK, Switzerland, South Africa, New

Zealand [and] Australia... There are a number of groups around the world that are working on some of these problems and we all communicate regularly."

"The benefits of collaboration are just very obvious," he says. "It's financial, because all of these groups, all of these countries, are putting money into research programs on their own, so that the joint output is much greater than the sum of the parts."

Whilst much progress is being made with regard to research and development in the potato industries of both Australia and New Zealand, ensuring that new practices and technologies are adopted by growers on-farm is often a significant challenge. This issue is prevalent in both





Dr Dolf de Boer and Prof Richard Falloon.



countries and is the major goal of the Potato Industry Extension Program, managed by AUSVEG. Prof Falloon believes that in order to encourage growers to alter their practices, the results of research activities must be convincing.

“First of all, they’ve got to be proven to growers,” he says. “Growers have to be convinced that the new practice is worthwhile, that it fits into their normal management of the particular crop that they’re interested in, and it’s got to be practical.”

“The innovation has to cause a big difference,” he says. “Then, of course, you’ve got to communicate it to [growers].”

Prof Falloon believes that potato-industry R&D has an important future and is likely to grow in tandem with the worldwide demand for food.

“Potatoes are a world crop. I mean, it’s well-known that potato production around the world is helping to feed the millions, and in many countries where they have food problems, potatoes have been seen as a way of overcoming them,” he

says.

“A particular example would be in North Korea... North Korea has had famines and there’s been a big effort in that part of Asia to increase potato production to help feed the populations.”

Prof Falloon says that similar efforts are being made in China, where potato production has dramatically increased over the last 15 to 20 years. He says that in order to continue to feed the biggest population on the planet, potatoes are being grown in new, previously-unused areas of the country.

According to Prof Falloon, research into soil-borne diseases, specifically, will continue to play an important role in maximising the health of the potato industries in both Australia and New Zealand.

“I think the challenges of soil-borne diseases are still very great for potato production,” he says. “We think in New Zealand that they could be causing 10, 15, 20% yield reductions. And there’s definitely been suggestions that up to 40% yield reductions in potatoes

could be due to soil-borne diseases. So to maintain high yields from crops, from our personal perspective, plant diseases are very important.”

“That’s why plant pathologists, from when plant pathology started 150 years ago, have worked on these things,” he says. “I think from almost a philosophical point of view that part of the research spectrum is integral in plant pathology.”



Part of the work conducted by Prof Falloon discussed in this article is related to APRP2

Primary Investigator:

Dr Dolf de Boer

Project Number:

PT09026

Email: dolf.deboer@dpi.vic.gov.au

Monitoring potato crops for psyllids

A PROJECT HAS BEEN MONITORING NATIVE PSYLLID POPULATIONS IN SOUTH-EASTERN AUSTRALIA TO CHECK FOR INCURSIONS OF THE TOMATO-POTATO PSYLLID, WHICH COULD DEVASTATE THE POTATO INDUSTRY IF ESTABLISHED IN AUSTRALIA, WRITES KAREN SHAW.

The good news for Australian potato growers is that there is currently no evidence of the Tomato-potato psyllid (TPP) - an insect that can cause yield losses of 50% and which is also associated with Zebra Chip disease - which has devastated the New Zealand industry.

But while TPP is not here yet, industry experts warn there is no room for complacency. Plant pathologist, Dr Calum Wilson, from the University of Tasmania (UTAS), stresses the value of a current R&D program that is monitoring native psyllids in crops along Australia's south-east coast. The monitoring, he says, is important for an early detection of TPP.

"If the pest arrives on Australian shores, we need to alert quarantine and plant-health officials immediately," he says.

Workshops held in 2012 provided potato field officers with a description of the pest and symptoms of what would happen in crops. The most obvious characteristic of the adult TPP is its distinctive ability to jump.

"If you're walking through a crop this insect will jump ahead of you," says Dr Wilson.

The insects are approximately 3mm long, with dark and light body stripes and veined, transparent wings. The nymphs are initially yellowish but become the same colour as

leaves when almost mature, making them difficult to detect.

The nymphs feed on foliage and secrete toxic saliva that causes leaves to yellow and wilt. Zebra Chip disease can be transmitted between insect and plant in a matter of hours. As well as being able to jump, the adults are excellent fliers and can quickly spread through crops or on the wind. Authorities have been watching the weather in case favourable winds carry the psyllids across the Tasman.

Fortunately, regular psyllid-monitoring of crops in Tasmania, Victoria, South Australia and Queensland over the past eighteen months has found no evidence of the destructive TPP. As well as an early-warning detection system for TPP, the monitoring project was also designed to identify native psyllids in Australia and learn about their associations with crops.

The three-year study was funded by Horticulture Australia Limited using the National Potato Levies, voluntary contributions from industry and matched funds from the Australian Government.

Dr Wilson says that the data collected in 2012-2013 showed higher numbers of native psyllids in many regions, possibly caused by warmer weather, drier conditions and proximity of sticky traps to native vegetation. Sticky



traps in northern Tasmania in September recorded 1506 native psyllids and those in South Australia in September recorded 1240.

But while these insects were discovered in traps within the crop, they probably did not feed on potatoes and there was no evidence of any potato plant or tuber damage. In comparison, the Tomato-potato psyllid is a voracious feeder on potato plants and is a known vector of a bacterium called *Liberibacter*, which is associated with Zebra Chip disease.

The disease darkens the flesh when it is cooked and has been a major problem in New Zealand, costing growers millions of dollars in lost production. To complicate things further, another bacteria-like pathogen (a phytoplasma *Ca. Phytoplasma australiense*) has also been found in some Zebra Chip-affected plants in New Zealand.

Dr Wilson has been closely

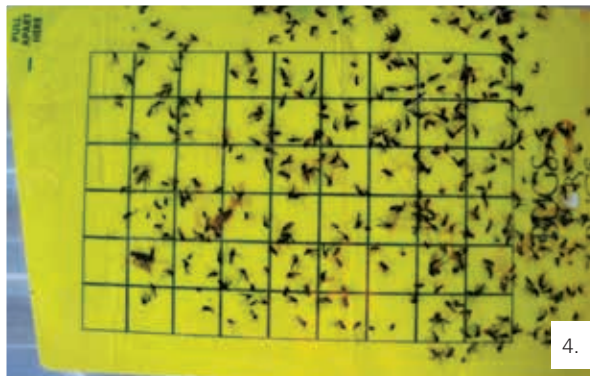




2.



3.



4.



1mm

5.

following the New Zealand growers' plight. When the disease was first discovered there in 2006, the only method of control was widespread spraying with insecticide, which is unsustainable long-term. The most exciting advancement has been the development of a successful Integrated Pest Management (IPM) program, Dr Wilson says.

Australian researcher, Dr Paul Horne, worked with New Zealand growers on the HAL-funded program and produced effective psyllid control using soft insecticides and by encouraging TPP predators into the crop.

"Where there is a high number of native psyllids, such as we have here in Australia, you would also expect high numbers of psyllid predators," Dr Wilson says.

"These results suggest if TPP did arrive in Australia, an important part of the management program would be planting or maintaining native vegetation around the crop to encourage native psyllid populations and, more particularly, their predators," he says.

Dr Wilson says that another important part of the monitoring

program has been screening the native psyllids for the presence of phytoplasmas, which are associated with other important potato diseases. The results revealed no positive samples.

"This represents a good outcome, recognising the current lack of major phytoplasma issues within the industry," he says.

The Australian potato processing industry has recognised the importance of monitoring for TPP, native psyllids and their predators in major Australian potato growing areas. While the current project is scheduled to finish this year, Dr Wilson believes that if the pest arrives in Australia, it is vital that everything is in place for early detection and management.

THE BOTTOM LINE

- A potato crop monitoring program across the major potato growing areas along the south-eastern Australian coast is closely watching for a potential incursion of the Tomato-potato psyllid (TPP).
- Workshops have trained field officers to help identify TPP and symptoms of Zebra Chip disease, which kills plants and darkens tuber flesh when it is cooked. Any signs of TPP or Zebra Chip should be reported to authorities immediately.
- While there is no evidence that native psyllids harm potato crops, an Integrated Pest Management program in New Zealand has found that the predators that feed on native psyllids will also help to control populations of TPP.



For more information:
Dr Calum Wilson
Tasmanian Institute of
Agriculture
Email: calum.wilson@utas.
edu.au
Project Number: PT10001

Captions: 1. Plant affected by Tomato-potato psyllid; 2. Tomato-potato psyllid, image courtesy of Pest and Diseases Image Library, Bugwood.org; 3 & 4. Psyllid sticky traps; 5. Tomato-potato psyllid, image courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org.

The young faces of training and education in the Australian potato industry (Part 2)

POTATOES AUSTRALIA SPEAKS WITH SOME YOUNG SCIENTISTS IN TASMANIA WHO ARE CONDUCTING SOME KEY RESEARCH FOR THE AUSTRALIAN POTATO INDUSTRY.

At a time when the younger generation is noticeably under-represented in potato research, it is important to encourage students to build a viable, rewarding scientific career in our industry. It is also important that we recognise excellence in the field, when it is achieved. To follow on from our previous edition, *Potatoes Australia* speaks to some promising PhD students from the University of Tasmania about their research into diseases affecting Australian potatoes.



Student's name: Tamarasan Thangavel (Tamil)

Working towards: PhD

What are you researching?

I am studying novel potato somaclones (plants cloned using a single cell) of Russet Burbank that have extreme resistance to Common scab. I aim to understand this resistance from histological, physiological and molecular perspectives, to identify key traits associated with resistance and to determine if these operate against other diseases. Other work focuses on the epidemiology and critical infection periods of Common scab, Powdery scab and Black scurf.

Why are you conducting this research?

This research will identify plant/pathogen interactions, the factors associated with resistance and the growth stage of plant development most susceptible to infection. The study will identify additional commercial potential of these somaclones, and will provide tools to enable more rapid and efficient resistance screening in somaclonal breeding programs.

What does this research mean for the potato industry?

These diseases cause significant losses to the industry. Solutions to manage them include host resistance, which may reduce disease severity and minimise costs (for example, agronomic practices, foliar sprays and other pesticides). Understanding the physiological role of host resistance (tubers) against soil-borne pathogens is essential to introduce new cultivars in the market.

My research will help us understand the defences in the tuber skin and how these restrict Common scab and other diseases. It will also provide a physio-marker tool to develop resistant cultivars against various other soil-borne diseases.

When will you complete your studies?

March 2014.

What would you like to do after you finish your studies?

After finishing my PhD, I wish to continue my research career as a plant pathologist in both academic and industry sectors.

Student's name: Mark Balendres
Working towards: PhD

What are you researching?

My project, which commenced in December 2012, will focus on three broad areas: the development of potato somaclonal variants of commercially important cultivars with enhanced resistance to *Spongospora subterranea* (Powdery scab); evaluation of the importance of *Spongospora* root infection on yield and quality; and studies of root chemotaxic responses and their role in root invasion.

Why are you conducting this research?

Powdery scab is well recognised for causing tuber damage. Studies on root infection by the pathogen have generally been neglected. However, recent work has demonstrated that major yield loss can result from *Spongospora* root infection, particularly in cultivars with weaker root systems such as Russet Burbank. This has prompted research efforts to better understand the infection process and to develop management strategies targeting root infection.

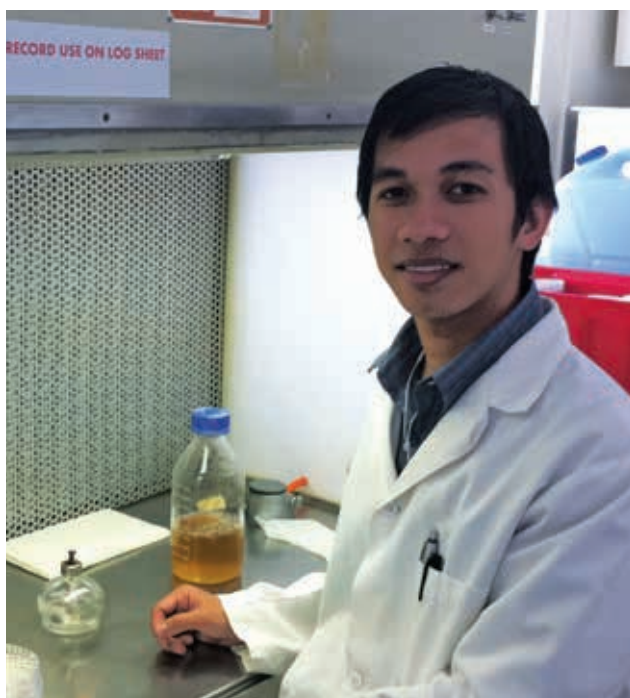
What does this research mean for the potato industry?

Powdery scab causes major losses. Seed growers suffer loss through rejection at the seed certification stage; commercial growers suffer yield loss and rejection of tubers at the factory stage; and processing companies lose money through over-contracting for seed and ware crops as well as increased in-factory costs.

For the Australian processed potato industry, managing this pathogen has become one of the highest research priorities, with outcomes critical for productivity and economic sustainability. My work will develop enhanced resistance to this disease reducing yield penalties and increasing industry profitability and competitiveness.

When will you complete your studies?

The study will be conducted over 3-4 years and is expected to finish by 2016.



Student's name: Hannah Thompson
Working towards: PhD



What are you researching?

I have been researching the application of novel non-fungicidal foliar chemical treatments to control Common scab. My studies have also investigated novel seed tuber treatments, and the genetic basis of tolerance to Common scab toxins, which may be responsible for the resistance of some potato varieties to the disease.

Why are you conducting this research?

Common scab is a critically important disease, causing deep scab lesions that lead to tuber rejection or the need for additional processing. It is managed by various methods, but there is no single, highly effective method to control the disease, and it would be great to find one. Personally I enjoy the practical aspects of the research.

What does this research mean for the potato industry?

We have discovered new things about Common scab. For example, it seems that it needs to be controlled much earlier than originally thought, and once symptoms start to appear, it is probably too late. The research has also led to further examination of other interesting control methods and application technologies. Hopefully we are a step closer to finding an effective control for Common scab.

When will you complete your studies?

My thesis is actually finished. I am really proud of my work and now just have to wait until graduation.

What would you like to do after you finish your studies?

I would like to get a job somewhere in agricultural research. I would also like to spend some time working overseas, perhaps in a developing country. They even grow potatoes in Iceland! That would be fascinating.



This project has been funded by HAL using voluntary contributions from industry with matched funds from the Australian Government.

For further information on the work of these PhD students, please contact Dr Calum Wilson.

Institution: Tasmanian Institute of Agriculture

Email: calum.wilson@utas.edu.au

Phone: (03) 6233 6841

Project: PT09026

Ask the industry



with Scott Mathew

SCOTT MATHEW FROM SYNGENTA PROVIDES READERS WITH ADVICE REGARDING THE APPLICATION OF IN-FURROW APPLICATORS FOR LIQUID FUNGICIDE TREATMENTS ON POTATO PLANTERS.

Question: Over the winter months, I am looking at setting up an in-furrow applicator for liquid fungicide treatments on my potato planter. Is it better to use one or two nozzles to apply the fungicide at planting?

Trial work has indicated there are significant benefits from using two nozzles to apply in-furrow fungicide treatments. The first nozzle sprays the soil at the bottom of the furrow as it is opened in a 15-20cm band, just before the seed is covered. The second nozzle sprays the soil as the furrow is closing (bow wave). It is important that the fungicides are evenly incorporated throughout the mound.

Question: Are there any other things that I should consider?

Yes, there are several practices that have been found to help when setting up a planter with an in-furrow application unit. These include:

1. Ensuring that you have adequate agitation, at least 10% of combined tank capacity plus nozzle output. For

example, a 200 litre (L) tank and 4 nozzles applying 1.96L per minute (L/min) require a pump with a minimum output of 21.96 L/min, at normal operating pressure. A normal 12 volt pump will not produce this flow rate. We suggest setting up the tank with two 12 volt pumps, one to pump the product to the nozzles and one to agitate the tank.

2. Use as small a bore-spray line or pipes as possible from the tank to the nozzles.
3. Fit bayonet caps to house the in-furrow nozzles (e.g. hollow cone bayonet caps) to ensure ease of removal for cleaning or replacement. Use 100 mesh wire filters in circulation system.
4. Do not fit nozzle filters.
5. Fit drain taps to easily empty system for rinsing.
6. Fit blockage indicators if possible.

Question: What is the suggested water rate for applying in-furrow fungicide applications?

It is suggested that you should be using water rates in the range of 1L to 3L of

total volume (product plus water) per 100 metres (m) of row length, to ensure adequate coverage in the furrow.

To calculate the number of rows you have per hectare, it is a simple formula:

Number of 100m long rows per hectare =

$$\frac{100}{\text{(Row spacing (m))}}$$

For example: If you are planting at a row spacing of 85cm, the formula would be:

$$\frac{100}{0.85} = 118 \times 100\text{m long rows}$$

Using this row-spacing, you should be applying between 118L (118m x 1L) and 354L (118 x 3L) of total volume per hectare of planted potatoes.



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

CALENDAR of events



21 - 31 July 2013

Potato Growers' Study Tour

Where: USA & Canada

Further information:

AUSVEG (03) 9882 0277
or info@ausveg.com.au

28 July - 1 August 2013

Potato Association of America Conference

Where: Quebec City, Canada

Further information:

<http://potatoassociation.org/index.html>

8 August 2013

Potatoes in Practice 2013 Field Day

Where: Dundee, United Kingdom

Further information:

<http://www.hutton.ac.uk/events/potatoes-practice-2013>

4 - 6 September 2013

Asia Fruit Logistica

Where: AsiaWorld-Expo Centre, Hong Kong

Further information:

<http://www.asiafruitlogistica.com/en/>



POTATO GROWERS EUROPEAN TRIP 2013

Departing 3rd Nov - Returning 19th Nov 2013

Visit AGRITECHNICA in Germany - The largest Machinery Exhibition in the World. Visit the AVR Factory in Belgium and the MIEDEMA Factory in Holland and see the latest innovations in handling, planting & harvesting equipment.

Spend time in picturesque Brugge and have fun in Amsterdam. Travel through scenic countryside in Germany, Holland and Belgium. Overnight stay in Dubai on our way to Europe and overnight stay in Singapore on our return flight home.



vin rowe farm machinery
Endeavour St Warragul (03)56231362

Limited spaces available. For further information contact
Pat Bailey or Graham Rowe on (03) 56231362

Cleaning, handling and storage systems.



Think of Grimme and you think of potato harvesters. Complete the potato process from field to store with the Grimme range of advanced crop handling and storage equipment.

At every stage during and after harvest, every transfer and drop is critical.

Protect your investment with Grimme.

Call Craig Hopkins on 0418 501 647.