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December 2014/January 2015

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Cocciolone**

Young grower



Clinton Griffiths

A fresh attitude

Zebra chip

Latest developments

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AUSVEG Chairman and CEO messages



Geoff Moar

AUSVEG Chairman

There is no question that the quality of Australian potatoes is second to none. There is also no question that the biosecurity measures that we put in place to protect our industry contribute in no small part to that quality.

For this reason, the significant role that biosecurity plays in protecting the long-term viability of our businesses should never be underestimated. All it takes is for one small pest or disease to slip through the cracks, and decades' worth of work can be unravelled.

Parts of the Northern Territory cucurbit industry are experiencing just how damaging a pest incursion can be, following the discovery of Cucumber green mottle mosaic virus (CGMMV) in some watermelon and pumpkin crops. As this is the first incursion into Australia, the virus is presenting plenty of challenges to affected Northern Territory growers, and AUSVEG is doing what it can to help them through this trying time.

As the vegetable industry continues working to contain the virus, it is a timely reminder for potato growers to step back and review their own on-farm biosecurity measures. This vital process can cement the future security of your potato growing operations and be as simple as cleaning machinery and boots before moving into the next field. Taking these precautions now, will help strengthen the protection of our crops in the future.

When it comes to managing pests and diseases in the potato industry, keeping on top of the latest news and R&D developments is essential for any potato grower looking to grow their business. As a combined 120 participants found out recently, this can be

easily achieved by attending the Potato Industry Extension Program workshops.

It was pleasing to see such large numbers of growers and industry representatives flocking to the latest round of workshops that were held in South Australia, Western Australia and Victoria. Participants in SA and WA appreciated the opportunity to hear from international speaker Claire Hodge from the UK Potato Council, while attendees in Victoria learnt about consumer sentiment, canvassed in the Potato Tracker project. The workshops also addressed a range of other topics, including the management of Powdery scab and soil-borne diseases. Ongoing issues such as crop protection and pest control in potato crops were also discussed.

For those who missed out on the workshops, another invaluable opportunity to meet with industry will also be here before we know it – the 2015 AUSVEG National Convention, Trade Show and Awards for Excellence. This event will return to Jupiters Gold Coast from 25-27 June 2015, and it promises to be bigger and better than ever.

I encourage all readers of this magazine to make the most of the opportunity to attend these events, as a face-to-face conversation with industry representatives can be invaluable to the future of your businesses.

Geoff Moar
Chairman
AUSVEG



Richard Mulcahy

AUSVEG Chief Executive Officer

The ongoing benefits of buying locally-grown produce can sometimes be taken for granted, a fact that Australia's potato growers know all too well. Buying local is not only good for the growers who supply a product, but it also brings multiple flow-on benefits in the form of employment opportunities, community cohesion and broader economic growth.

Given the stellar reputation that Australian-grown produce enjoys in terms of quality, safety and freshness, it is astounding that state governments in Australia have not embraced a local procurement policy that would not only place Australia's potatoes at the front of the queue, but simultaneously benefit the local potato industry and boost the national economy.

AUSVEG was proud to join a campaign that supported this very issue, which came into full swing in the lead-up to the Victorian state election in November. The *Full Value for Victorian Food Procurement Policy* campaign, backed by a coalition of leading Australian food industry groups, urged Victorian Government departments and agencies to ensure that high-quality Australian vegetables, as well as other food products, were not overlooked in procurement decisions in favour of cheaper imports.

With the result of the state election now decided, AUSVEG will monitor the progress of the new Victorian Government and their efforts in this space to ensure that Australian growers get the fairest possible go.

In other news, you will notice that this edition of *Potatoes Australia* also includes the 2014-2015 AUSVEG Supplies Guide, which brings a comprehensive listing of

key Australian agribusinesses to your fingertips. We have worked closely with industry to develop this one-stop directory, which will help potato growers find information on service providers to improve the overall productivity and profitability of their farms.

There will also be ample opportunity to meet and greet leading industry representatives at the 2015 AUSVEG National Convention, Trade Show and Awards for Excellence, which will be held at Jupiters Gold Coast from 25-27 June next year. The Trade Show in particular presents the perfect opportunity to speak to representatives from many agribusinesses during the three-day event, many of whom are key supporters of the work of AUSVEG. For those who are interested in exhibiting, booth space is now available and continuing to sell out quickly, so be sure to get in early to secure your position at the leading event in Australian horticulture.

Along with the Convention, 2015 is shaping up to be another exciting year for the Australian potato industry, following Federal Parliament's declaration of Horticulture Innovation Australia (HIA) as the new industry services body for horticulture. Now that the Statutory Funding Agreement and Constitution has been finalised, AUSVEG looks forward to working with HIA towards a more sustainable and profitable future for Australia's potato growers.

Richard J Mulcahy
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**FRONT COVER:**

Matthew Cocciolone

Photograph by Chris Kershaw

Some of you may have heard the story about star NFL player in the United States, Jason Brown, hanging up his football boots (and the \$US37.5 million contract that went with them) to become a farmer. The 29-year-old, who was once the league's highest-paid centre when playing for the St Louis Rams, recognised what few others can: that the value you get from working the land is priceless.

The growers profiled in this edition of *Potatoes Australia* may not be star athletes on the international stage, but

they are some of the most productive potato growers in their respective regions. Young grower Matthew Cocciolone from Beta Spuds in Western Australia works in one of the largest packing and wash facilities in the state, and discusses his thoughts on the future of the industry on page 16. Meanwhile, Clinton Griffiths from Walker Flat in South Australia, explains how he is prepared to overcome the challenges that lie ahead for his business, Willow Produce (page 24).

There is also plenty of food

for thought in the international R&D sector, with projects being conducted from Europe to America. Alison Lees from the James Hutton Institute in the United Kingdom was recently a guest speaker at a grower workshop in Tasmania, and shares her experience of researching potato soil-borne diseases on page 18. Zebra chip is also highlighted in this edition, firstly through a conference in the United States that discussed psyllid monitoring and management in the spread of the disease (page 28) and also a research project

on the effect of planting time on the incidence of Zebra chip in potato crops in southern Texas (page 29).

Meanwhile, a group of local growers have returned from the 2014 Potato Industry Leadership and Development Mission to the United States and Canada, where they visited farms, research facilities and caught up with their colleagues on the other side of the world (page 26).

Looking closer to home, our regular edition of The Front Line explains key information that growers need to know about the Potato Spindle Tuber Viroid (page 20), while the successful round of workshops in the Potato Industry Extension Program is outlined on page 12. An update on the latest developments in PreDicta Pt is explained on page 8, and this edition also reminds readers of the important role that calcium plays in potato development (page 14).

As 2014 draws to a close, it's a great time to get your views on *Potatoes Australia*. We'd love to hear your feedback on what we're doing well and what we can improve on, to ensure that we continue to deliver the most relevant information to your farm in the new year. Please complete and return our Reader Survey on page 32 and you can go into the draw to win a fantastic prize from Netafim.

We wish all of our readers a safe and relaxing holiday season – see you in 2015 for many more exciting developments in the potato industry.



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Clinton Griffiths



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Continued success predicted for PreDicta Pt

IT'S BEEN A BIG YEAR FOR THE DNA SOIL TESTING TECHNOLOGY PREDICTA PT, WHICH HAS RECEIVED WIDESPREAD SUPPORT FROM GROWERS, PROCESSORS AND AGRONOMISTS ACROSS THE COUNTRY SINCE IT WAS LAUNCHED LAST AUGUST. *POTATOES AUSTRALIA* FINDS OUT WHAT THE POTATO INDUSTRY CAN EXPECT NEXT FROM THIS INNOVATIVE TECHNOLOGY.

It is imperative for a potato grower to be able to assess the risk of harmful pathogens being present in their soil and make an informed decision about the best way to address these risks before they plant the next crop. There's no doubt that having additional information at hand to help pinpoint the best area to plant a potato crop and the ways to manage the risk of disease occurring are powerful weapons that growers need to prepare for the season ahead.

Most potato growers would have already heard of PreDicta Pt, the innovative DNA soil testing technology that has

yielded much success in the industry since it was launched last August. This technology was the brainchild of a team of researchers at the South Australian Research and Development Institute (SARDI), which recently won the John Deere Productivity Partner Award at the 2014 AUSVEG Awards for Excellence in Cairns.

PreDicta Pt was the end result of an eight-year research project funded by Horticulture Australia Limited (now Horticulture Innovation Australia) using the National Processed Potato Levy and matched funds from the Australian Government. SARDI,

alongside the University of Tasmania/Tasmanian Institute of Agriculture and the Department of Environment and Primary Industries Victoria, were key collaborators on the project.

Overview

Essentially, PreDicta Pt is a valuable and cost-effective way for potato growers to make informed decisions about the potential risk of disease in their soils before they begin planting their crops. Specifically, it tests for soil-borne potato pathogens that cause Powdery Scab (*Spongospora subterranea*), Black dot (*Colletotrichum coccodes*) and Root knot nematode. Since its introduction, this technology has had a direct benefit on the productivity of the \$500 million potato industry.

Despite what its name might imply, the PreDicta Pt diagnostic test is about assessing risk, rather than predicting the diseases that could develop

in the soil. Potato growers can access PreDicta Pt via agronomists who are accredited by SARDI to interpret the results and provide advice on management options to reduce the risk of disease and potential yield losses.

Samples are processed fortnightly from mid-June to the end of November to assist with paddock and disease management planning. Once the soil is tested at SARDI's labs, the result provides a reading of whether levels for a certain pathogen are below detection, low, medium or high. When interpreting these results, it is vital that variables such as climate and potato variety (which can also increase or decrease the disease risk) are also taken into account when evaluating disease risk in a potato crop.

Expanding the service

While PreDicta Pt currently provides an assessment of disease risk for the three pathogens that can lead to Powdery scab, Black dot and Root knot nematode, there is potential to expand the risk assessment to test many more pathogens, a goal that is currently in progress (see Table 1 for more information). This includes DNA testing for the pathogens that cause Common scab, *Rhizoctonia solani* AG3 and AG2.1, as well as different species of Root knot and Root lesion nematodes.

According to SARDI Senior Research Officer Michael Rettke, there is still considerable scope to enhance the PreDicta Pt service by including interpretation of risk levels for these pathogens, along with the development of additional pathogen tests to quantify pre-plant risk of diseases such as Pink rot (*Phytophthora erythroseptica*), Fusarium

“ Looking down the track, SARDI is investigating options that would enable a greater choice of the tests to meet a particular client's needs. ”

- Michael Rettke.



SARDI researchers Michael Rettke and Dr Kathy Ophel Keller with PreDicta Pt.

(caused by *Fusarium* spp.) and Stubby root nematode (*Paratrichodorus* spp.).

“High quality seed is an important input for the production of high yields of quality potatoes. The PreDicta Pt technology can also be applied to quantify the pathogen levels in the peel of tubers, meaning the service could be expanded to include the testing of peel samples as well as soil samples,” Mr Rettke said.

“Considerable data and knowledge has already been generated towards the establishment of a peel testing service.”

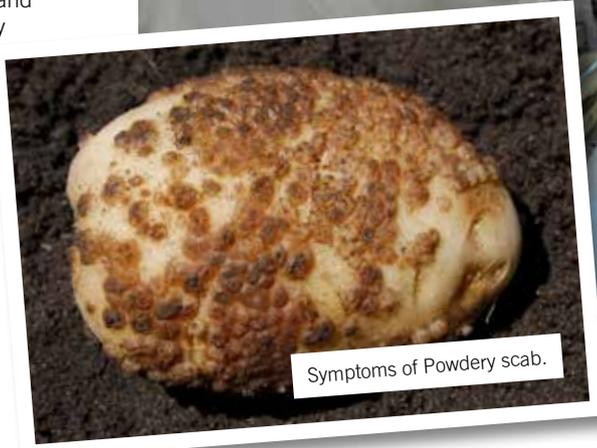
The next stage

Interestingly, the tests included in the PreDicta Pt service for potato growers are part of a suite of over 50 DNA pathogen tests that SARDI can perform on a soil sample.

As Mr Rettke explains, over 20 tests are also available through SARDI for beneficial soil organisms including Arbuscular



Testing in the SARDI soil diagnostic laboratory.



Symptoms of Powdery scab.

mycorrhizal fungi, Trichoderma and Free-living nematodes.

“Increasingly the focus of soil-borne disease management is on the promotion of a healthy

soil biota,” Mr Rettke said.

“Looking down the track,

SARDI is investigating options that would enable a greater choice of the tests to meet a particular client’s needs. Many tests within the current suite have applicability outside the

potato and grain industries, and expanding the service to other applications would not only assist other industries, but better underpin the service to potato growers and may facilitate addition of more tests to the PreDicta Pt service.”

The vegetable industry is of interest in particular, and SARDI has already conducted some research into building a more comprehensive testing service for vegetable growers on issues such as Root knot nematode.

However, now that the PreDicta Pt test is commercially available, Mr Rettke stresses that it is important to focus on ensuring the benefits of the technology are fully realised.

“Ideally this would include facilitation of a grower group program for on-farm demonstration of the use, decision-making and evaluation of benefits from using PreDicta Pt and implementing those decisions,” Mr Rettke said.

“While the adoption of testing by potato growers is important, the true worth of this technology will not be measured by the number of tests conducted, but by the change in practices made and the reduction in soil-borne disease this brings about.”

Table 1: Current PreDicta Pt tests		
Pathogen test		Disease
<i>Spongospora subterranea</i>		Powdery scab
<i>Colletotrichum coccodes</i>		Black dot
<i>Meloidogyne fallax</i>		Root knot nematode
Pathogen tests under development*		
Pathogen test		Disease
<i>Rhizoctonia solani</i> AG3		Rhizoctonia, Black scurf
<i>Rhizoctonia solani</i> AG2.1		Rhizoctonia
<i>Verticillium dahlia</i>		Verticillium wilt
<i>Streptomyces txtA</i> gene		Common scab
<i>Meloidogyne hapla</i>		Root knot nematodes
<i>Meloidogyne javanica</i> , <i>M. arenaria</i> , <i>M. incognita</i>		
<i>Pratylenchus penetrans</i>		Root lesion nematodes
<i>Pratylenchus neglectus</i>		
<i>Pratylenchus crenatus</i>		

*These research results are provided for information only as sensitivity and risk categories are not available for these tests.

For more information about PreDicta Pt, contact Michael Rettke on (08) 8303 9414 or email michael.rettke@sa.gov.au.



Elders Managing Director and CEO Mark Allison examines the produce at Adelaide Central Market.

Company boss shares Elders wisdom

FOLLOWING THE APPOINTMENT OF A NEW CEO WITH EXTENSIVE EXPERIENCE IN THE AGRICULTURAL SECTOR, ELDERS IS WELL ON ITS WAY TO CEMENTING ITSELF AS A PURE AGRIBUSINESS IN THE AUSTRALIAN MARKET. *POTATOES AUSTRALIA* SPEAKS TO ELDERS MANAGING DIRECTOR AND CEO MARK ALLISON ABOUT HOW HIS VALUABLE INDUSTRY EXPERIENCE WILL UNDERPIN THE CORE VALUES OF THE BUSINESS AS IT MOVES FORWARD.

A birthday is the perfect time to reflect on the past and refocus your direction for the future. If it so happens to be your 175th birthday, that's even better.

Just ask rural services company Elders and its Managing Director and CEO, Mark Allison. As the iconic agribusiness celebrated this impressive milestone in 2014, it also presented the chance to reassess the structure of the business and its key focus areas to prepare for the road ahead.

That repositioning began with the appointment of Mr Allison, who took over the reins of Elders on 30 April this year. Having grown up on a sugar cane and beef cattle property in far north Queensland, he's come a long way on his journey to the top job. It's a rise helped in no small part by the passion for agriculture which appears to be embedded in his genetic makeup, and a lengthy history of agribusiness experience.

After completing an Agriculture Science Degree at

the University of Queensland, Mr Allison went on to establish a 30-year career in the industry, starting as a research agronomist in the Darling Downs/Lockyer Valley horticultural region before running a suite of agribusinesses including CropCare, Wesfarmers Landmark, Farmoz (now Adama) and Grain Growers Limited. He then joined the Elders family as a Non-Executive Director.

"Fundamentally, I've always

loved agriculture," Mr Allison explained. "I believe it's a highly important and honourable industry sector and I have always wanted to make a contribution either through research, commercially, industry shaping policy development or in other ways."

Giving back to industry

Taking on the role of CEO at Elders was a challenge from the outset, but it was also an opportunity to give back to



top job for little more than 12 months, firstly as Executive Chairman and then as CEO, the results so far speak for themselves. In the past year, Mr Allison said that Elders has halved the injury rate within the business and its operating performance has turned around by \$75 million.

"We've also appointed two new agribusiness directors and we've got our term debt down to zero. We're basically into a phase now where we can run Elders like an agribusiness, which allows us to focus on our customers," he said.

"From an Elders viewpoint, moving to new banking facilities with flexible working capital lines on normalised commercial terms is such a key platform to actually run a business as a premier agribusiness in Australia."

The new Elders

Already, Mr Allison's experience has been invaluable both in terms of predicting where the industry is heading and putting the necessary structures



“...there is a very vibrant and positive culture within the horticultural industries that is driving deep innovation.”

- Mark Allison.

the industry. One of the first priorities was to strategically reposition the business to ensure a strong platform for future growth.

"At that time, we set four key priorities for Elders as an agribusiness. The first was around reducing injuries to our people, particularly in our livestock area and manual handling branches. The second was to improve operating performance because the business hadn't been performing as well as it could have been over the previous five years," Mr Allison explained.

"The third was to refocus our leadership renewal in the business and the fourth was around capital structure. One of the biggest issues for Elders over the years was very high term debt and we wanted to get that down so we could run the business and go back to focusing on key segments like horticulture."

Despite only being in the

in place to ensure Elders is well equipped to recognise the greatest opportunities for industry and growers alike.

"In terms of our near proximity to the Asian growth market, it seems to be the biggest opportunity for the wider industry. When I consider my time running an Israeli company and the prospect of horticultural products being exported from Israel into Europe for a significant profit, it's clearly achievable. I think we need to be highly innovative and highly focused, but the Asian market is clearly the opportunity," he said.

"I suspect in 175 years of Elders history, I'm the first agronomist to be the CEO. With that in place, I've already started the process of refocusing our technical service area to make an elite team and add

significant value all the way through to growers. With that will come speciality products and services, but the key platform will be refocusing our technical services."

In particular, he said that one of the critical issues is converting the R&D dollar into real benefits for growers, which is currently being addressed.

"With Free Trade Agreements and various reduction into international entry barriers, we have to be highly productive and highly efficient," he explained.

"The horticultural sector is a highly attractive sector from our viewpoint. My vision is to strengthen and grow our position by adding value to growers in that area. I'd like to see opportunities for joint research; I'd like to see

opportunities for joint capacity building in terms of education. That is really what Elders has done best over its history."

Vibrant industry

While Elders has faced its fair share of hurdles in the past few years, Mr Allison said there is a "legacy of goodwill" and strong and visible support from its customers and key stakeholders, which is deeply acknowledged by the business.

"Looking at the potato industry for instance, the vibrancy, the positive view, the innovation and willingness to control what can be controlled shows there is a very vibrant and positive culture within the horticultural industries that is driving deep innovation," he said.

"Elders is a core part of the rural regional Australia fabric. I can see there is significant support for Elders behind the scenes and that is appreciated. We hope to repay that with our enhanced services."



UK Potato Council Technical Executive Claire Hodge presents at the South Australian workshop.

R&D workshops a hit across the country

A POTATO INDUSTRY EXTENSION PROGRAM ROADSHOW IN LATE OCTOBER AND EARLY NOVEMBER BROUGHT SOUTH AUSTRALIAN, WESTERN AUSTRALIAN AND VICTORIAN POTATO GROWERS OUT IN LARGE NUMBERS TO R&D WORKSHOPS IN MOUNT BARKER, PEMBERTON AND WARRAGUL RESPECTIVELY.

The latest round of workshops featured a special international guest speaker, UK Potato Council Technical Executive Claire Hodge, who presented in South Australia and Western Australia, while the line-up of local speakers at each workshop was specifically tailored to suit the issues and concerns specific to the region and the state.

The first workshop was held on a balmy evening at the Mount Barker-Hahndorf Golf Club and attracted attendees from all areas of the South Australian potato industry. Seed, fresh and processing growers were joined by a number of other representatives, including washers and packers, agronomists and researchers. The workshop was chaired by local market gardener and recently elected AUSVEG Director, Danny De Ieso.

Dr Calum Wilson of the Tasmanian Institute of Agriculture spoke at the workshop and gave an overview of his studies into the best methods to avoid and manage Powdery scab. Dr Wilson highlighted the importance of using quality seed and maintaining the correct soil

moisture and temperature as key factors in minimising the risk of the disease. It was also noted that longer rotations can help with management and that DNA soil testing prior to planting can identify the abundance of soil-borne potato pathogens.

International insight

Ms Hodge gave attendees a thorough overview of the UK potato industry, including the value of the industry, volume of yield and production and climatic influences. Ms Hodge, who is based in Edinburgh, Scotland but travels throughout Britain visiting all potato growing regions, explained the nuances relative to each region throughout England, Scotland and Wales.

It was explained that over half of the UK's potatoes are grown in either Yorkshire or eastern England, while over 40 per cent of the potatoes grown in Scotland are for seed. Ms Hodge also highlighted that over 50 per cent of the UK's potatoes are grown by just 300 growers and noted that in 2012 there were over 2,300 growers registered in the UK, down from 20,000 in 1988. This was an

attrition rate that local growers were all too familiar with.

Damage minimisation also featured in Ms Hodge's presentation, with recommendations on how to best care for and handle potatoes in order to reduce the risk of bruising,

were also highlighted.

Crop protection company Adama rounded out the workshop, giving advice on herbicide plantback periods affecting potato crops and providing an overview of their Farm Hand mobile app.



Colmar Brunton's Jenny Witham and Fiona McKernan discuss the latest findings from Potato Tracker in Warragul, Victoria.

shattering and appearance. Ms Hodge led a UK Potato Council study into damage minimisation and spoke about the steps that should be taken, from planning and pre-planting to harvesting and grading. The importance of correct training and ensuring correct procedures are followed

Over to the West

Following a successful evening in Mount Barker, the road show continued on to Western Australia. The second workshop in the series was held in Pemberton in the state's south and saw the local hotel packed

to the rafters with growers and industry representatives.

The seed, fresh and processing sectors were once again represented, with growers travelling from as far as Harvey, Busselton and Albany to attend the workshop.

Ms Hodge shared the same presentation with Western Australian growers. Attendees noted the many comparisons between the UK and Australian industry, but were also interested in their differences as well. Ms Hodge's advice on minimising damage also proved to be popular with the local crowd, who are always working to ensure they produce potatoes with the highest skin quality possible.

Bayer CropScience also presented in Pemberton, giving an update on new chemistry

for the control of *Rhizoctonia* in potatoes.

Biofumigation briefing

Joining Ms Hodge in Pemberton was Tasmanian fresh potato grower Darren Long of MG Farm Produce. Mr Long has had great success using biofumigation to increase the health and quality of his soils, and the process has ultimately led to the enhanced management of soil-borne pests and diseases on his farm.

Mr Long gave attendees an insight into the process of selecting, planting and maintaining green manure crops and how their biologically active compounds can increase soil health. Growers were highly interested in Mr Long's story of success and many left inspired to investigate the best method to

improve their own soil quality.

While he is a strong advocate for the benefits that are achievable through the biofumigation process, Mr Long did however add that he didn't think it is the "silver bullet" that some believe it may be.

Victorian focus

The final workshop in the series was held at the Warragul Country Club in Warragul, Victoria, where more than 40 growers, agronomists and industry members gathered to hear about the latest R&D developments in the industry.

Jenny Witham and Fiona McKernan from consumer research agency Colmar Brunton presented the latest results from the Potato Tracker project, while Michael Rettke

from the South Australian Research and Development Institute (SARDI) presented on management techniques of soil-borne diseases.

Attendees were also treated to presentations from representatives from Yara on crop nutrition management and from Dow AgroSciences on green peach aphid control in potatoes.

The feedback from the workshops was hugely positive, with guests welcoming the presentations and engaging with the presenters after the formal proceedings, as well as taking the opportunity to network with fellow industry members.

The three workshops combined attracted almost 120 attendees overall, which further cements the industry's great support for the Potato Industry Extension Program. Growers, agronomists and supply chain representatives alike all relished in the opportunity to hear from international and local industry experts, and gain further information on levy-funded R&D projects.



Attendees at the Western Australian workshop listen to Darren Long discuss the use of biofumigation on his potato crops in Tasmania.



Further information on the UKPC's Minimising Damage project, including the full guide, can be found at: www.potato.org.uk/growing/bruising
This project has been funded by Horticulture Innovation Australia (HIA) using the Fresh Potato Levy and matched funds from the Australian Government. Project Number: PT11004.

Potato Tracker continues to quiz consumers

The Potato Tracker project investigating Australian consumers' purchasing habits and perceptions of potatoes is continuing on, with the latest wave of insights being released by research firm Colmar Brunton.

Each wave of research is updated with two new ad-hoc questions that help provide further insight into consumer behaviour and perceptions, while online tracker questions remain consistent throughout the project. In Wave 2, the ad-hoc questions asked what the consumer's most important factors were when purchasing potatoes and what information should be displayed in store with potatoes.

The second wave of research found that future purchase intent was strong in younger age groups, with those aged

between 18-24 indicating a high desire to continue purchasing potatoes in the future.

It was also discovered that consumers are keen to be presented with detailed information on the provenance and origin of produce, as they want to know exactly where their potatoes were grown. This is consistent with the view that Australian consumers have a strong preference to locally grown produce and would like this to be clearly labelled on products.

Triggers to purchase continued to be taste and ease of preparation, with the convenience of potatoes proving to be one of the greatest drivers of consumption. A barrier to purchase was diet and weight management concerns, with consumers believing they already consume enough potatoes for their needs.



The Potato Tracker project will continue with a wave of new findings released each month. Full copies of each report can be found on the AUSVEG website at www.ausveg.com.au/potatoes/potato-consumer-research.htm.
This project has been funded by Horticulture Innovation Australia (HIA) using the Fresh Potato Levy and matched funds from the Australian Government. Project Number: PT13015.

A balanced diet: Why potatoes need calcium too

IT IS ESSENTIAL FOR POTATO GROWERS TO REALISE THE IMPORTANCE OF A HEALTHY, WELL-BALANCED DIET WHEN IT COMES TO THEIR POTATO CROPS. CALCIUM IS ONE OF THE NUTRIENTS THAT IS OFTEN OVERLOOKED IN THE GROWING PROCESS, YET IT PLAYS A CRUCIAL ROLE IN PRODUCING HEALTHY TUBERS THAT ARE PACKED WITH NUTRITION AND LOOK APPEALING TO CONSUMERS AT THE POINT-OF-SALE.

Put simply, a good nutritional program provides the ideal opportunity for a grower to produce a crop that realises its full potential.

In the case of potatoes, all nutrients have a role to play but, according to Yara International Agronomic Competence and Training Director Barry Bull, calcium is one of the “forgotten nutrients” in potato growing while its peers – namely nitrogen, phosphorus and potassium – take centre stage.

Mr Bull presented on this topic at the 2014 AUSVEG National Convention in Cairns and outlined the many benefits that the nutrient can provide to a potato plant.

“I think it’s fair to say the majority of growers do not pay enough attention to nutrition, and calcium is an essential part of balanced nutrition. It has major benefits not only in terms of growing a high-yielding crop, but also a highly saleable crop,” he said.

“In fact, calcium is the third most consumed nutrient and

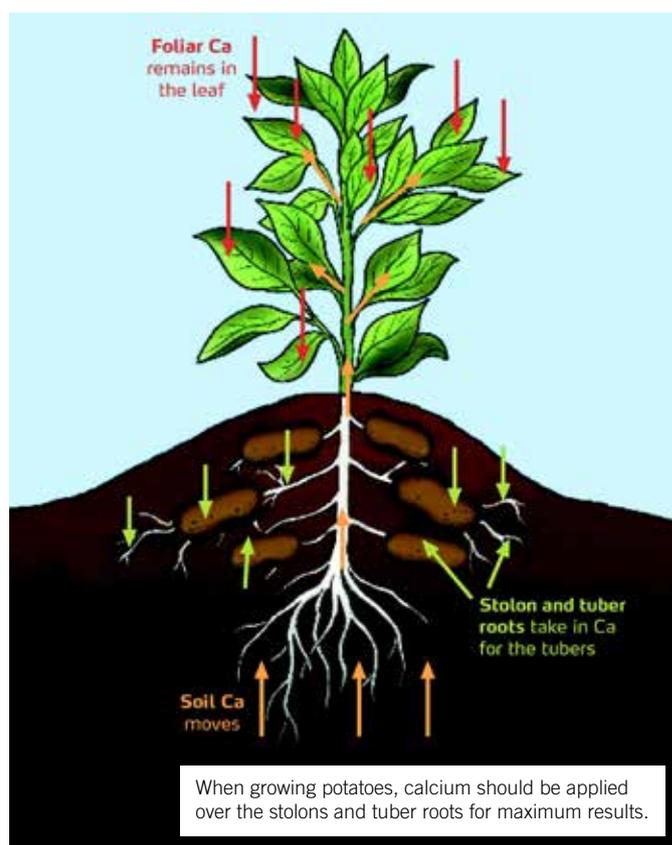
at the moment it’s getting insufficient consideration by the majority of potato growers.”

Precise application

Mr Bull explained that, despite its inherent benefits, applying calcium to a potato plant can be difficult. In essence, growers need to ensure that the nutrient is effectively transferred down the plant itself to the tubers in the soil.

“Calcium is difficult to get to the tubers. As it moves into the plant with the uptake of water, it mostly accumulates in the older leaves of the plant. From here it doesn’t move down into the tuber, like other nutrients do. So growers need to understand some of the dynamics that are happening with the nutrients to get them where they need to be,” he said.

“In the case of potatoes, this can mean placing the calcium over the stolons and the developing tuber. Calcium must be continuously available during tuber growth, and small





Calcium strengthens the cell walls in potatoes and reduces the incidence of diseases such as Soft rot (Erwinia, pictured).

tubers have the highest uptake in this instance. However, the application of too much calcium can also prevent tuber growth, so there is a fine balance.”

Mr Bull noted that some

growers in Australia have introduced a calcium program into their potato crops and have achieved better results. In South Australia, growers that applied calcium frequently through their

pivots found a major reduction in the instance of Black spot, and a reduction in the number of tubers infected. These observations were supported by subsequent research conducted by the Department of Primary Industries and Regions South Australia (PIRSA), which found the frequent application of calcium not only reduced the incidence of Black spot by 65 per cent, but also reduced the number of infected tubers by 55 per cent.

“This decision resulted in a more saleable product – and that’s why you grow potatoes. You don’t grow potatoes to throw them away; you grow potatoes for people to buy,” he said.

Ongoing benefits

While Mr Bull recognises that all nutrients are important in potato production, calcium in particular has an increasing effect on the tuber’s size, skin finish and resistance to bruising, as well as cooking quality. It can also help reduce tuber bruising, Soft rot (Erwinia) and Internal rust spot.

“Calcium strengthens the cell walls, which makes it hard for fungi to enter the cell and feed on the nutrients to make the fungi grow. Calcium also improves tolerance to heat stress and improves skin finish and brightens its colour, especially in reds. This can help to provide a better price in the market,” he said.

“In the research we’ve done over time, I’m quite confident to say that adding an adequate amount of calcium in the right place in the potato plant can help achieve a 50 per cent reduction in an infection such as fungi, which is huge.”

Despite these encouraging results, Mr Bull stressed that it is important to remember that calcium is not a “magic ingredient”. To be effective, calcium must be part of a balanced nutritional program that includes nitrogen, phosphorus and potassium. Finally, these nutrients need to be applied:

- At the right time – at tuber initiation and tuber development.
- In the right place – over the stolons and tubers.
- At the right rate – up to 80kg/ha of calcium is ideal.
- In the right form – calcium must be soluble for immediate effect.



For more information on calcium nutrition in potatoes please contact AUSVEG:
Phone: (03) 9882 0277
Email: info@ausveg.com.au

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Q&A Young grower profile

Name: Matthew Cocciolone

Age: 32

Location: Mandogalup (packing shed), Binningup and Pemberton (farm locations) in Western Australia

Works: Beta Spuds

Grows: Royal Blue, Rodeo, Ruby Lou, Romeo, Virginia Rose, Carisma, Cashmere Gold, Cabaret, Emma, Malin, Maranca, Dutch Cream, Nicola, Kipfler plus Nadine, White Star and Delaware.



Mandogalup

Binningup

Pemberton

How did you first become involved in the potato industry?

I started in our family business in 2008 after 10 years of working in hospitality as a chef. The family business consists of my father Carlo Cocciolone (Managing Director) and my brother Jason Cocciolone. Between Jason and myself we co-ordinate and look after the logistics of 25,000 tonnes of potatoes annually through our packing facility in Mandogalup, Western Australia.

Beta Spuds grows over 10,000 tonnes from our own farms in various locations, which includes Binningup and Pemberton.

What is your role in the business?

My major role in the business has grown into an administrative role, co-ordinating supply, sales and packing logistics. The operations involved in running an efficient wash/packing facility means the team has joint responsibilities and we have set tasks to complete to ensure the business runs effectively.

Jason and I dedicate our time to work with our growers in co-ordinating supply and new variety development, and we oversee the wash/packing operation. We work jointly as a team to ensure seed supply/quality is sufficient, plan our growing seasons and ensure the farms are using best practice to ensure a quality crop.

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

Every day is always different, and each day presents a new challenge.

The WA potato industry for ware potatoes is approximately 50,000 tonnes annually, and ensuring our market share of 25,000 tonnes is grown according to the market's needs is rewarding for us all. We thrive on being productive and ensuring supply of potatoes to our customer base, and keeping the consumers happy.

What are the biggest challenges that you face as a grower?

Each summer seems to be getting longer, hotter and is taking a toll on quality. Water management and supply is critical to ensure crops are grown according to consumers' needs, with clean skins and free of any internal defects.

Industry is working together

to help solve these issues, but I believe if we can eliminate internal defects on potatoes, it will have a higher level of consumer confidence in our crops, and in turn increase sales during the summer months.

What do you see as some of the greatest threats facing the Australian potato industry?

One of the potential threats to the wider industry is that consumers lose interest in eating white flesh varieties, and consumption declines. Given this, Beta Spuds has lead the charge in WA for growers to transition to yellow flesh varieties, and move away from white flesh.

Taste and flavour should drive the potato category to the next level, and give consumers more confidence in eating more spuds.

Also, educating consumers seems to have been lost over

the years, with misconceived ideas that potatoes are unhealthy and high in carbohydrates. We really need to start promoting the major health benefits of eating potatoes and encourage consumers to be aware of these health benefits.

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

WA is limited in its capability to export into overseas markets due to a regulated system. I would like to see more opportunity for WA growers to increase their capabilities to grow more potatoes with confidence, so we can target unestablished export markets of WA-grown potatoes.

The federal and state governments need to provide some export incentives for potatoes into other parts of the world so we can be more competitive on price overseas, and try to offset the high cost of growing potatoes in Australia.



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

I have always been inspired to work in politics, and would love to be involved in local government as a councillor.

Where do you see yourself in five years?

Having a successful business model and key staff in place to continue to grow our business in our farming and wash/packing operations. Surrounding ourselves with dedicated personnel makes our daily tasks more achievable and realistic.

International researcher shares knowledge with Tassie growers

NO MATTER THE LOCATION, EACH SECTOR OF THE POTATO GROWING WORLD FACES DIFFERENT CHALLENGES AND BEING ABLE TO GAIN AN INSIGHT INTO INTERNATIONAL RESEARCH PROJECTS CAN PROVE TO BE INVALUABLE TO LOCAL GROWERS. *POTATOES AUSTRALIA* SPEAKS TO UK RESEARCHER DR ALISON LEES ABOUT HER RECENT PRESENTATION ON SOIL-BORNE POTATO PATHOGENS AT AN INDUSTRY WORKSHOP IN TASMANIA.

In order to develop effective strategies to minimise disease risk in potato production, a good understanding of the overall factors that drive the incidence and severity of diseases caused by seed- and soil-borne pathogens is essential. However, current knowledge of the epidemiology of individual potato diseases is quite varied.

Dr Alison Lees is a research leader at the James Hutton Institute in the United Kingdom and specialises in the diagnostics, epidemiology and control of a wide variety of potato diseases. Dr Lees recently gave an overview of her work to local potato growers at a workshop hosted by the Tasmanian Institute of Agriculture (TIA) at Forthside Research Farm in Forthside, Tasmania, which focused on predicting and managing soil-borne diseases in potato.

Disease management

Dr Lees began her presentation by giving an overview of vegetable and potato production in the UK. She reminded growers that many factors need to be taken into account when using diagnostics for the management of soil-borne potato diseases. Interpreting diagnostic results to put an appropriate disease management strategy into place means considering soil inoculum level, in combination

with cultivar, chemical control, agronomy and storage regime.

"It is very important to interpret diagnostic results so growers can use the information in a practical way. To do that, you need some knowledge of the epidemiology of the diseases and an understanding of environmental and agronomic factors," she said.

"You need to understand the relationship between inoculum levels and disease in order to predict disease in a field."

Dr Lees went on to say that a soil sampling strategy underpins the reliability of soil testing and its importance should not be underestimated. She also provided growers with some examples of diagnostic tests that have been applied successfully to common soil-borne diseases in the UK.

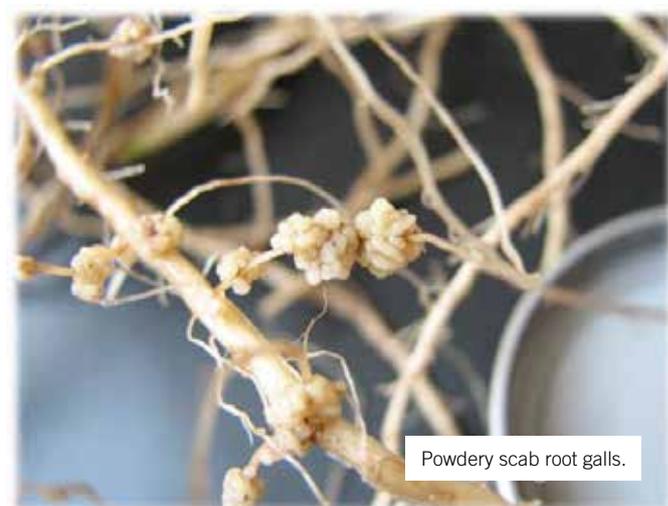
Black dot

The James Hutton Institute, in collaboration with partners at Scotland's Rural College, ADAS and the Food and Environment Research Agency in the UK, conducted an array of experiments on Black dot (*Colletotrichum coccodes*) funded by the UK Potato Council. The effect of seed- and soil-borne inoculum on tuber disease was studied in glasshouses and commercial fields.

"Whilst the results showed that we couldn't get a good



L-R: Jason Scott (TIA), Calum Wilson (TIA), Alison Lees (James Hutton Institute, UK), Robert Tegg (TIA), Philip Beveridge (TIA) and Krishna Subbarao (UC-Davis, USA) at the Forthside workshop in Tasmania.



Powdery scab root galls.

relationship between seed-borne inoculum of Black dot, tests under controlled environmental conditions and in the monitoring fields showed a good relationship between soil-borne inoculum and disease, which formed the basis of a diagnostic that could be used in practice," Dr Lees said.

Potato cyst nematode

The research presented on Potato cyst nematode (PCN) was conducted by Dr Lees' colleague, Dr Vivian Blok, and

focused primarily on the effect that temperature has on the life cycle of PCN.

"*In-vitro* tests, controlled environment tests and field trials have shown that *Globodera pallida*, the species of PCN most common in the UK, is able to have a second hatch during the growing season which has implications for the number of eggs in the soil and therefore control of the disease," she explained.

"At the moment the researchers are trying to develop a model for PCN population



dynamics and temperature, so that the number of generations of PCN that can survive and the number of eggs remaining at the end of the growing season for different soil temperatures can be predicted. They've done the work to underpin that and they're developing the model for growers."

Powdery scab

Powdery scab in potatoes causes significant losses in the UK, as well as Australia, but it is still a very difficult disease to control as the pathogen is

particularly long-lived in the soil.

"There are very few effective control measures for Powdery scab and the disease needs to be controlled through an integrated strategy that may include fungicides, host resistance and predictive diagnostics," Dr Lees explained.

"We have done some work to correlate soil inoculum

levels with disease and varietal differences, showing that cultivar resistance is good for controlling the disease. Unfortunately, the cultivar choice is not always down to the individual farmer and therefore susceptible cultivars continue to be grown widely, contributing to high levels of disease and also increasing soil inoculum levels."

Free-living nematodes

Dr Lees also highlighted research conducted by her colleague Dr Roy Neilson on free-living nematodes that transmit Tobacco rattle virus (TRV).

"This project tries to quantify and control parasitic free-living nematode populations and the damage

ongoing collaboration has given added value in allowing both teams of researchers to collect two lots of data from different countries in one year and to regularly compare and discuss experimental results.

"We have slightly different tests in the UK but we have compared them to the PreDicta Pt tests so we know they are comparable and we are getting the same kind of results for applying these diagnostics. That's why it was such a good collaboration," she said.

However, this information is nothing if it's not presented in an accessible format for growers to digest in order to effectively manage the risk of disease in their crops. Dr Lees maintained that the researchers always involve growers so they can best interpret the results.



Potato cyst nematode.

The bottom line

Dr Lees left growers with a strong message: although there is a wide range of soil pests and pathogens in potato crops and a wide range of tools and approaches to combat each of them, any decision made on-farm must be underpinned by well-validated diagnostics and soil sampling

strategies.

"Some of these diseases are very difficult to control and it's all about the growers having the information to help them make decisions to reduce disease. We need to understand the epidemiology to assign disease risk and advise on management, so the more information a grower has, the easier it is to make decisions about choice of field, cultivar, fungicide or storage," she explained.

"There are very few shortcuts – you can't just develop diagnostic tests and expect to predict the disease. You have to do all the work that goes in between."

by TRV to improve potato yield and growth. This is in the context of the withdrawal of some approved nematicides in Europe," she said.

"The effect of a changing environment on free-living nematode populations is currently being researched and the researchers have developed a rapid molecular pre-plant test to assess the damage threshold levels of nematodes on potato cultivars. The field distribution of the nematode can be mapped with the aim of conducting precision nematicide applications within the field."

Local collaboration

Dr Lees and her UK colleagues have worked closely with local researchers in the Australian Potato Research Program Phase 2 (APRP2) in order to validate a diagnostics project from the UK that closely resembles our very own PreDicta Pt test (see page 8 for more information). This



Black dot symptoms.



For more information on the diagnosis and management of soil-borne potato diseases, contact alison.lees@hutton.ac.uk. The TIA workshop was part of a project supported by Horticulture Innovation Australia.

What you need to know about PSTVd

AS THE FIRST VIROID TO BE DISCOVERED, POTATO SPINDLE TUBER VIROID (PSTVD) IS OWED A CERTAIN LEVEL OF RESPECT. INITIALLY DESCRIBED IN THE 1920s, THE VIROID CAUSAL AGENT OF PSTVD DISEASE IN SOLANACEOUS CROPS SUCH AS POTATO WAS NOT IDENTIFIED UNTIL ALMOST 50 YEARS LATER. TODAY PSTVD IS A GLOBAL PEST THAT HAS BEEN DETECTED IN THE UNITED STATES, CANADA, SOUTH AMERICA, AFRICA, EUROPE, CHINA, NEW ZEALAND AND AUSTRALIA, WRITES AUSVEG BIOSECURITY AND SPECIAL PROJECTS CO-ORDINATOR DR JESSICA LYE.



Plant diseases can rarely be assigned a cut and dried checklist of symptoms. This is especially true of PSTVd infection, where host plant health can be affected to a severe degree or not at all.

The severity of PSTVd symptoms depend on the viroid strain, plant cultivar, stage of plant development and environmental conditions. A faster rate of viroid replication at higher temperatures make greenhouses potential hot spots for the disease.

Due to the variability of PSTVd disease symptoms, mild infection can be confused with nutrient deficiency or toxicity, spray damage or insect damage. Aggressive infections result in reduced plant size, unusual tuber shape (infected potatoes often have a pointed appearance), reduced tuber size, thin stems and leaf distortion. The numerous strains of the viroid worldwide add a layer of complexity to the identification of PSTVd infection.



PSTVd often results in the reduced size and yield of potato tubers (left) compared to healthy potatoes (right). Photo courtesy of European and Mediterranean Plant Protection Organization Archive, Bugwood.org.



“ Prevention relies on the implementation of biosecurity practices at the farm gate and national level. ”

Potato tubers showing symptoms of infection with PSTVd. Photo courtesy of William M. Brown Jr., Bugwood.org.

What are viroids?

Viroids are infectious strands of nucleic acid and are the smallest agents known to cause serious diseases in plants. The ability to survive in sap and crop debris after the plant has died is a primary characteristic of viroids.

Like viruses, they multiply only in living cells. Unlike viruses, viroids are not packaged in a protein coat – a structure that assists viruses with gaining entry into host cells.



Taking a closer look at PSTVd

PSTVd gains access into host cells through plant wound sites. Once in the cell, PSTVd has the ability to hijack cellular machinery. Plant cell proteins

make copies of the viroid and cut it to size for further replication. Multiplication of PSTVd has the side-effect of shutting down the function of important plant cell genes. It is this ‘shut down’ of gene function that may lead to disease symptoms.

Long range transmission

PSTVd is thought to have spread among potato germplasm collections all over the world via infected true seed. In addition, PSTVd can spread from one generation to the next via infected potato tubers. Once established, PSTVd infection is persistent and infected plants can become a permanent source of infection for neighbouring crops.

Aphids are also a mechanism for transmission of PSTVd. However, aphid vectors mainly become a concern when Potato leaf roll virus (endemic in Western Australia) is also present in leaf tissues. In this situation, PSTVd is assumed to be packaged within the viral coat protein, which would protect the viroid during transmission by aphids.

Australian presence

In 2001, PSTVd was first detected in Australia. It has since been reported in tomatoes in Western Australia, Queensland, New South Wales and South Australia. During 2011 and 2012, single site detections occurred in greenhouse-grown tomatoes in New South Wales, Queensland and South Australia.

Past incursions have prompted more stringent border security in the form of onshore testing regulations for the viroid in imported potato propagative material (true seed, minitubers, microtubers and tissue cultures) and tomato seed.

PSTVd management

Effective PSTVd management involves prevention of infection and viroid eradication. *Prevention* relies on the implementation of biosecurity practices at the farm gate and national level. Farm gate

biosecurity practices have a strong positive impact where plant pest risk management is concerned. Appropriate signage for demarcation of visitor parking, keeping farm gates locked, regular cleaning of vehicles and farm equipment, and maintaining a ‘clean footwear’ policy are a few measures that can be implemented in a short timeframe.

Viroid *eradication* can be achieved by destruction of PSTVd-infected plants, together with those from an adequate buffer zone, coupled with thorough cleaning of equipment and greenhouses where infected plants have been grown.

While the commercial host range is largely restricted to solanaceous species such as potato, tomato and eggplant, a 2010 study conducted by researchers at the University of Western Australia found that even non-solanaceous hosts (Thornapple and Annual saltbush) can harbour PSTVd. Therefore, keeping growing areas clear of potential incubation systems is important for reducing PSTVd risk. Overwintering of the viroid in weeds during a fallow period can prolong the infection period and put subsequent crops at risk.

Finally, crop rotations involving non-PSTVd host species help eliminate infected plants. When cultivation of PSTVd host crops resume, extra monitoring for PSTVd symptoms and testing for the viroid is advisable.

THE BOTTOM LINE

- The main hosts for PSTVd are potato and tomato.
- PSTVd is seed-borne. Testing measures apply for imported true potato seed, mini- and microtubers.
- Symptoms include malformed tubers, stunted plant growth, thin stems and leaf distortion.
- Destruction of infected plants and planting with non-host crops can help with viroid eradication.
- Any unusual plant pest should be reported through the Exotic Plant Pest Hotline (1800 084 881).



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



with Scott Mathew

A guide to on-farm cleaning practices in sprayers

AS POTATO GROWERS TRY TO MAXIMISE THE PRODUCTION ON THEIR LAND AS EFFICIENTLY AS POSSIBLE, THE TIME PERIOD BETWEEN CROPS IS SHORTENING AND GROWERS ARE LOOKING TO BROADEN THEIR CROPPING SYSTEMS. THIS CAN RESULT IN A NUMBER OF DIFFERENT CROPS BEING GROWN AND SPRAYED AT SIMILAR TIMES, REINFORCING THE NEED FOR THOROUGH ON-FARM CLEANING PRACTICES, WRITES SYNGENTA TECHNICAL SERVICES LEAD SCOTT MATHEW.

Spraying a number of different crops at similar times heightens the risk of crop damage. Traces of previous crop protection products may remain in the tank, either as a mixed solution in the spray lines or as contamination in the spraying system (such as residues on and in filters).

Therefore, cleaning out spray tanks and booms is essential. This will:

- Protect a sensitive crop from injury due to contaminated sprayers;
- Protect people working with the sprayer; and
- Protect the sprayer and its components.

I constantly hear that cleaning is “a real pain” and many growers hope they can get away without it – most times, they do. However, the importance of cleaning will undoubtedly ring true if serious damage is caused to a growing crop as a result of poor cleaning practices.

Cleaning guidelines

- To avoid drying and hardening of crop protection residues, and potential corrosion and damage to equipment,

clean the sprayer immediately following an application. Also ensure that you clean the sprayer in an area that will not contaminate water supplies, streams or crops. Also make sure the area is inaccessible to children, pets and livestock.

- If you are continuing with the same crop protection product in the same crop the next day, flushing with water is sufficient.
- If you are switching crop protection products or crops, a more thorough cleaning may be required. If you are moving on to a different crop, follow any decontamination procedures on the label.

Where no directions are given, the following procedure is recommended (again, ensuring that you clean the sprayer in an area that will not contaminate water supplies, streams or crops and is inaccessible to children, pets and livestock):

1. Drain the sprayer tank and lines and rinse the tank, boom and lines with water for a minimum of five minutes.

2. Fill the tank with clean water and a recommended tank cleaning agent (e.g. All Clear) as per the label.
 - a. Flush the solutions through the entire sprayer system.
 - b. Add more water to fill the tank and agitate the solution for at least 15 minutes and flush through the nozzles.
 - c. Drain the tank.
3. Remove the nozzles, screens and strainers. Clean them separately in a bucket of cleaning agent and water.
4. Rinse the entire system with clean water.

Following these cleaning procedures will help ensure you spray safely this season.

Q

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.

UK research: The benefits of late-season water management

A THREE-YEAR PROJECT ON LATE-SEASON WATER MANAGEMENT IN POTATO CROPS, FUNDED BY THE UK POTATO COUNCIL, HAS FOUND THAT MAINTAINING SOIL MOISTURE AT AN ADEQUATE LEVEL IN THE LEAD-UP TO DESSICATION OR HARVEST CAN REDUCE THE INCIDENCE OF BLACK SPOT BRUISING AND DOES NOT HINDER SKINSET DEVELOPMENT.



As growers reach the final stages of potato production, a number of season-ending concerns such as bruising and skinset come to mind. In many seasons, growers tend to neglect the impact of forgetting to water a crop as it reaches the end of its development.

Previous observations of late-season water management have shown that short-term dehydration in a crop can increase the potential for tubers to bruise. Also, studies have shown that commercial crops with high soil moisture deficits (SMDs) prior to defoliation are associated with greater rejections from bruising, even if the crop was well-irrigated earlier in the season. SMD relates to the amount of water needed to bring the soil moisture content back to field capacity.

With these issues in mind, the UK Potato Council commissioned research to determine the effects of late-season water management on bruise susceptibility and skinset in potato crops. The three-year project ran during the 2011-13 seasons and was conducted by Dr Mark Stalham, a research scientist at NIAB Cambridge University Farms (CUF).

Project overview

This study was conducted over three seasons (2011, 2012 and 2013). Six experimental crops used two types of

irrigation regimes – one was rainfed, while the other was irrigated to maintain SMDs below the level that would limit yield. Additionally, 50 commercial crops had their irrigation scheduled by the CUF Potato Irrigation Scheduling Model, with the end-of-season irrigation management being determined by the growers.

Six random areas were sampled with each commercial field and tubers impacted within 24 hours of harvesting. To assess bruising, a falling bolt impact test was used on tubers from the experimental and commercial crops to determine their sensitivity to bruising. Meanwhile, a rumble barrel was used to assess the skinset of tubers from the detailed experiments.

Key results

In four out of six detailed experiments, there was a reduction in bruising incidence where SMDs were maintained below the limit for yield in the three weeks prior to desiccation or harvest of the crop. This was compared to allowing the SMDs to increase to 20-30mm above the limit.

Natural rainfall impacted two of the experiments, resulting in no effect of irrigation on bruising. Conversely, in the other four experiments,

allowing the SMD to increase substantially above the limit for yield resulted in significant increases in bruising compared to the irrigated plots.

In commercial crops, there was no overall relationship between Black spot bruising incidence and any measure of SMD (mean, maximum, accumulated or stress SMD) during the three-week period prior to desiccation or 50 per cent canopy senescence (ageing of the plant). When grouping the data by variety, there was again no relationship between bruising and SMD in most varieties.

However, the within-field variation in bruising was often very large and there also may have been confounding factors (for example soil compaction, nutritional status or uneven irrigation distribution from rainguns) associated with different fields, which distorted any relationship between bruising and some measure of soil or crop water status.

In all detailed experiments, late-season irrigation management had no effect on skinset.

Suggested action

Rather than switching off irrigation and allowing the crop to survive on soil reserves or rainfall in dry periods, potato growers should aim to maintain moderate SMDs when the crop is close to desiccation or harvest.

The researchers suggest that growers should monitor SMDs later in the season and irrigate where necessary. The crucial objective is to maintain moderate rather than low SMDs, as the latter can have a negative impact on the quality of the tuber (including skinset) and soil conditions for harvest.



For more information, visit UK Potato Council: www.potato.org.uk/publications/r445-late-season-water-management.

A fresh attitude in challenging times

FARMING CAN BE A BIT OF A GAMBLE AT THE BEST OF TIMES – BUT A HEALTHY ATTITUDE AS WELL AS SUFFICIENT PLANNING AND PREPARATION CAN HELP TACKLE ANY ISSUES THAT MAY ARISE. DIMI KYRIAKOU CHATS TO CLINTON GRIFFITHS OF WILLOW PRODUCE IN SOUTH AUSTRALIA ABOUT THE CHALLENGES OF POTATO GROWING AND HOW HE IS DETERMINED TO ADAPT TO THE TIMES.

A pure love of the land is the reason Clinton Griffiths goes to work every morning – and when your office is none other than a farm bordering the spectacular cliffs of Walker Flat along the Murray River in South Australia, it makes the process that much easier.

It's certainly a tough life for any farmer, but Clinton makes the most of the trials that are thrown his way, adapting as best he can to an ever-changing environment. Best of all, it's done with a sense of humour and a smile.

"I enjoy working outside and growing spuds because it's a reasonably good crop to grow and it can be rewarding – or so they tell me," he laughs.

"Being in the great outdoors

and working in the country – it's just quiet and nice. We overlook the river and we've got some nice cliffs as a backdrop, so it's a bit of a picture to work in sometimes. It beats working in an office any day."

Walker Flat is set in the heart of the Murraylands about 100km from Adelaide, where deep ochre-coloured cliffs shoulder the Murray as it snakes its way through the state. For those who are fortunate enough to live there, it's a picture of pure serenity. Luckily for the Griffiths family, it also lends itself well to the fine art of potato growing.

"The climate can be quite good so we can grow most times of the year depending on the frosts.



"It's reasonably dry so we have to do a lot of controlled irrigation which can help with disease management and trialling crops. It makes it a little bit more expensive, but that's how it goes," he says.

Embracing technology

Clinton, alongside his wife Hayley and three daughters, forms the face of the third generation family business that grows and harvests potatoes for the fresh produce market in Australia. Although hard work and taking small steps to achieve a long-term goal is part of the business plan for Willow Produce, there is still plenty left to learn and Clinton is certainly not afraid to endure some risks in order to make production on the farm as efficient as possible.

At the moment, the Griffiths use water pumped from the river to irrigate their potato crops either by centre pivot, permanent sprinklers or handlines – this offsets the average rainfall of 300 millimetres per year that falls on the area. As it turns out, the pivots just so happen to be the next project in line for adaptation once the current season of potatoes have been harvested.

"We're looking at upgrading our centre pivots by installing telemetry systems, which will enable remote monitoring via

smartphone technology. It's in place so it's going to happen in the new year – just in case it stuffs up I don't want to test it out while the crops are still growing!" Clinton laughs.

"So we're going to put it in the off-season when everything is a bit quieter. We've chosen it from an efficiency point of view and also for keeping an eye on what's going on so you get a bit more control. When you leave the farm, you hope everything keeps on running and if something stops, you don't know where the problem is. It's just that point of being a bit more efficient and a bit smarter in what we do."

This decision, among the many that Clinton and Hayley make on a day-to-day basis, is just a reflection of the need to "move with the times", as Clinton says. Despite the

seemingly never-ending list of challenges that come with farming, he is always ready to clear the next hurdle.

"I like the challenge that working with Mother Nature can bring. She gets a bit angry sometimes and we just have to deal with it as best we can," he says.

"Every year there is a new challenge so we basically work it out as we go in terms of wind factor, storm damage, the drought situation or pest problems. We make a plan every year but we have to tweak it whenever something gets chucked at us, and we try to adapt as fast as we can to rectify the problem. When you've only got a three-month window to grow potatoes, you have to be pretty quick at making these decisions because the time flies by."

The road ahead

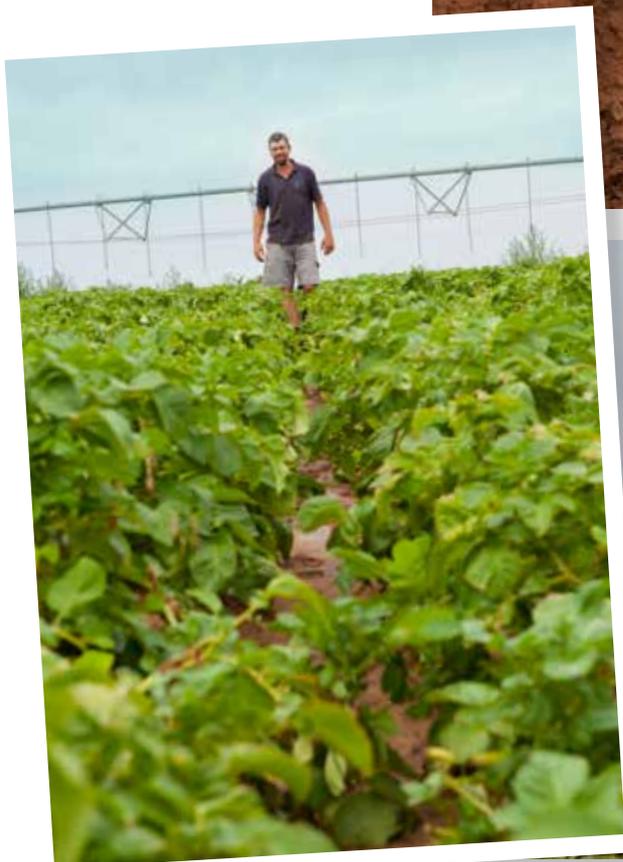
Clinton points out that, in time, the recent China-Australia Free Trade Agreement (ChAFTA) will undoubtedly have an impact on the potato industry and perhaps change the way it currently operates.

"It's a really interesting time at the minute as we see how that takes effect and how the supply and demand takes control. But the potato industry is always going to be good because it's such a widely eaten product. There's always going to be demand there, it's just who gets paid for what really."

For now, living a sustainable and comfortable life – preferably with as little stress as possible – will definitely keep that smile on Clinton's face as he continues to tackle all the challenges that come his way.



Photographs by Bridgette Lade.



On a mission: Local growers learn from US and Canadian colleagues



AN EAGER GROUP OF LOCAL GROWERS RECENTLY TRAVELLED TO THE POTATO MECCA OF IDAHO IN THE UNITED STATES, AS WELL AS THE CANADIAN 'POTATO BELT' OF NEW BRUNSWICK AND PRINCE EDWARD ISLAND FOR THE 2014 POTATO INDUSTRY LEADERSHIP AND DEVELOPMENT MISSION. THE EVENT GAVE PARTICIPANTS A UNIQUE OPPORTUNITY TO ANALYSE THE PRODUCTION SYSTEMS OF THEIR COUNTERPARTS ON THE OTHER SIDE OF THE GLOBE.

In August, nine Australian potato growers and industry representatives set off on a mission to learn from some of the international industry's largest and most innovative producers. Their location of choice – the United States and Canada – is widely recognised as one of the most productive potato growing regions in the world.

Over the course of the 10-day mission, the group visited fresh, processed and seed potato growing operations. Stepping away from the farm, the group

also stopped at some impressive packaging and distribution facilities, logistics operators and research stations. The mission allowed the group to get up close and personal with a variety of emerging R&D, and network with international industry leaders.

Land of the free

The mission began in the United States, where the group visited Simplot growers in Boise, the capital of Idaho. This state is one of the largest potato growing

regions in the world, producing potatoes for both the processed and fresh markets, both domestically and internationally. The growers toured a series of large operations and witnessed major potato harvesting for processing. The systems used by growers in the large-scale harvesting, transportation and storage of potato produce were highly organised to ensure absolute efficiency.

While in Idaho, the group also visited researchers from the University of Idaho Research Station in Twin Falls. Here, the group learnt about various potato pests and their impact on the potato industry in Idaho, as well as the university's efforts to identify and eradicate threats as they occur. After departing Idaho, the group travelled to Pasco, Washington, where they visited a highly advanced and efficient seed processing

plant run by Syngenta Seeds. Attendees were given a tour of the plant and were briefed on the processes involved in sorting and distributing seed, including a detailed run-down of the plant's state-of-the-art corn seed producing facilities.

Across the border

After departing the United States, the group headed east to the major potato growing province of New Brunswick in Canada. The New Brunswick Department of Agriculture hosted the group and gave them exclusive access to facilities run by the Canadian potato industry in Fredericton. The tour included visits to the New Brunswick Plant Propagation Centre, which is responsible for tuber variety cultivation and storage for the Canadian industry, as well as the Agriculture and Agri-Food

“ The mission provided growers with an excellent opportunity to learn from their international counterparts. ”



Participants examine a potato trial on Prince Edward Island.



The University of Idaho Kimberly Research and Extension Centre provided an insight into various potato pests and their impact on the industry.



These harvested potatoes are on the way to a Simplot factory for processing.



The New Brunswick Plant Propagation Centre is responsible for tuber variety cultivation and storage for the Canadian industry.

Canada Potato Research Centre, where pertinent industry innovations and developments were being investigated. An Agricultural Certification Services lab, where seed potatoes were scrutinised for certification standards, was also on the agenda.

The group then travelled to the New Brunswick 'Potato Belt', a region in the south of the province that is responsible for growing the majority of New Brunswick's potato produce. Participants visited several seed and processed potato growers, as well as an innovative packaging and distribution facility.

The following day, the group travelled to Prince Edward Island where representatives from the Prince Edward Island Potato Board provided attendees with a guided tour of the island's potato growing operations and research facilities. The island is Canada's largest potato producing province, with over one million tonnes of potatoes produced annually. Produce from the island is largely grown for the domestic market; however, successful and large-scale potato export operations are

also in place and are currently shipping potatoes to more than 30 countries.

Attendees were left with a lasting impression of Canadian potato production, following a visit to the island's Inspection and Disinfection Station where quarantine and standards inspections are carried out



Participants toured the Syngenta seed processing facility in Pasco, Washington.

on all potato produce arriving and departing the island. The group then visited local growing operations, including processed potato, seed potato and fresh potato growers, as well as a packaging operation.

Ongoing benefits

The mission provided growers with an excellent opportunity to learn from their international counterparts. Importantly, the group was given the chance to

learn more about emerging R&D and network with international industry leaders, as well as their peers.

There is no doubt the participants brought back plenty of new-found knowledge to share with their colleagues and perhaps inspired them to apply some of the same techniques and processes witnessed in the United States and Canada to their operations in Australia.



A full project report will be released in coming weeks and will be made available on the AUSVEG website www.ausveg.com.au. Project Number: PT13704.

Conference highlights further links between Zebra chip and psyllids

SIGNIFICANT PROGRESS HAS BEEN MADE IN THE AREA OF ZEBRA CHIP DISEASE, PARTICULARLY IN TERMS OF ITS SPREAD THROUGH PSYLLIDS. AUSVEG BIOSECURITY ADVISER DR KEVIN CLAYTON-GREENE GIVES AN OVERVIEW OF THE LATEST RESEARCH PROJECTS INVOLVING PSYLLID AND ZEBRA CHIP SURVEYING AND MONITORING AT THE RECENT 2014 SCRI ZEBRA CHIP CONFERENCE IN OREGON IN THE UNITED STATES.

The 2014 SCRI Zebra Chip Conference provided an opportunity for attendees to catch up with the latest in R&D from the United States, New Zealand and Europe.

Zebra chip disease is caused by a bacteria known as *Candidatus Liberibacter solanacearum* (Lso), a relatively new organism to science. Since 2009, five different strains of the bacteria have been identified and these are carried by at least three species of psyllids, which makes the disease all the more difficult to decipher.

Of particular threat to Australia is Strain A, which is found in New Zealand and the United States. It infects Solanaceae, causing Zebra chip in potatoes – a significant problem that potato growers from across the ditch know all too well. This strain is carried by the Tomato potato psyllid (TPP).

Psyllid monitoring and management were two topics discussed in depth during the conference, to provide further insight into their role in the spread of Zebra chip disease.

Psyllid monitoring

A number of areas in the United States have psyllid monitoring programs in place. Surveying usually involves a 50 metre transect starting at the crop edge and perpendicular to the boundary with yellow sticky traps at five or 10 metre intervals.

In 2014, psyllid numbers were generally the lowest

since at least 2009 and some states (such as North Dakota) recorded no TPP at all. The severe winter of 2013/14 as well as the drought conditions in Texas and California are thought to have played a role in this significant reduction.

The monitoring program showed that the Lso strain carried by TPP and also the TPP biotype varies from year to year, while data from Texas revealed that early season TPP counts provided a good indicator of Zebra chip for the forthcoming season.

Psyllid management

The research conducted in this area has found that late season infection can play an important role in Zebra chip and that disease symptoms appear to increase in storage. It has been shown that infection as late as

two days before harvest can appear in potato tubers after a few months of storage.

Research also shows that Lso continues to develop in tubers after vine kill, even though TPP no longer visits plants after vines are desiccated. For growers, this means that where there is a significant time delay between vine kill and processing, Zebra chip can continue to develop in tubers.

These studies show that the movement of Lso within the plant from leaves to tubers is much more rapid than previously thought and as a result, late season TPP infestations are now seen to pose a significant threat.

Local significance

It is clear that Australia is a world centre of psyllid diversity and may be particularly at risk from *Liberibacter* and its

acquisition by native psyllids.

Therefore, there is sufficient evidence to suggest that local potato growers should exercise extreme caution around the potential for potato tuber transmission to daughter plants.

The conference also reinforced the finding that the use of broad spectrum insecticides, such as pyrethroids, is probably the worst thing you can do if you suspect psyllids, as it can make the problem worse. Other discussion points and research findings from the 2014 SCRI Zebra Chip Conference will be included in future editions of *Potatoes Australia*.



A potato crop affected by Zebra chip. Photo courtesy of Whitney Cranshaw, Colorado State University, Bugwood.org.



For more information on Zebra chip disease, contact AUSVEG:
Phone: (03) 9882 0277
Email: info@ausveg.com.au

Zebra chip: Timing is everything in Texas potato crops



A research project from Texas A&M University-Kingsville assessed the impact of planting time on the incidence of Zebra chip in potato crops in Texas.

AT THE INTERNATIONAL HORTICULTURAL CONGRESS IN BRISBANE EARLIER THIS YEAR, US RESEARCHER DR GRETA SCHUSTER FROM TEXAS A&M UNIVERSITY-KINGSVILLE GAVE A PRESENTATION ON NEW RESEARCH WHICH STUDIED THE IMPACT OF POTATO PLANTING TIME ON ZEBRA CHIP INCIDENCE IN SOUTHERN TEXAS.

Potatoes are a big industry in the US state of Texas with a value of around \$92 million per year. However, growers face losses of more than \$25 million per year and much of this is due to Zebra chip disease, associated with the bacterium *Candidatus Liberibacter solanacearum*, and transmitted by the psyllid *Bactericera cockerelli*, commonly known as the Tomato-potato psyllid.

Zebra chip is a disease found across the world, but since its initial US appearance in southern Texas in 2000, the disease has caused serious damage to potato production in the state, often leading to the abandonment of entire fields. The disease severely effects potato plant growth, and tubers infected with Zebra chip often have dark stripes that become more visible when fried or cooked.

Approach

A research project from Texas A&M University-Kingsville sought to assess the impact of planting date on the incidence of Zebra chip in potato crops in Texas. The research was conducted at two locations: Pearsall, in the south central region of Texas, and the other 400 kilometres south along the northern Mexico border of the Lower Rio Grande Valley in Weslaco, Texas.

Non-treated experimental

potato plots were planted in mid-December to mid-February for four years from 2008-11, and the incidence of Zebra chip was estimated at the harvest of each potato growing season.

The seed variety Atlantic was planted each month in a large plot of 4-8 rows 100 metres long. In each season, the plots were separated by about four kilometres to minimise movement of the psyllids from one plot to another. No insecticide was applied to the potatoes throughout the study to allow the psyllids to colonise the potato plants.

Adult psyllids were monitored weekly by yellow sticky traps around the plots for the years 2008-09. In 2010-11, a KISS Sampler was used – this is a new mechanical method for sampling selected beneficial and pest insects and consists of a modified leaf-blower.

Potatoes were hand-harvested about 90 days after planting in each season, and the incidence of Zebra chip in fresh tubers was estimated by making a latitudinal cut near the stem end. If all the fresh tubers from a plant were asymptomatic, two or three tubers from the plant were collected and fried to check for the typical 'stripe' symptoms of Zebra chip.

Findings

The study found that in the Lower Rio Grande Valley,



Potato tubers infected with Zebra chip often have dark stripes that become more visible when fried or cooked.

potatoes planted early were more affected by Zebra chip than those planted later, with the infection rate ranging from 23.3 per cent to 72.7 per cent for potatoes planted in December; 20 per cent to 44.6 per cent for those planted in January; and 5.4 per cent to 31.2 per cent for those planted in February. Due to erratic environmental conditions common to Pearsall during the study, researchers of this study were unable to gather sufficient data to support either late or early planting for reduction of Zebra chip incidence.

The reason underlying the greater incidence of Zebra chip in potatoes planted early in the season in southern Texas is not known. However the differences in incidence of Zebra chip in potatoes in the Lower Rio Grande Valley could be explained by fluctuations in infection rate of *Candidatus Liberibacter solanacearum* in overwintering and migrating

psyllids. These psyllids are believed to overwinter along the Rio Grande River between Texas and Mexico and migrate northward with increasing warm temperatures.

Summing up

Information gathered by this research will help lessen Zebra chip losses of potatoes in the southern Texas by giving growers further information on the timeliest planting of potato crops. It will also help growers to appropriately protect their crops through effective insecticide use and other disease management strategies against Zebra chip.

Photos courtesy of Adrianna O. Segura and Jennifer Richmond, TAMUK.



For more information visit <http://zebrachipscri.tamu.edu>.



Gold Coast to host 2015 Convention

AUSVEG is pleased to announce that the 2015 National Convention will be held at Jupiters Gold Coast from 25-27 June.

The 2015 Convention follows on from the tremendous success of the 2014 National Convention in Cairns, which was attended by over 1,100 domestic and international delegates.

“The National Convention, Trade Show and Awards for Excellence attracts more members of the Australian horticultural industry than any other event, making it a must-attend event

for growers, suppliers, wholesalers and agribusinesses alike,” AUSVEG Manager – Marketing and Events Lauren Winterbottom said.

“AUSVEG is planning to up the ante in 2015, with the Gold Coast Convention promising to be the most successful yet and a number of exciting developments soon to be announced.”

Showcase your business

As the 2015 National Convention is expected to generate much interest from

around Australia and the world, it is also the perfect opportunity to showcase your business at the event's popular Trade Show.

As always, booth space will sell out quickly, so be sure to get in early to secure your position at Australia's leading horticultural event.

To register and download the Exhibitor Brochure, please contact AUSVEG via email at convention@ausveg.com.au or call (03) 9882 0277 or visit www.ausveg.com.au/convention.

New horticultural body announced

Horticulture Innovation Australia Limited (HIA) is the new research, development and marketing body that will support the investment of levy and matched government funds in Australia's \$9.5 billion horticulture industry.

The establishment of HIA follows a recent independent report into the performance of Horticulture Australia Limited, which recommended a change to a new, grower-owned research and development company.

HIA will be led by Chairman Selwyn Snell and Deputy Chairman

Robert Clark, alongside its Board Members Ridley Bell, David Cliffe, Susan Finger, David Moon, Stephen Morrow, Mark Napper and Peter Wauchope.

AUSVEG CEO Richard Mulcahy welcomed the announcement of the new HIA Board and said it was paramount that the interests of Australian vegetable and potato growers are met within any new structure, particularly in terms of the continuity of important research programs and initiatives.

New pre-emergent option for potatoes

Lack of new mode of action (MoA) herbicide options for use during early crop development and prior to row closure can affect a potato grower's ability to effectively control Annual ryegrass and Nightshade in crops, which is critical to minimise weed competition and increase potato yield and quality.

In welcome news, Syngenta

has recently registered BOXER GOLD®, a new option for selective pre-emergent control of a range of broadleaf and grass weeds in potato crops.

Containing 800 g/L prosulfocarb and 120 g/L S-metolachlor, the new registration includes control of Annual ryegrass (including control of Group A and Group D resistant populations),

Barnyard grass, Nightshade, Capeweed, Fat hen, Fumitory, Glossy nightshade, Redroot amaranth, Summer grass, Toad rush suppression of Common thornapple and Fierce thornapple.

The combination of Group J and Group K modes of action can help with resistance management and broaden the spectrum of weeds controlled.

Syngenta recommends applying the product after planting, following the first cultivation and no later than 25 per cent potato shoot emergence. It should be applied to moist soil, and irrigation or rainfall is required within seven days for effective weed control.



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Reader Survey

1. What sector of the industry do you represent? Please tick:

- Grower (seed) Grower (fresh) Grower (processed)
 Processor Supply chain Researcher
 Government Industry official
 Other _____

2. What is your age group? Please tick:

- 18-24 25-34 35-44
 45-54 55+

3. What crops do you grow?

4. Which sections of *Potatoes Australia* are of most interest to you? Please tick:

- News R&D Articles
 International R&D Young Grower Profiles
 Grower Profiles Feature articles
 Industry Columns New products/Advertisements

5. On a scale of 1-5, how useful do you find the R&D articles included in *Potatoes Australia*, with 1 being "Not useful at all" and 5 being "Extremely useful". Please tick:

- 1 2 3 4 5

6. Does R&D content in the magazine influence the way you run your business? Please tick:

- Yes No

7. How many people read your copy of *Potatoes Australia*?

8. Where do you get your information from? Please tick:

- Industry publications Consultants
 Processing company Independent agronomists
 Resellers Government organisations
 Grower groups Other _____

9. Do you have any comments/suggestions regarding the magazine?

10. Are you interested in receiving further information regarding the 2015 National Convention on the Gold Coast from June 25-27 2015? Please tick:

- Yes No

Thank you for your time

Complete the survey for your chance to win!

Please return your leaflet to AUSVEG.

Fax: 03 9882 6722 Mail: AUSVEG, PO Box 138 Camberwell, Victoria 3124 Email: info@ausveg.com.au

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The winner of this prize will receive a vegetable garden drip kit, valued at \$100 RRP. The kit includes Netafim's Miniscape dripperline and all the accessories and connectors to irrigate an area of up to 50 square metres. Please note: This prize can only be won by growers.

Tackling green peach aphid infestations in potatoes

The destruction that can be caused by green peach aphids is nothing new to potato growers, as they become increasingly concerned about virus transmission and its impact on the health and overall yield of their crops.

This concern was particularly evident in South Australia during the winter season, where a wet summer followed by mild autumn conditions led to an explosion of green peach aphid in crops such as canola. To exacerbate matters, the aphids were loaded with the debilitating beet western yellows virus (BWYV), also called the turnip yellows virus, which stops infected crops in their tracks.

During this time Transform™ insecticide, a product with a new mode of action from Dow AgroSciences, was applied to large areas of South Australia, Victoria and New South Wales in a bid to prevent green peach aphid infestation and

slow the spread of the virus in susceptible crops.

Over 400,000 hectares were sprayed with the product and the company received very positive feedback. The results were made more significant by the fact that neither the organophosphate, nor synthetic pyrethroid or the carbamate insecticides used to manage this problem in the past, worked on the resistant species of green peach aphid attacking the canola.

Recent trials and commercial applications in horticultural

crops to control green peach aphid also produced excellent results.

A new mode of action

Transform insecticide gives potato growers another weapon to use in the war on sap-feeding pests.

The product acts rapidly once it has been applied, having both contact and systemic activity. It is an outstanding aphicide with useful activity on a number of other sap-feeding pests (consult the label for more information).

Dow AgroSciences recommends that Transform should be applied before infestations become unmanageable and to severely restrict the spread of debilitating viruses.

Looking ahead, Dow AgroSciences is working with the Grains Research and Development Corporation to obtain a registration for the use of the product in winter pulse crops for the 2016 winter season.

For more information, contact Dow AgroSciences: www.dowagro.com/au

An explosion of green peach aphid in canola crops during the winter season saw over 400,000 hectares in South Australia, Victoria and New South Wales sprayed with Transform insecticide from Dow AgroSciences, with excellent results. The product is also suitable for use in potato crops.



CALENDAR of events



25-27 June 2015

AUSVEG National Convention

Where: Gold Coast, QLD

What: The National Convention is the biggest event in Australian horticulture, providing local and international delegates with an opportunity to forge relationships with members of the industry. In 2015, delegates will travel to Jupiters on the Gold Coast. This is a must-attend event for growers, suppliers, wholesalers, researchers and agribusinesses alike.

Further information:

Please contact AUSVEG on (03) 9882 0277, email convention@ausveg.com.au, or visit www.ausveg.com.au/convention

28-30 July 2015

9th World Potato Congress

Where: Beijing, China

What: The World Potato Congress is dedicated to supporting the global growth and development of the potato. It is the first time the Congress will be held in the Yanqing, Beijing region and will be staged at the base of the Great Wall of China. The Congress will be held concurrently with the China Potato Expo and China Potato Congress. It is expected that more than 900 delegates will attend, including growers, researchers, producers, traders, processors and manufacturers.

Further information:

www.potatocongress.org



Stu Jennings

Here we are again – spring has well and truly sprung, and we're heading into the depths of summer.

We have noticed that most areas are really drying out quickly, so let's hope that some rain decides to show up sooner rather than later. As farmers we have to learn to deal with all that Mother Nature gives us, and I believe that having good mates to complain to can really help! That's the whole reason

that YPP was created, and now with 140 people on the Facebook page, it's a great way to see what people are up to and share your knowledge and current challenges with your peers.

Since we began the YPP page, I myself am starting to get a bit more of an idea about which areas are harvesting and which areas are growing and irrigating at the same time. This wider view of our world really helps you to feel less isolated, so if you are not on board and would like to be, jump on the Facebook page.

We have had a good response to the photo comp that closes on 15 December – probably already done and dusted by the time you are

reading this – and we will announce the winner of the GoPro Hero+3 package and the pick of the photos in the next edition of *Potatoes Australia*.

In the meantime, have a safe and merry Christmas. Enjoy plenty of time with your family and your mates and let's look forward to a productive 2015.

All the best,

Stu



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