

potatoes

australia

October/November 2012

Tim Heysen

Art imitating life:
a Heysen heritage

Chipping away
at the market:

The Australian industry
and market-led success

Cultivating
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**FRONT COVER:**

Tim Heysen

Photograph by Tanya O'Leary

John Brent

AUSVEG Chairman

Threats to the stability of our national biosecurity system are a serious issue which demands the attention of every member within our industry, as well as the senior politicians and decision makers that direct national policy. I am pleased to see that industry's concerns regarding the proposal to import fresh potatoes from New Zealand (NZ) for processing in Australia have been listened to and supported by prominent political figures at the federal, state and local levels.

Since the release of the Department of Agriculture Fisheries and Forestry (DAFF) Biosecurity's review of the importation conditions for fresh potatoes from New Zealand, AUSVEG, alongside members of the industry, has expressed serious concern regarding the impending incursion of the Tomato-potato psyllid and the devastating Zebra chip disease. The known vector not only

affects potatoes, but can also wreak havoc on capsicum and tomato crops.

AUSVEG mounted a fierce political and media campaign, and fostered invaluable relationships with key political figures, to ensure the risks associated with fresh potato imports are clearly understood. An onslaught of media followed AUSVEG's release of an animated YouTube video which depicted several Federal Ministers as children playing a video game, insinuating that Australia's key decision makers are toying with the Australian potato industry.

As a direct result of the efforts of growers, members of the industry, AUSVEG and several key political figures, a Senate enquiry will take place to examine the validity of the scientific evidence which underpins the Import Risk Analysis (IRA) for potatoes from New Zealand.

Given current hardships placed on Australian growers such as the rising costs of inputs, they do not need the added pressures of having to deal with a foreign pest and disease. Any risk or threat to the stability of Australia's \$9 billion horticulture industry should be taken seriously and adequate measures put in place to ensure its survival and longevity.

With the livelihood of several industries at stake, I implore the Minister for Agriculture, Fisheries and Forestry and DAFF to examine the current scientific research on the psyllid and the disease it transmits, recognise the danger that the psyllid and Zebra chip poses to our produce sectors, and take action to protect our growers who underpin the success of Australia's horticulture industry and the quality of Australian produce.




John Brent
Chairman
AUSVEG

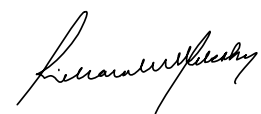
Richard Mulcahy

AUSVEG Chief Executive Officer

Encouraging young people into the Australian horticulture industry has never been more important than it is today. There is a need to address a skills and labour shortage, to support pioneering research and innovation, and to prepare young leaders. The next generation of growers, researchers and service providers must be in a position to steer our industry in the right direction to ensure its future success. Similarly, training and inspiring the next generation is imperative to promote the viability and longevity of the horticulture industry. In order to be adaptable and flexible as an industry, to seize new opportunities and respond to forthcoming challenges, we need to nurture innovative thinking and allow the ideas of young people to be heard, not stifled.

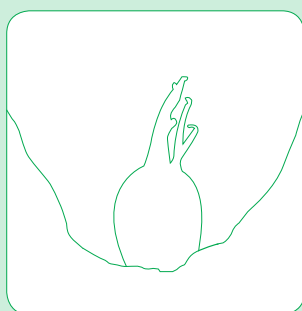
In this edition of *Potatoes Australia*, I am thrilled to see an interview with, undoubtedly, one of the youngest growers across the country. James Weir of Crookwell, New South Wales, is only 18 years old. Yet James, like many other young Australian potato growers, possesses the same passion and enthusiasm for working in the sector as those who have been involved in the industry for decades. Clearly, the fresh food sector has many career opportunities which can be offered to our young Australians, and there is no doubt that young Australians are passionate and enthusiastic. The question for the Australian horticulture industry to ask itself is 'how do we entice our youth into the sector?' Perhaps, as an industry, we need to look more closely at what makes young people 'tick'.

I am pleased to see the commencement of new projects for both of the flagship industry publications, *Potatoes Australia* and *Vegetables Australia*. A means to showcase the latest innovations in horticulture R&D and to promote the leading efforts of growers throughout Australia, the publications have continued to develop both aesthetically and in terms of content. Unquestionably, the magazines resonate with their readership, continue to be valued publications and are an essential communication device for industry and its members. *Potatoes Australia* and *Vegetables Australia* will continue to disseminate relevant and important industry news and R&D information to the horticulture industry and tell the stories of those stoic individuals who work in it.

Richard J Mulcahy
Chief Executive Officer
AUSVEG

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Editorial

This edition of *Potatoes Australia* includes a feature on an influential and renowned member of the international potato community which provides an insight into the activities of our overseas counterparts. Commercial Director at HZPC, Herman Verveld, details the goals, challenges and successes of the venture into decommunitising the potato. Mr Verveld discusses the complexities involved with steering the potato industry towards the needs of the consumer, how the Australian sector can become more market-led and the importance of consumer research and communication (pg 16).

Celebrating one of the youngest potato growers in the country, this edition of the magazine contains an interview with 18 year-old Crookwell-based grower, James Weir. With a contagious passion and enthusiasm for the sector, James explains why he believes a career in the horticulture industry is so enjoyable and worthwhile (pg 12).

Prominent South Australian potato grower and Vice Chair of the South East Potato Growers Association, Tim Heysen, is featured in this edition. Mr Heysen imparts some of his thoughts on issues facing the Australian potato sectors, what our politicians need to do to ensure its viability, and the ongoing effects from a glut of imported produce. This

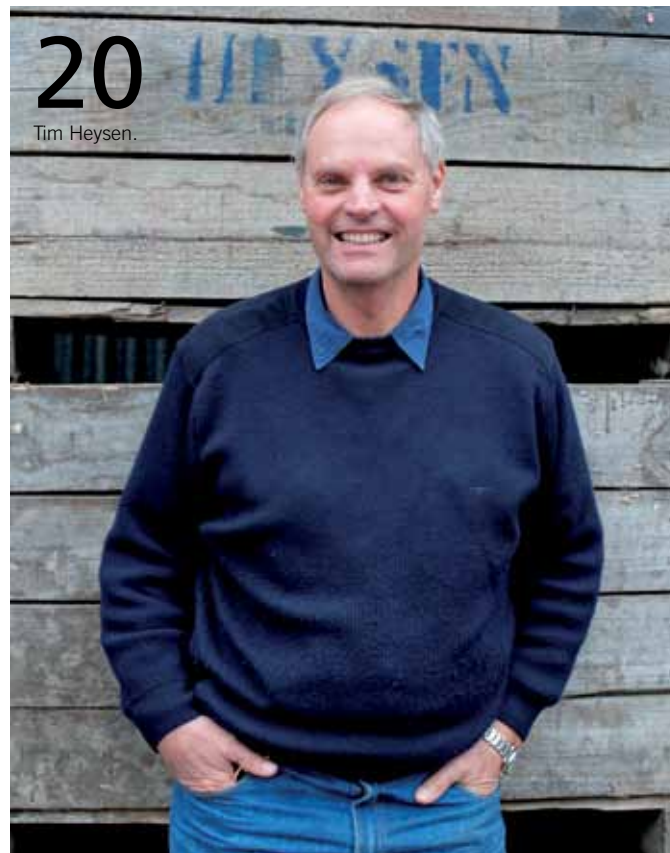
feature is one which echoes the thoughts held by many members of our industry (pg 20).

Representatives from AUSVEG, alongside other key members of the Australian industry, attended the 2012 Horticulture New Zealand Conference. Biosecurity issues featured prominently in speaker sessions and discussions, with several Ministers and key decision makers questioned by members of the industry. Readers will enjoy this edition's International R&D update which does not shy away from the controversial (pg 33).

R&D coverage for this edition includes an article investigating the improved management of White-fringed weevils. Tasmanian Institute of Agriculture researcher, Dr Paul Walker, details the interesting techniques used to identify how the weevils locate host plant roots in the soil (pg 24).

We also examine an Australian potato breeding program which is developing new potato cultivars for commercial release. An interview with project leader Tony Slater of the Victorian Department of Primary Industries explains the research which is taking advantage of improved knowledge of the potato genome and marker-assisted-selection for new and improved potato varieties (pg 14).

The South Australian Research



and Development Institute's on-farm soil fumigation experiment - which is investigating the effect nematodes have on yields, profits and quantities of tubers for processing - is examined in this issue. There are a number of practical outcomes for the potato industry (pg 26).

This edition's Potato Extension column investigates some of the key international websites

available for potato growers and other members of the industry to investigate the extensive online world of R&D, industry news and information (pg 28).

As well as a selection of industry news, *Potatoes Australia's* regular industry columns, Soil solutions (pg 32) and Ask the industry (pg 30) are featured.

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News in brief

Potato Extension Program materialises in South Australia

AUSVEG has held two enormously successful Potato Extension workshops in South Australia recently, with an array of representatives from all areas of the industry in attendance.

The South Australian Potato Extension Workshops, held in the key growing regions of Murray Bridge and Mount Gambier, presented growers, researchers, processors and key members of the industry with the opportunity to learn about current R&D projects.

The first workshop, held in Murray Bridge at the local

Golf Club on 20 August, was attended by almost 50 people. And the second, held in Mount Gambier at the Country Comfort Hotel on 28 August, was attended by over 30 people.

“The enthusiastic, engaged and large crowds which have attend these Potato Extension Workshops to date is a testimony to the industry’s

desire to gain a greater understanding of R&D,” said AUSVEG Manager - Special Projects, Christopher Ritchie.

Aaron Haby, a grower from Walker Flat and recent attendee on the Grower Study Tour to Belgium and the United Kingdom, chaired the Murray Bridge event. The Mount Gambier event was chaired by Tim Heysen, a grower from Kalangadoo and Vice Chair of the South Australian South East Potato Growing Association (SEPGA).

Mr Ritchie opened the evening of each workshop outlining the Potato Extension Program and illuminating key findings from the World Potato Congress held last May. Key speakers for the events were from the South Australian Research and Development Institute (SARDI). Dr Kathy Ophel Keller discussed the development of a DNA testing service for soil-borne pathogens and its forthcoming commercial roll-out. Mike Rettke spoke on results from field DNA soil tests to date and what this reveals about crop management, variety and environmental conditions and Dr Barbara Hall discussed research work being undertaken on methods to resist and control Root-knot nematode.

The Murray Bridge audience was also treated to a presentation from Technical Manager at AgVita Analytical, Darren Hicks, who discussed real-time nutrient analysis of

potato petioles (the stalk which joins a leaf to a stem) which can help growers better understand yield and quality. Mr Hicks conducted a live demonstration of the petiole sampling process for the audience using a potato plant.

“The first year of this program has been about raising awareness of R&D programs and to communicate R&D in a succinct and understandable manner. It is pleasing to see that a number of growers are hearing about R&D programs for the first time as a result of the Extension Program. Those who have been previously exposed to the research are nonetheless taking away something new from these events, and it’s certainly an opportunity to monitor research progress,” said Mr Ritchie.

Attendees at the South Australian workshops praised the progress of SARDI’s research, and openly acknowledged the worthwhile investment of levy funds into R&D.

AUSVEG would like to thank the key speakers, the chairs and all those who attended the events.



Murray Bridge Extension Workshop.



Mount Gambier Extension Workshop.



For more information please contact:

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Project: PT11004



Anti-import campaign results in Senate Inquiry

A strong and persistent campaign on behalf of industry has gained significant national and international attention in an attempt to stop the importation of fresh potatoes from New Zealand for processing in Australia.

Focusing on several senior Federal Ministers via relentless media and political campaigning, AUSVEG, alongside members of the industry and prominent political figures, have forced a Senate

Inquiry into the importation of fresh potatoes from New Zealand for processing in Australia.

With the release of the Department of Agriculture Fisheries and Forestry (DAFF)

Biosecurity's review into the importation conditions for fresh potatoes from New Zealand, members of the industry have expressed serious concerns with the likely probability of consignments bringing both the Tomato-potato psyllid and Zebra chip disease to Australian shores.

In the last six years alone, the New Zealand potato industry has experienced devastating losses of up to \$200 million, in an industry worth \$600 million, through both loss of product and the efforts required to control the psyllid and the spread of disease.

To ensure the issues affecting growers were brought to the attention of decision makers, AUSVEG contacted every Member of Parliament with a summary of its scientific submission in response to the Draft Import Risk Analysis released by DAFF.

As part of the political and media drive to raise awareness on the issue, AUSVEG released a YouTube video which suggested that Australia's key political leaders were toying with Australia's biosecurity. In the clip, Prime Minister Julia Gillard, Agriculture Minister Joe Ludwig and Trade Minister Craig Emerson are depicted as babies playing a video game, ignorant of the downfall of Australia's potato industry which takes place around them.

Generating a large amount of interest across metropolitan and rural media outlets including radio, print and online, the

animated video gained wide political interest.

On 7 September, potato growers gathered alongside parliamentary representatives from the National Party and AUSVEG representatives in the key potato production region of Ballarat, Victoria to rally against the position being taken by the Federal Government. Nationals Senator for Victoria, Bridget McKenzie, and Nationals Member for Western Victoria, David O'Brien MLC, attended the event to show their support for the cause and voice their concerns on the issue.

On 12 September, Senators Richard Colbeck, Nick Xenophon, Fiona Nash, John Madigan and Bridget McKenzie moved that the Rural and Regional Affairs and Transport Committee examine the validity of the scientific evidence which underpins the Import Risk Analysis for potatoes from New Zealand.

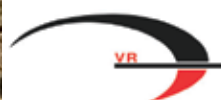
With the impending Senate Inquiry, it is hoped that Australia's key decision makers will no longer ignore the scientific evidence in front of them, that the real risks of an incursion of the psyllid and Zebra chip from New Zealand are acknowledged, and that common sense will prevail in order to protect the livelihoods of Australia's growers and our horticulture industry.

For information on the AUSVEG biosecurity campaign or to watch the animated segment visit www.ausveg.com.au

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The sunshine state: a golden setting for an AUSVEG Convention

Perpetual sunshine, vibrant nightlife and world-renowned beaches are only some of the reasons why millions of travellers journey to this energetic city each year.

The glittering backdrop of the Gold Coast will now play host to the highly anticipated 2013 AUSVEG National Convention, Trade Show and Awards for Excellence. Providing delegates with an opportunity to forge relationships with key members of the industry, supply chain, researchers and vegetable and potato growers, the event has fast become a pivotal component of the horticulture calendar.

The event was to be held in Adelaide, but due to unforeseeable scheduling clashes, will now take place at Jupiters Gold Coast from Thursday 30 May to Saturday 1 June 2013. A landmark among the coastline entertainment and leisure district, Jupiters has resided on the coast for over 25 years and still represents one of

the key venues for action and entertainment. Boasting eight bars, seven restaurants, a 24 hour casino and an extravagant theatre showroom, the venue for the 2013 Convention is sure to present delegates with an exceptional and memorable experience. Encircled by the spectacular Broadbeach Island, delegates will have the opportunity to explore the warm sandy beaches, delectable dining possibilities and thriving entertainment options on offer.

The Convention, now in its fourth year, will see several key events return in 2013, including the all-encompassing Trade Show. Promising to be packed with significant industry leaders from the supply and service sectors, as well as key figures involved in research and development, the Trade Show

is a must for forward thinking growers and progressive industry members. Spanning over three days, the event will culminate with the AUSVEG National Awards for Excellence and Gala Dinner to congratulate and celebrate the innovators and leaders within the Australian horticulture industry.

Situated on the Gold Coast's waterfront, delegates are strongly encouraged to bring their families to lap up the sunshine and exciting activities during this important industry event, and stay on to take in all that Queensland has to offer including neighbouring theme parks, Surfers Paradise and glorious scenic attractions.

Nominations for the National Awards for Excellence will open soon, with categories including Grower of the Year,

Young Grower of the Year, Productivity Partner Award, Industry Recognition Award and the Women in Horticulture Award. Having become the most celebrated award ceremonies in Australian horticulture, AUSVEG encourages those within the industry to start thinking about nominees for this prestigious event.

AUSVEG is set to make more exciting announcements regarding the 2013 Convention in the upcoming months. For now, growers and industry stakeholders are urged to save the date and show their support at this influential event next year.



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Q&A Young grower profile

Name: James Weir

Age: 18

Location of farm: Crookwell, New South Wales

Potatoes farmed: Certified seed potatoes

Role in company: Grower

How did you first get involved in the industry?

I'm a fourth generation grower - I've grown up on the farm. My Dad and Pop were both in the business and they have made a successful living on-farm and I've been lucky enough to have the same opportunities. I started working on the farm full-time about 12-14 months ago.

What does your average day on the farm entail?

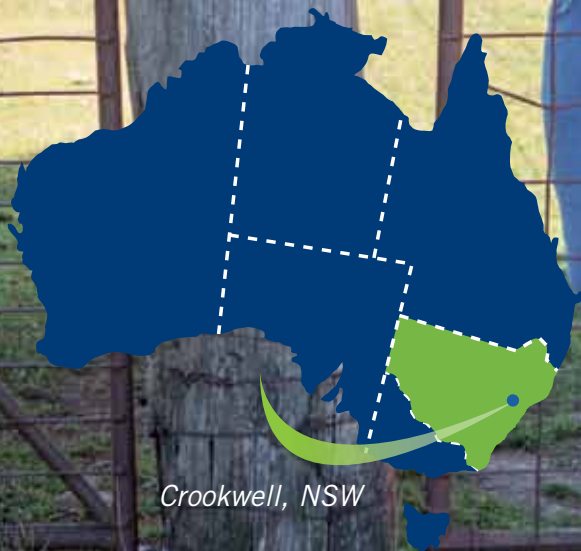
We have a mixed farm, so it can involve many different things depending on what time of the year it is. In regards to seed potatoes, April, May and June will find us harvesting. We also breed prime lambs; we have cattle and conduct a Poll Dorset and White Suffolk Sheep Stud which we present in shows, and we have an Annual Flock and Stud Ram Sale.

What do you enjoy most about working in the industry?

Definitely being outside and the people you meet. And working alongside older, respected members of the industry helps you to learn how to handle yourself in operations and production.

What are the biggest challenges you face as a grower?

The issue at the moment with the prospect of imported potatoes coming in from New Zealand is a challenge for



Crookwell, NSW



industry to contend with. Also, the market demand for the product can be difficult to satisfy at some stages of the year. As certified seed growers, we supply other potato growers, mainly in northern Queensland, with quality seed for production. Last year they had a pretty tough time with the market being quite sour - there are definitely trials and challenges, which, as a grower, you have to face.

How do you think young people could be encouraged into the industry?

That is a tough issue. I think it really needs to start at a base level - in schools. When I was going through school there really wasn't much emphasis on agriculture - I think if we pushed it more throughout the school years and encouraged it, maybe people might take more of an interest. Not only that, it can be hard for young people to get a start unless they have grown up on a farm - it can be very hard to get into the industry on your own. The general opinion of growers among the broader community can be very narrow minded. People assume they just sit on a tractor. But if they had the opportunity to partake in some of the experiences we go through, they might have a better idea of how things really are for growers, have a stronger interest for the industry, and want to get more involved in its future.

I think there is a really big communication problem between consumers and producers, and it is not only the consumers in the city. It's

important to try and educate people as much as you can, especially about the history of our growers and what we go through to get a good crop and how it's all done. Most people take the whole process for granted when they're picking up the veggies in the supermarket.

What do you think are some of the biggest threats to the Australian potato industry?

Diseases definitely pose a big threat to our industry. We are lucky in our location that we are disease free. The Crookwell Grower's Association has adopted a quality assurance program to make sure we stay disease-free and do everything as best we can. We would hate to see imported potatoes coming in with diseases. Imports also pose a threat for local growers. Bringing in overseas processed potatoes naturally has a flow on effect to seed producers. When we visited Atherton in October, it was a shock to see hundreds of hectares of potatoes being ploughed in. It makes me wonder what we need to do now to preserve our future. Whether it is processed or fresh potatoes imported, it all impacts on our future planning.

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

I had a strong interest for working in the Defence Force or in the police forces. So I might have pursued that if I hadn't gone into the family business.



Cultivating a new line

An Australian potato breeding program is set to release up to 25 new potato cultivars. Having attracted international and national interest, Karen Shaw investigates the novel research into potato genetics.

The Australian potato industry is worth approximately \$557 million a year and accounts for a large proportion of national vegetable production. To maintain productivity levels, industry invested in an innovative five-year breeding program.

The program was split into two separate, but important projects. The first, to develop new commercial cultivars, funded by HAL using voluntary contributions from commercial investors and matched funds from the Australian Government. The second, to further investigate the genetics and biology of important traits for the Australian industry, funded by HAL using the National Potato Levy and matched funds from the Australian Government and the Victorian Department of Primary Industries.

Project leader Tony Slater, of the Victorian Department of Primary Industries, said

the innovative research had propelled Australian efforts beyond its international counterparts.

"We have developed one of the most advanced potato breeding programs in the world. Five years ago we were well behind world leaders and now we are ahead of most."

"Our work on genetic selection, to be able to predict the estimated breeding value of lines of potatoes, has not been done anywhere else in the world," he said.

The breeding program has already distributed 217 cultivars for commercial evaluation and, of these, at least 25 have advanced towards release onto the market - six in the near future. Mr Slater explained that the new cultivars were selected for specific characteristics such as tuber appearance, yield, cooking performance, specific gravity, dormancy, susceptibility to greening and bruising, and





Project leader, Tony Slater, examining potato plants for viruses.

resistance to various diseases.

Marker-assisted selection

The approach to breeding the improved cultivars has been revolutionised by the introduction of a technology called marker-assisted-selection. This enables the DNA of each cultivar to be examined and genes of interest identified, including any that impart resistance to various diseases.

“This means we were able to screen new cultivars for resistance to diseases such as Potato cyst nematode (PCN) and Potato virus Y (PVY),” said Mr Slater.

With PCN and PVY able to reduce yields of potatoes by up to 80 percent, and affected tubers unable to be sold in international and domestic markets, the incorporation of disease resistance into new lines could support future growth in the Australian potato industry.

“The other advantage of this technology is that it fast tracks the breeding program - potato seedlings can be screened for disease resistance in their first growing year. Previously, we often had to wait up to five years to test or screen new cultivars for disease resistance.”

“Using marker-assisted-selection is an exciting breakthrough. The technology has already seen advances in the UK, Ireland and Canada as they take up this research. And the practical output for Australia is that we now have a range of PCN and PVY resistant cultivars under development,” he said.

Technology

As well as using the marker-assisted-technology, another important aspect of the research was the use of a specially developed computer program that enabled the calculation of what are called Estimated Breeding Values (EBV) for future cultivar releases. While this technology has not previously been used in horticulture, it has been successfully used in livestock breeding programs.

“By understanding more about the genetics, we have developed the EBVs, which, put simply, indicate the genetic potential of the parent and its progeny,” Mr Slater explained.

“We can then use this genetic information for specific traits for all relatives and, from that information, select future crossings to produce superior

cultivars. These advances could be widely adapted to other target crops in horticultural research both in Australia and internationally.”

New cultivars

Mr Slater described one cultivar, which is about to be released, as exhibiting favourable characteristics. “It has high yield, good appearance, and is also resistant to PCN.”

There are also two high yielding cultivars that are set to be released for the crisping market according to Mr Slater.

“Both cultivars produced high yields in field tests. One is drought tolerant and will be ideally suited to the dryer Australian conditions. The other was selected for its improved storage ability,” he said.

Mr Slater urged growers to seek out these new cultivars, to pay the royalties needed to grow them and to support the investment in breeding research.

“This is an exciting step forward for the industry and there will be many flow-on benefits for growers.”

THE BOTTOM LINE

- An Australian potato breeding program is developing new potato cultivars for commercial release.
- The research has taken advantage of improved knowledge of the potato genome and used marker-assisted-selection in an effort to cultivate new potato varieties with specific characteristics such as appearance, yield, cooking performance and resistance to various diseases.
- A world-first in introducing estimated breeding values for potatoes, the projects will facilitate better selection of superior cultivars as well as cheaper and faster breeding of superior varieties in Australia.

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Chipping away at the market:

the Australian industry
and market-led success

Decommoditising the potato. How do we do it? How are our international counterparts doing it? Commercial Director at HZPC, Herman Verveld, spoke with *Potatoes Australia* about what he thinks could elevate the humble spud.

Steering the potato industry towards the needs of the consumer presents an extraordinary task, particularly for an industry which is still product-trade driven. With consumers becoming increasingly time poor, preferring faster meal preparation times, quicker meal sessions and relying on products which boast multiple uses, catering to an ever changing marketplace is not without its challenges. However, it can also present opportunities.

As an industry, we need to investigate and identify differentiated potato consumer needs, incorporate simple and enticing navigation on potato retail displays, and use clear information on packaging. According to Herman Verveld, Commercial Director and Sector Manager of Retail Fresh at renowned Dutch company HZPC, by segmenting consumers based on their different needs, an industry can work towards delivering consistent quality and specialised products.

"The fact is that potatoes are a low interest product. In many countries, including 99 percent of consumers in the Netherlands, the consumer is buying one bag of potatoes and is preparing different potato meals with this type," he said.

Recognised as a world leader in the marketing of seed potatoes, through a collaborative approach with 800 growers, 55 breeders and foreign branch offices, HZPC aims to increase the introduction and commercialisation of new, specific potato varieties.

For most Australian families, the potato presents a staple element of meal time creations. They are often inexpensive, easy to prepare and provide an array of vitamin and antioxidant needs. However, there is a lack of consumer awareness of potato varietal differences. It only takes one look at the fresh potato shelving in supermarkets to see why. The displays are often dull, uninviting and unimaginative. The potato, and its array of varieties, is not promoted to consumers as a specialised and exciting option for meals and nutrition.

"What we need to do is educate the consumer more about the differences, like cooking types and tastes, and how to use them in the correct dishes. Today, although most of the packers are explaining this

on the packaging, the consumer still doesn't pick it up," said Mr Verveld.

"But what if we were to initiate selling some potatoes in a duo pack? Perhaps in a three or four kilo bag separated into two parts, which could be filled with two different types of potatoes.

to be enhanced, as does the navigation for consumers.

At a recent international potato meeting, held in New Zealand as part of the Horticulture NZ Conference, key supermarket chain figures stated that from their consumer research, a majority of

"The consumer isn't spending much time at point of purchase," said Mr Verveld. "What we should do is assist the consumer at the point of sales. The 3-1-0 rule is a nice tool to help the consumer navigate their choice. Three metres away from a retail shelf the consumer



They could be divided based on cooking type, taste or colour. From this, the consumer gets a different perception - they can learn about the differences between varieties and show more interest in potatoes during the meal."

Across the globe, leading members of international potato industries have made comment about the need to transform the sector to align with consumer needs and become more market driven. Mr Verveld acknowledges that in order for the potato to reach consumers, it needs to become more 'sophisticated.' It must meet the taste and quality needs of the consumer consistently, and cultivate an emotional factor. Moreover, the presentation of potatoes in retail outlets needs

consumers had already decided they will purchase potatoes before they enter a supermarket. Arguably, it is at the point of retail display that there is a chance to entice consumers towards a specialised product. By informing consumers with what a product can deliver - such as health benefits, particular tastes or multi-end uses - the consumer will perceive the product to be value for money. If consumers remain oblivious to the range of options available for meal times when purchasing a product, then the market will remain stagnant. Customers tend to be value maximisers, within the confines of limited knowledge, mobility and income. They estimate which offer will deliver the most perceived value and act on it¹.

should be able to identify potato product categories: organic, local or seasonal, delicious, easy and quick, discount etc. Based on the meal occasion, the consumer will walk towards their preferred choice. From one metre away, they will observe the different options available within these categories. Finally, the consumer will choose a specific product of their choice and read the instructions (0 metres)."

Mr Verveld acknowledged that through such labelling and displays, consumers will recognise potato differentiation, identify variations related to meal occasions, and have their purchasing choices simplified.

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In catering to untapped and specified consumer markets, it is not only the retail presentations that need to be modified. Producers need to analyse differentiation in product and brand - to identify a market or consumer need and establish themselves among their competitors. This can be achieved through niche products or communicating information through specialised product packaging. Is the consumer looking for convenience, a certain taste or texture, a mixture of colours and price points? Such attributes could be incorporated onto product packaging to entice consumers.

The notion of market-led industry success is not a foreign concept to the Australian agriculture industry. There have been several enormously successful market-led campaigns seen over the past fifteen years including the banana, avocado, red meat and lamb campaigns. The market-led campaigns - often tied to events, promoted in-store and enlisting Australian celebrities in advertising to evoke a sense of

patriotism around the product - help to solidify a product's place within the wider consumer market. Prime examples of these trends can be seen in the 1990s Goulburn Valley fruit advertisements featuring the 'Oarsome Foursome' Australian

But how can an industry know what emotions to evoke, what deals to promote or which demographic a product can be targeted towards? Consumer research is a fundamental component of a targeted and successful campaign. Stressing

2011, on average 64 percent of respondents across seven European countries said that taste was one of the most important aspects to consider when buying potatoes, with health and nutrition also seen as increasingly important components in coming years of consumption for buyers. Such information enables us to understand the consumer, which in turn aids producers and marketers in creating a well-received product.

"We should not simply do quantitative research - the challenge is to also conduct qualitative research - this means that you have dialogue with the consumer. Then you start to understand more about their behaviour before buying, during buying, during preparation and during consumption. Understanding the consumer will lead to more successful [potato] products and concepts," said Mr Verveld.

Reference¹ - Burton, S. Keller, K.L. Kotler, P. Marketing Management, Pearson Education Australia, NSW, 2009, p. 128.

“ What we need to do is educate the consumer more about the differences, like cooking types and tastes, and how to use them in the correct dishes. ”

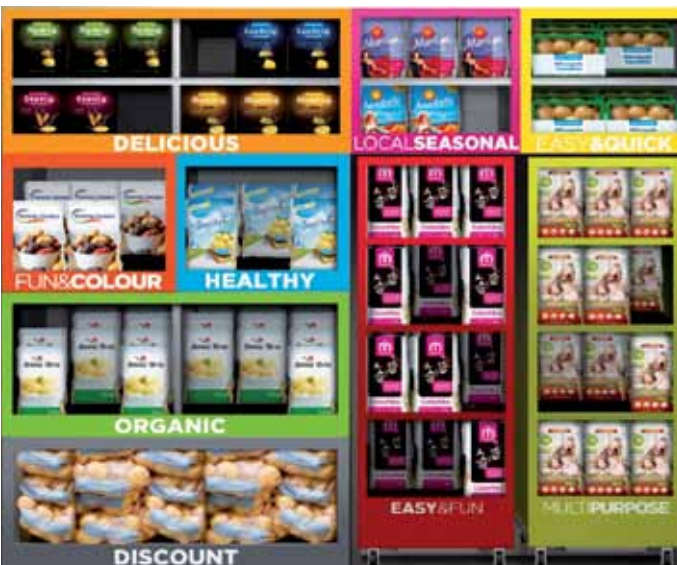
rowing Olympians, the red meat campaigns featuring actor Sam Neil, and the renowned lamb campaigns featuring sports commentator and former Australian Rules football player, Sam Kekovich.

the importance of the industry undertaking greater consumer research, Mr Verveld said that understanding consumers is the key to satisfying their needs.

In a HZPC consumer research drive from 2002-



Standard potato retail display in supermarkets.



HZPC vision for categorised potato retail displays.

Herman Verveld on how the Australian potato industry can make itself more marketable:

1

Health will be the number one priority in consumer food trends in the coming 10 years. So we need to exploit potato health related issues.

2

We cannot neglect the concern for the environment. Sustainable, but proven, will become a more important issue towards the consumers.

3

And let's not forget communication towards the (younger) consumers. Social Media including twitter and Facebook is something you cannot escape today. Think in this respect also to Quick Response Codes - the new barcodes which can be read by mobile phones.

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Art imitating life: a Heysen heritage

He might describe himself as a latecomer to the industry, but Tim Heysen's family legacy is one deeply entrenched in South Australia's agricultural and, perhaps most surprisingly, artistic history.

The small district of Kalangadoo in South Australia, about 50 km north of Mount Gambier, finds the Heysen Partners bustling property. Amidst the tree-lined dirt roads, and lush tranquil scenery, a diverse and well-established business resides. With livestock and potatoes constituting the main elements of production. Although growing primarily for the French fry industry - cultivating Russet Burbank, Ranger Russet and Innovator varieties - the Heysens also produce certified seed.

"My family background has always been in the agriculture industry," Tim Heysen says.

"My grandfather migrated from Germany in 1883 to the area, and the family has been in South Australia ever since."

Modest in his acknowledgement of the Heysen family's famed and influential background, Tim concedes that his grandfather was indeed Hans Heysen, South Australia's best known artist, and one of Australia's greatest landscape painters. Han's work is often referred to as having been instrumental in the development of Australian art and culture in the twentieth century.

"I, together with my two brothers and sister, still own his property, his house and studio. We often have it open to the public which is located in the Adelaide Hills. It is a wonderful heritage," he explains with an air of humility.

"My father started here in 1937, and my wife and I have been farming here since 1975 - I'm a second generation farmer, but first generation potato grower."

Although self-effacing in his explanations of his family heritage and dynamic production ventures, Tim is well versed in the issues affecting Australian growers and the broader horticulture industry. Echoing the sentiments of undoubtedly a majority of growers, Tim concedes that one of the biggest challenges facing the industry is its future.

"We have got a lot of uncertainties at the moment, particularly in the French fry sector."

"The biggest threats to our industry today are imports and trying to remain competitive. There are two major components to staying competitive - one is our cost of growing and the other is the high exchange rate," says Tim.

To ensure the viability of the industry into the future, analysing the fresh and processed sectors reveals there are differing issues which need to be considered and addressed.

"On the processing side it is very much about reducing our costs, which will almost definitely mean, to improve our yields, to produce potatoes at a cheaper price - that involves looking at varieties that are quicker to grow and with higher yields. On the fresh market industry, promoting the product and increasing

consumption of fresh potatoes is key."

Pests and diseases can be a major concern for many growers, causing reductions in yield, profit and marketable produce, frequently affecting productivity and returns. Many potato growers are keeping their eyes peeled on the recent review of import conditions in relation to fresh imported potatoes from New Zealand for processing in Australia. With an increasing knowledge of the Tomato-potato psyllid and Zebra chip disease filtering through the R&D spheres, Australian growers are voicing their concerns about the risks associated with the proposed change to import conditions.

"We are very concerned about it," Tim says apprehensively.

"It is an insidious disease, and there are some other diseases in New Zealand which we haven't got, but certainly the spread of the Tomato-potato psyllid and Zebra chip is a devastating prospect. The New Zealanders have been struggling to control it, and we believe that even if it is a small risk, it is a risk that we shouldn't take."

At present, imports, exports and biosecurity are significant topics of contention amongst members of the industry and key political figures. When asked what one industry issue he would bring to the attention of the Prime Minister if he had the

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Photographs by Tanya O'Leary.



opportunity to meet with her, Tim replied vehemently that the most important matter for horticulture and agriculture in general is the problem with free trade.

"We are not trading with most other countries on a fair and equal basis. If we are to remain as viable industries, we need to have that addressed or we will continue to see the erosion of our export and domestic markets," he says.

"I'm not suggesting we return to a protected market, but rather, one that is able to compete on an equal basis. This would need careful analysis to highlight the differences to ensure a sustainable and competitive future for our primary and manufacturing industries. I believe the Government are not totally aware of the pressure that primary and secondary industries are under, especially with a high exchange rate."

"Looking broadly at exports, Australia is not as competitive as other suppliers," Tim describes.

"We are way off in terms of competitive pricing - our raw product price is too expensive to compete with some other countries into what would be obvious markets for us to supply in the Asia-Pacific area."

Equally, differentiating between imported product and local produce through County of Origin Labelling could very well aid in

the support and consumption of Australian products in the marketplace.

"County of Origin Labelling is essential, and it has got a long way to go. We have a problem in the French fry industry where many of the fries that consumers are eating now are actually imported - the consumer has no idea," Tim explains.

“ If people aren't told about the benefits of supporting local growers and produce, then they will often simply go and buy the cheapest produce available. ”

"It may be difficult to implement Country of Origin Labelling in instances where consumers are buying fries from a Quick Service Restaurant as they are not served in the original packaging.

But, something needs to happen so consumers have the choice. There are certainly a lot of opportunities to apply origin labelling on many agricultural products," he says.

Ensuring loyalty to Australian producers is an objective which, as an industry, we are still grappling to achieve.

"Publicity and awareness play a big role - if people aren't told about the benefits of supporting local growers and produce, then they will often simply go and buy the cheapest produce available," says Tim.

"Just because a product is Australian, does not ensure consumer loyalties. I think we need to accompany that promotion with the other components such as the health, nutrition and traceability in terms of chemical use, and the standards that we have in Australia that may not be addressed in imported products. We may also need to bring

consumer pressure back onto the large supermarket chains to stock Australian products."

A spokesman for the industry in his own right, Tim is the Vice Chairman of the South East Potato Growers Association. In this leadership role, he has often reflected on the lack of young people entering the industry and contemplated what the causes could be.

"We have to look at the reasons why we aren't getting young people into our industry. I think some of the things we need to do to turn that around is to be more positive about what we're doing," he says.

"As farmers, not just potato growers but the wider agricultural industry, we sometimes tend to be a bit negative about the outcomes that we are getting, and that then filters onto the next generation. The industry does not promote the career opportunities for young people in our sector nearly enough as it should."

Perhaps for the potato industry, and horticulture more broadly, we need to paint a positive picture for the next generation of growers. Making an effort to portray a vibrant and colourful picture of how growers provide for the nation, in order to inspire, allure and retain young innovative people in our exciting industry.

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White-fringed weevils beware

A three-year research project which aims to improve the management of White-fringed weevils in potatoes has made significant progress in determining whether the grubs can detect host plants in the soil, writes Gretel Sneath.



It only takes one White-fringed weevil (WFW) to establish a population in a paddock, and once they take hold, they are extremely difficult to eradicate. While present in all potato growing areas, WFWs have had considerable impact in Tasmania, where they have attacked the roots of several other crops including carrots, poppies, pasture and forage plants.

Horticulture Australia Ltd (HAL), through funding from the processed potato industry levy and matched funds from the Australian Government, is overseeing a three-year project that aims to improve the management of WFW. The project, which is based

at the Tasmanian Institute of Agriculture, and led by Associate Professor Geoff Allen, is approaching the end of its second year. Scientists are making significant progress in determining whether the grubs can detect the presence of host plant roots in the soil, or whether they in fact stumble upon them randomly.

Bioassays

Dr Paul Walker, who is conducting the research, says a series of laboratory bioassays using two-sided soil chambers have been carried out at various stages of grub development.

“We wanted to establish whether the grubs gravitate

towards specific compounds released from the roots of their host plants like some other subterranean invertebrates, or whether they randomly choose their target. So we connected one arm of the chamber to a pot containing a plant, and the other arm to a pot with just soil,” he explains.

Newly hatched non-feeding WFW grubs (1st instars) which live off a yolk sac inside their body didn't specifically target soil chambers containing host plant roots or tubers (potatoes, lucerne, carrot), but it was a different situation when it came to field-collected late-instar (8th-11th instar) WFW grubs.

“We starved them for a few days before putting them in

the chamber to make sure that they were extra hungry, and 90 percent of them went for the plants. This is quite exciting as it suggests that there is something in the soil they are using to orientate towards the food plants,” says Dr Walker.

“What we have to do now is try to work out how they make that decision - is it due to a very general, non-host specific cue like CO₂ which is given off by all plants, or can the grubs actually discriminate between a preferred (e.g. potato, lucerne) and a non-preferred host plant (e.g. cereals, grasses) using plant-specific root volatiles?”

Bioassays are a slow process, but Dr Walker says it's necessary to give WFW a choice





Two-sided soil chamber.

in order for the research team to make some clear definitions.

“If you can prove that there is some discrimination going on, and root exudates are being used by WFW grubs to detect the presence of host-plants, the next step will be to try to identify what compounds they are using in order to do this. We could then work towards investigating the feasibility of some kind of attractant/deterrent for detecting the presence of grubs in the soil and preventing them from feeding on that crop.”

In addition to the success with late-instar WFW, a new bioassay chamber has been devised for testing the response of small grubs (< 5 mm) to host plant roots. It uses a much smaller amount of soil than the original design, allowing a higher success rate in the recovery of small grubs, however, further testing of newly-hatched instars produced the same results of the initial bioassays. There is no

evidence that this non-feeding stage orientates to host plants (potatoes, lucerne, carrot) as opposed to chambers containing soil only. The new design is now being used to further test the response of second instar WFW larvae, which have commenced feeding.

Sampling plans

Project PT09027's other main objective is to increase industry awareness of WFW and promote wider use of an effective sampling plan before growers make a decision on whether or not to spray. Developed by Dr Paul Horne from IPM Technologies, VIC, and WA-based entomologist Stewart Learmonth, the sampling plan involves taking samples of soil with a spade (approximately 20x20x20cm) randomly across the paddock to search for WFW grubs.

“For an average-sized

paddock, five spade samples should be taken in each of nine widely separated locations to cover most of the area,” explains Dr Walker.

“Sampling is best done well before planting in the winter months when the grubs are easy to identify and readily visible in the soil. If more than one grub per five samples is found, then the grower should consider either not planting potatoes, or treating the soil with an insecticide before planting.”

Over the course of sampling for WFW grubs, researchers have spoken to individual growers about the aims of the project and their problems with the pest. They will continue to communicate progress and outcomes to growers, agronomists and industry through articles and field days, posters, brochures, and a grower fact sheet scheduled for release later this year.

THE BOTTOM LINE

- White-fringed weevils can currently only be controlled by crop rotation, chemical and cultural controls.
- The implementation of an effective sampling plan is critical for determining appropriate control decisions.
- Researchers are closer to identifying how white-fringed weevil grubs locate host plant roots in the soil.

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Defining losses due to nematodes

An on-farm soil fumigation experiment is investigating the effects nematodes have on yields, profits and quantities of tubers for processing. Dr Greg Walker of the South Australian Research and Development Institute explains.

Nematodes, including Root-knot nematode (RKN), Lesion nematode and Stubby-root nematode, are commonly found in potato cropping grounds in the south-east regions of South Australia, often with potentially damaging populations. Little is known, however, about the actual level of losses these nematodes cause in Australia.

A project, facilitated by Horticulture Australia Ltd and funded by the National Vegetable Levy with matching funds from the Australian Government, sought to identify the effect of nematodes on potato yields, profits and quantities through soil fumigation. An on-farm experiment was

conducted in processing potatoes in south-east regions of South Australia in 2011/12 for this purpose. Soil fumigation (with Telone® and Telone C-35®) and a registered nematicide (Nemacur®) were used to manipulate the nematode population at the start of the season. By comparing yields and the incidence of tuber defects (especially galling caused by RKN) in treated plots with those in untreated control plots, the yield losses and economic costs associated with nematodes were estimated at this site.

The site was selected because it had moderately high soil populations of RKN, mainly *Meloidogyne fallax*, and relatively low soil populations of

other soil pathogens.

Subsequent testing showed that Lesion nematode and Stubby-root nematode were also present in soil at potentially damaging population levels. The pre-planting population of RKN was 150-260 nematodes/200 g of soil. DNA levels of *M. fallax* were 160-400 pg/g of soil.

Telone® was the most effective chemical and a rate of 176 kg/ha was more effective than 147 kg/ha. It increased yields by 16.6 t/ha (25 percent higher than the untreated control), and increased the total number of tubers harvested, both per plot and per plant, by 36 percent. This yield increase is valued at \$4,908/ha gross (at a price of \$296/t) or \$3,161-3,295/ha net after subtracting

costs of fumigation. Telone® reduced the incidence of tuber galling by 39 percent, and the incidence of severely galled tubers by 70 percent, avoiding estimated losses of \$11/t due to price penalties that would otherwise have been applied. Average pre-planting populations of *M. fallax* were similar in the rest of the pivot compared with the experimental area, and the point at which fumigation became profitable was found to be at only 33-36 percent of the yield increases actually demonstrated in the experimental plots. These results indicate that nematodes are a major cause of yield and profit loss at this site. Actual benefits achievable at other farms will vary from those at this



site. Other sites in particular seasons will vary widely in both nematode populations and the extent of losses caused by nematodes. However, we know from surveys that *M. fallax* commonly occurs in this region, often at higher population levels, and similar losses are likely in other fields in this region and perhaps elsewhere. Stubby-root nematode and Lesion nematode populations in soil were negatively correlated with tuber yields, indicating that these nematodes were contributing to damage.

The industry 'standard' Nematicur® reduced the incidence of tuber galling, but did not control Stubby-root nematode or increase yields significantly above the untreated

control. Growers are very aware of reductions in tuber galling, but they may not be aware of hidden yield losses caused by nematodes, as many other factors reduce yields.

The aim of this research was not to promote the use of soil fumigation; it was used purely as an experimental tool. Other critical, non-financial factors related to the use of this chemical need to be considered, in particular, human health, environmental sustainability and regulatory trends in other countries including our trading partners. Quantifying losses caused by nematodes is an important first step in the long-term goal of developing more environmentally sustainable management strategies.

THE BOTTOM LINE

- An on-farm, soil fumigation experiment demonstrated that nematodes (Root-knot, Stubby-root and Lesion nematodes) reduced yields of processing potatoes by 25 percent and numbers of tubers by 36 percent.
- Yield increases produced after soil fumigation with Telone® were valued at \$3,161-3,295/ha net after subtracting costs of fumigation; incidence of severe tuber galling was reduced by 70 percent, avoiding a further price penalty of \$11/t. Nematodes were identified as a major cause of yield and profit loss in south-east South Australia, and perhaps in other regions.
- The aim of this research was not to promote fumigants; these were used as an experimental tool to demonstrate yield loss. Growers need to monitor their soil and crops for these pests before deciding to use chemicals or alternative management strategies.

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Potato Extension Program

In seeking out information on R&D, news, technological innovations and consumer and business insights, an increasing number of individuals within the potato industry are looking online.

The Internet is a valuable source for information, particularly to gain an international perspective given Australia's relative geographic isolation from other major potato industries around the globe. Nevertheless, finding informative web pages or useful online sources can be a time consuming and daunting process. This edition of the Potato Extension Program column outlines key international sites which potato growers and other members of the industry may find useful as a starting point for their venture into online resources, particularly for those who are time constrained or not regular users of the Internet.

Online R&D

Online activity is increasing in all aspects of our lives, whether it is reading the daily news, purchasing shopping, checking the weather, buying tickets to events, making travel arrangements, or viewing the latest sports results. Like it or not, we cannot escape the fact that the Internet and other digital technologies will become more prominently used in many aspects in our lives, including the day-to-day activities of the potato industry. For those who do not search online regularly, the following sites may provide a good starting point and are certainly a good way to keep an eye on potato industry R&D and news from overseas.

Potato Council UK

www.potato.org.uk

This site contains information on the British potato industry. The Potato Council is a division of the Agriculture & Horticulture Development Board. The website is easy to navigate and has a very informative section called the 'Knowledge Hub' - a database of research projects which can be searched and are categorised under topics such as disease, pests, agronomy, storage and consumer. Most projects can be viewed in PDF format. Recently added project outlines include Water Use Efficiency (R406), Improving Cultivation Practices in Potatoes (R459) and Potato Storage (R457 and R458).

Potato Pro

www.potatopro.com

Potato Pro is a Canadian run site which is an excellent source of news on various aspects of the potato industry from around the globe. Visitors can navigate news items according to potato sectors. Users can also subscribe to a free 'PotatoPro Newsletter' by clicking the relevant tab on the home page, and also receive daily news updates.

U.S. Potatoes

www.uspotatoes.com

The United States Potato Board (USPB) is the nation's marketing and research organisation representing 2,500 potato growers. The site has a section on nutrition programs in which a number of handouts can be downloaded containing information on carbohydrates, diets, health and starch. There are two sub websites - www.potatogoodness.com/foodService and www.potatoesusa.com - which provide a wealth of nutritional and marketing information.

APRE

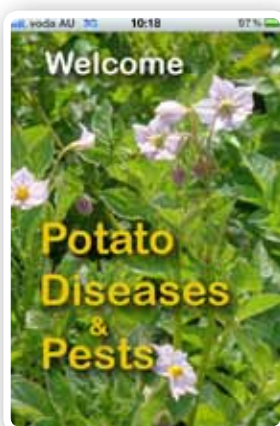
www.apre.org

The Alliance for Potato Research and Education (APRE) is an organisation dedicated to promoting the health benefits of potatoes. They aim to also educate the public and government about the nutritional benefits of potatoes in order to dispel many of the unhealthy myths which have been incorrectly voiced by the media. There are a number of scientific articles available for download, as well as educational videos which can be viewed by live streaming.

Digital R&D

Potato application for the iPhone

Dr Leah Tsrur, a research plant pathologist at the Agricultural Research Organisation, Volcani Centre in Bet-Dagan, Israel, has developed an iPhone application on potato pests, disorders and diseases entitled "Potato Pests". Images can be magnified so growers, agronomists, researchers and students can see details up close. The interface enables the user to cycle through categories and content. Importantly, the designer has invited parties to send in images which will be incorporated in future updates of the application (email: tsrorl@gmail.com). The application is available on iTunes.



Spudman

www.spudman.com

This site is run from Michigan in the United States. Spudman is a magazine published for the US industry which is read by over 10,000 people. Browsers can search electronic editions of the magazine from 2004 to the present via the 'Magazine' tab, and view individual articles within each edition on a range of industry and R&D issues. Many of the features deal with potato production tips, pest and disease management and marketing. Spudman also produces an eNewsletter which users can subscribe to or access online.

SASA

www.sasa.gov.uk

The Science and Advice for Scottish Agriculture (SASA). The site contains an R&D section broken down into segments on Epidemiology and Population Dynamics, Molecular Genotyping and Pest and Pathogen Diagnostics. Additionally, under the 'resource' tab, potato publications can be searched using the 'collection type' drop down menu.

Fresh Plaza

www.freshplaza.com

This Dutch run website sources news on the global fruit and vegetable industries. Users should click the 'potatoes' link in the home page menu bar. News articles are defined by their country of origin, and cover all aspects of the potato industry. The site also contains updates on machinery, innovations and the economy.

Potatoes New Zealand

www.potatoesnz.co.nz

This is a good sight to keep an eye on for information on the latest updates on Zebra chip and the Tomato-potato psyllid (TPP) as it is currently affecting the New Zealand industry. Under the 'What We're Working On' tab, there is a resource page containing information on the psyllid including news, monitoring and control. The site also has an archive of newsletters under the 'What's New' tab. Plant and Food Research New Zealand - <http://www.plantandfood.co.nz/> - is also a useful resource on New Zealand R&D priorities.

Potatoes South Africa

www.potatoes.co.za

South Africa's potato association has a dedicated website in which visitors can access R&D project summaries and reports under the 'Research' tab.

ECPD

www.europotato.org

The European Cultivated Potato Database (ECPD), a Scottish run site, is a resource for breeders, scientists and growers which contains information on potato varieties including country of origin, plant and tuber characteristics, disease and pest resistance, and utilisation details. Users should use the 'search' tab and enter in the first four letters of a variety if they require specific information. Varieties can also be searched alphabetically. There is a sub site specifically for British potato varieties: www.varieties.potato.org.uk

Potato World Magazine

www.potatoworld.eu

This website is dedicated to the quarterly publication *Potato World Magazine*. In the 'Archive' tab, previous editions of the magazine can be viewed online. Each magazine contains information on subjects ranging from breeding, seed production and crop diseases protection to marketing, storage and science and research.

Unearthing new technologies

For the potato industry, it is important that the electronic and digital sources are not feared, or that individuals shy away from exploring the potential of these tools just because they are new, unfamiliar, and may initially appear technical or confusing. By delving into new technologies, being open-minded about their potential, and critically assessing them for their value, individuals may discover more efficient ways of sourcing information and improving their businesses.

For more information please contact:
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Project: PT11004

Ask the industry



with Scott Mathew

The key to a successful Pink rot control program is the timing of the follow-up applications. Technical Services Lead at Syngenta Scott Mathew, answers your questions in this edition of Ask the industry.

Question: Many growers have different management strategies for Pink rot. What is the best way to maximise Pink rot control?

Given that Pink rot is a soil borne disease, the aim of any fungicide program is to treat the soil around the seed potato tuber and the developing daughter tubers. The most effective way to do this is to apply a fungicide (for example, RIDOMIL GOLD 25G) into the furrow at planting or use a liquid fungicide that is registered to protect potato crops against Pink rot.

The real key with a successful Pink rot control program is the timing of the follow-up applications. One of the most common mistakes I see growers make is that they leave the follow-up fungicide applications too late after planting, meaning much of the fungicide is intercepted by the foliage of the potato crops. The follow-up sprays should be targeted at getting most of the fungicide onto the soil, so that it can be absorbed into the soil profile with moisture to offer further protection against Pink rot.

Question: When I am looking to make herbicide, fungicide or insecticide applications, how do I find out what products can and cannot be mixed together to reduce the number of applications I have to make?

The first place to start is to read the labels of the chemicals that you are looking to mix together to see if they are compatible.

If they can be used together, you should then carefully follow the mixing, agitation and spraying instructions for each product included in the spray solutions.

However, if there is no compatibility listing on the label you should refer to your local chemical retailer and seek their advice. If the retailer does not have any information, they may be able to contact the manufacturer of the product. In fact, it may be easier for you to contact the manufacturer directly to ascertain relevant information.

Another issue which warrants consideration is that some products may react with other products if they are not mixed in the correct order. The general mixing order of products should be:

1. Water dispersible granules.
2. Wettable powders.
3. Flowable or suspension concentrates.
4. Emulsifiable concentrates.
5. Water based or soluble concentrates.
6. Adjuvants.

To ensure mixing problems do not occur, it is important that each individual component of the tank-mix is fully dissolved and in solution before the next product is added to the tank.

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.



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with Rohan Davies



Understanding new fertiliser technologies

Technical Agronomist at Incitec Pivot Fertilisers, Rohan Davies, discusses new fertiliser technologies and the potential benefits they can provide for growers.

Growers have more options than ever in new fertiliser technologies. However, it is critical for growers and advisers to understand the potential gains these technologies may provide as well as their limitations.

Growers have been offered several new fertiliser options over recent years, including liquids, urease inhibitors, polymer coated fertilisers and ammonium stabilisers. In theory, these products are designed to improve the crop's efficiency of nitrogen use by reducing losses from volatilisation, losses of nitrogen or leaching, and better matching nitrogen availability with plant demand.

Each product varies in its mode of action. For example, coated products may use polymer or sulphur or a combination of the two to encapsulate nutrients for a period of time.

Typically, the nutrient is released through the interaction of water or vapour after application. When vapour penetrates the coating, it condenses on the solid

core and dissolves part of it. An internal pressure gradient builds up and the fertiliser is released by diffusion into the surrounding soil. This means that the plant may only access what has been released from the coated product. Therefore, ensuring the release pattern matches plant requirements is critical - too slow or too fast and you will negate the benefit of using the product.

This is quite different to an ammonium stabiliser, which works by disabling the nitrifying bacteria in the soil for a period of time, delaying the conversion of ammonium to nitrate nitrogen. This allows the plant to access nitrogen whenever it wants to and being stabilised in the ammonium form mitigates the potential losses of nitrogen and leaching.

When assessing the benefits of a new fertiliser, first consider what you are trying to achieve.

Are you aiming to reduce volatilisation losses, or, are you aiming to reduce leaching and nitrogen losses? Is your

aim to feed the crop more efficiently and reduce the rate of nitrogen applied?

Then look to compare the expected costs and benefits.

Research has highlighted the relative pricing differential between products NPK (1), NPK + Ammonium Stabiliser (x1.3-1.6), NPK + Slow Release (x4-6) and NPK + Control Release (x8-12).¹ Revealingly, changes in the nutrient source chosen, or application method, could provide similar results for minimal additional cost when compared to using newer types of fertiliser technology at a similar application rate.

¹ Trenkel, M.E., *Slow- and Controlled-Release and Stabilized Fertilisers. An Option for Enhancing Nutrient Use Efficiency in Agriculture*, International Fertilizer Industry Association Paris, France, 2010.



Please send your soil nutrition questions to *Potatoes Australia*.
Email: info@ausveg.com.au
Phone: (03) 9822 0388

International **R&D** Update

Horticulture New Zealand Conference

highlights
industry issues



Domestic and international members of the horticulture industry descended upon Auckland in the latter half of July to attend the 2012 Horticulture New Zealand Conference.

Held on the 24 and 25 of July at the Ellerslie Event Centre, Auckland, the Horticulture New Zealand (NZ) Conference provided an opportunity for the 480 delegates to hear from Ministers, key members of the industry, leading agribusinesses and network with fellow growers and international counterparts.

The event featured a number of speaker and group sessions which allowed members of the industry to participate in discussions and provide growers with the opportunity to emphasise the issues most relevant to their business/productions. Sessions focused on the increasingly complex domestic and international regulatory and market issues that impact the day to day

operations of growers, and ways in which growers can better position themselves to achieve growth.

Speakers included Minister for Primary Industries, the Honourable David Carter, Chief Executive Officer of Turners & Growers, Geoff Hipkins and President of Horticulture NZ, Andrew Fenton. The keynote speaker was the Chairman of Rabobank and Air New Zealand, John Palmer. The conference placed a strong emphasis on the issue of biosecurity, not only domestically to NZ, but also the challenges which accompany export opportunities in foreign markets.

In discussing a number of pertinent biosecurity issues, the Minister for Primary

Industries accused the industry publications, *NZ Grower* and *The Orchardist*, as promoting negative and unbalanced reporting, labelling their content as an 'ill-informed crusade on the Ministry.' Several key members of the New Zealand horticulture industry made it known that they did not agree with the Minister's account of the coverage of biosecurity matters, and that the industry publications were simply communicating the issues which will affect growers' livelihoods.

Chairman of Rabobank and Air New Zealand, John Palmer's address was entitled 'the Asian opportunity'. Mr Palmer discussed the need to investigate export opportunities

and for people to understand the global food demand which is expected to increase significantly by 2050.

The Potatoes NZ Inaugural Annual General Meeting and Seminar was held concurrently with the Horticulture NZ Conference. Key speakers included Ron Gall of Potatoes NZ, Frank Mulcahy of Simplot Australia and John Jackson of McCain Foods. With over 95 growers, researchers and members of the domestic and international potato industry in attendance, a robust discussion took place on the allocation of levy funds, export opportunities, seed production and retail consumer research.

CALENDAR of events



12 November 2012

Potato Industry Extension Workshop

Where: Warragul, Victoria

What: As part of the Potato Industry Extension Program, a free seminar will focus on Potato R&D activities and applicable outcomes. Key industry speakers will discuss R&D benefits for growers and processors, and how it can be implemented practically in an on-farm setting. Presenting an opportunity to see where potato levy funding is going and the benefit that growers and industry are receiving, this will be an important event not to be missed.

Further information:

AUSVEG (03) 9822 0388
or www.ausveg.com.au

30 May - 1 June 2013

AUSVEG National Convention, Trade Show and Awards for Excellence 2013

Where: Gold Coast, Queensland

What: Now the biggest event of its kind in the Australian horticulture industry, the AUSVEG National Convention showcases speaker sessions, exhilarating entertainment and the impressive trade show. To be held at Jupiters Gold Coast, the event will provide delegates with an opportunity to forge relationships with key members of the industry, supply chain, researchers and vegetable and potato growers.

Further information:

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