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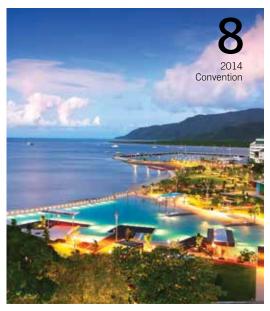
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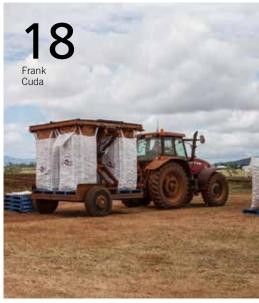
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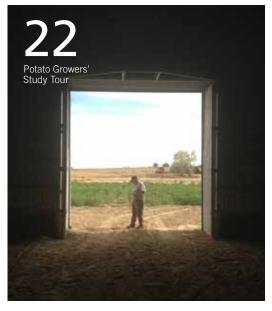
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# Geoff Moar **AUSVEG Chairman**

Providing easy access to potato industry Research and Development (R&D) and encouraging growers to take advantage of breakthroughs funded through the National Potato Levy are key priorities for AUSVEG. As such, ongoing workshops held as part the Potato Extension Program play a key role in achieving these objectives.

During recent events held at Ballarat and Warragul in Victoria, growers were provided with an opportunity to catch up on the latest R&D developments in the industry. The workshops included presentations on issues including Potato virus Y, Pink rot, and controlled release fertilisers, and were encouragingly well-attended.

With the New Year now upon us, planning is already underway for the next series of Potato Extension Program workshops to be held in early 2014. In the first few months of the year, growers in South Australia, Queensland and Tasmania should keep an eye out for upcoming events in their

Where possible, AUSVEG is always seeking to improve the scope of information made available to growers and the means by which that data is delivered. As the year progresses, coordinators of the Potato Extension Program will be exploring new and convenient ways of providing growers with improved access to potato R&D. This includes expanding digital communication channels and, possibly, new materials to deliver key R&D messages. Through this magazine, AUSVEG will keep you updated on new developments as they come online.

On another matter, issues of red and green tape continue to cause headaches for some growers as they look to ensure the smooth running of their operations. With Parliament having now resumed in Canberra following a lengthy break for the Federal Election, AUSVEG is now seeking feedback from members about precisely what red and green tape needs to be cut as part of the Coalition's commitment to deregulate the industry. AUSVEG is in the process of preparing a submission to the Government on areas where there is room for improvement. In order for the submission to be effective, AUSVEG requests the information growers provide is as specific as possible and includes a high-level of detail, with examples where possible. Suggestions can be sent to info@ausveg.com.au or to the **AUSVEG Public Affairs Manager** via PO Box 138, Camberwell,

Have a safe and happy Christmas and New Year.

Moar

Geoff Moar Chairman **AUSVEG** 



# Richard Mulcahy **AUSVEG Chief Executive Officer**

Preparations are now well and truly stepping up ahead of the 2014 AUSVEG National Convention, Trade Show and Awards for Excellence to be held at the Cairns Convention and Exhibition Centre from June 19 to 21. With the 2013 event at Jupiters on the Gold Coast attended by more than 1000 delegates, few would dispute it was among the best ever. Even six months out from the north Queensland Convention, however, 2014 looks set to be bigger still.

In a new addition to proceedings, Potato Levy payers from across the country will have the chance to observe the latest farming practices and technologies first-hand, at a Potato Field Day on Sunday 22 June. Occurring at the end of Convention engagements in Cairns, the Field Day tour will visit three Atherton Tablelands growers who are leading the way with innovation in the sector. More details of the event are included in this edition of Potatoes Australia.

A key component of the Convention each year is the Awards for Excellence ceremony, which recognises the significant achievements of growers, and others involved in our industry. This year, I am pleased to announce a Community Stewardship category has been created to honour industry members and businesses demonstrating outstanding commitment to their communities. Nominations in the new category, as well as the fields of Grower of the Year, Rising Star of the Year, Young Grower of the Year, Industry Impact, Environmental, Productivity Partner, Researcher of the Year, Innovative Marketing and Women in Horticulture, are

now open.

To register for the Convention, view the delegate brochure or to nominate, yourself or somebody else for an award, go to www. ausveg.com.au/convention.

The official AUSVEG Convention delegate brochure has been released to coincide with the opening of event registrations. The brochure contains everything attendees will need to know, including a full program and information on

Speaking of achievements, it is pleasing to note the heartening tales contained in the Grower Success Stories booklet which accompanies this edition of Potatoes Australia. The special publication recognises those potato growers who have successfully incorporated R&D breakthroughs funded through the National Potato Levy in to their businesses. The six growers featured are prime examples of the advantages well-funded R&D can bring to a business.

Examples of applicable R&D have also recently been on display at the latest Potato Extension Program Workshops held in Ballarat and Warragul, in Victoria. I would encourage all growers and industry stakeholders to keep abreast of R&D advances and the announcement of more locations and dates for workshops in the early stages

Lieuarnerspeechy

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HAL's R&D activities. For further information visit:



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FRONT COVER:

Patrick Fox

Photograph by Ben Yew



t has been a busy lead-up to Christmas for many growers, and Frank Cuda is no exception. In this edition of Potatoes Australia. the successful grower from Queensland's Atherton Tablelands explains how he and his brother Richard have gone from helping out on a few acres of potatoes grown by their family to running one of the state's largest production operations (page 18). With harvesting in full swing in the lead-up to December, Frank explains how he's always on the lookout for productivity initiatives to improve a business which already produces at least 15,000 tonnes

of potatoes each year across 400 hectares.

Growers across the country will have a chance to witness the Cuda's operation first-hand as part of a series of farm tours planned during the 2014 AUSVEG National Convention, Trade Show and Awards for Excellence in Cairns from June 19 to 21. With preparations for the massive event well underway, an update on the latest Convention news is included in this edition (page 8).

Elsewhere, young grower Patrick Fox from Western Australia gives his take on the youthful side of the industry

(page 14).

We also summarise recentlycompleted research on the destructive Potato virus Y, completed by Plant Virologist Brenda Coutts from the Department of Agriculture and Food Western Australia (page 16). Ms Coutts recently spoke at two Victorian Potato Extension Program workshops, the details of which can be found on page

From an international perspective, we look at the recent Potato Growers' Study Tour to the USA (page 22), while a trip to the Potatoes in Practice Field Day in Scotland provides some insights in to British potato marketing approaches (page

Closer to home, New Zealand has allocated new money for psyllid research (page 10) while a summary of parts of a 12-month compilation of international scientific research on the pest, published on the Potatoes New Zealand website, is also included (page 12).







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# Welcome to paradise: Cairns Convention set to impress

DELEGATES AT THE
2014 AUSVEG NATIONAL
CONVENTION, TRADE
SHOW AND AWARDS FOR
EXCELLENCE ARE IN FOR
A TREAT NEXT JUNE, WITH
A PACKED SOCIAL EVENTS
CALENDAR DESIGNED
TO TAKE ADVANTAGE
OF BEAUTIFUL
TROPICAL FAR-NORTH
QUEENSLAND.



After a full day of Speaker Sessions and networking at the Trade Show, relax and unwind at the Kahaki Luau. Literally translating to 'Beach Party', the evening event will be a chance for delegates to get out in the fresh air and enjoy the tropical weather.

With the Australian coastline providing the perfect setting, delegates will be able to experience Hawaii without leaving the shores of tropical north Queensland. A buffet reflecting traditional flavours will be on offer to tantalise tastebuds. Delegates can also join in the fun with leis and hula dancing set to feature.

An opportunity to have some fun and catch up with friends from across the country, the Kahaki Luau will take place from 6.00pm to 9.00pm on Friday 20 June. Transport will be provided for delegates to and from the event

# All aboard: Women in Horticulture Rainforest Discovery

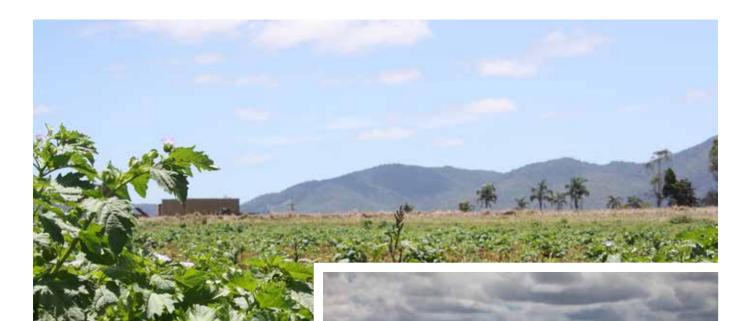
The 2014 Women in Horticulture Rainforest Discovery will see delegates taken on a journey through the lush tropical rainforest to the north of Cairns before enjoying a relaxing afternoon tea. Playing an ever-important role in the field of horticulture, female veggie and potato growers will be treated to an afternoon of luxury aboard the scenic Kuranda Railway. Completed in 1891, the picturesque railway meanders through the World Heritage-listed Barron Gorge National Park. Delegates will be left in awe of its stunning natural beauty.

Women often take on a raft of roles within family businesses, from quality assurance to accounts and administration. The afternoon will provide an opportunity to share experiences, and make new friends across the industry. The Women in Horticulture Rainforest Discovery will also feature several influential speakers, themselves self-made women. Their tales of success will leave delegates feeling inspired but most importantly, not alone in their experiences.

As always the event is complemented by the popular Women in Horticulture Award, which recognises the achievements of women who have demonstrated outstanding success and commitment to the industry. The 2014 Women in Horticulture Award will be presented at the spectacular "Awards for Excellence: A celebration from coast-to-coast" following the event on Saturday 21 June.







# NextGen to make a splash

Young growers from across Australia will get the chance to try their hand at water skiing and wake boarding when they hit the water for the NextGen Saltwater Splash-tacular on Saturday 21 June.

With the average age of growers climbing ever-higher, it has never been more important to identify and support those who will lead the sector into the future. This sentiment is echoed by Dow AgroSciences, who will again sponsor the event. The younger generation bring with them innovative ideas, new techniques and a fresh approach, all of which are vital to the success of the industry in the long term.

AUSVEG welcomes all growers aged 35 and under to register for this event. Registration is free, however, spaces are strictly limited, so be sure to apply now to avoid missing out!



### Touring the Tablelands

Potato Levy payers from across the country will have the chance to view the latest farming practices and technologies first-hand at a Potato Field Day, to be held in conjunction with the 2014 AUSVEG National Convention, Trade Show and Awards for Excellence. On Sunday 22 June, the Field Day will visit three Atherton Tablelands potato growers who are leading innovators in the sector.

Queensland-based operators David Nix, Guido Poggioli and Frank Cuda have all generously agreed to participate in the Field Day and will open their operations to fellow levy payers.

A member of the Fresh Potato IAC, David Nix is regularly involved in industry events and will showcase his various potato varieties next June. With the growing season in far-north Queensland set to be in full swing, this will be the perfect time for attendees to view the property. State-of-the-art equipment will also be on display at Guido Poggioli's growing operation. His family

has been leading the way in GPS guidance and precision agriculture in the region and will explain their use of the technology. The Field Day will also cover post-harvest, with Frank Cuda taking growers on a tour through his packing facility. In the lead-up to the event, you can read more about his set-up on page 18 of this edition of *Potatoes Australia*.

At each operation, delegates will be given the opportunity to inspect crops and tour facilities. Each grower will also speak about their hardships and triumphs. In addition to hearing from their peers, attendees will receive information on a range of relevant topics from industry experts on the properties.

Registrations for the Field Day are free for Potato Levy payers who are attending the Convention, however, places are limited. Make sure to register your interest with AUSVEG now to ensure you don't miss out!



To register for the 2014 Convention and for more information go to www. ausveg.com.au/convention.



# More money for fight against potato pest

NEW ZEALAND HAS ALLOCATED NEW FUNDS FOR RESEARCH AIMED AT MITIGATING THE DAMAGING IMPACT OF THE TOMATO-POTATO PSYLLID. NEVERTHELESS, THE FIGHT TO STOP THE INTRUDER REACHING AUSTRALIAN SHORES IS FAR FROM OVER.

N ew money has been allocated in New Zealand for research aimed at addressing ongoing issues posed by the Tomato-potato psyllid (TPP).

The country's Ministry of Business, Innovation and Employment has committed the funding to allow scientists at Plant and Food Research to investigate new control methods for the insect pest, and new cultivars with improved resistance to TPP and associated Zebra chip disease, according to a press release from Potatoes New Zealand.

First identified in New Zealand in 2006, the intruder has placed a significant burden on the country's \$470 million potato industry in terms of crop losses and control expenditure. According to the Potatoes New Zealand website the psyllid is "estimated to have cost the potato industry around \$60

million since it was first found."

As it feeds from the potato plant, the TPP can transfer a bacterium known as Liberibacter into the crop. This can affect the growth of the plant and create the Zebra chip disease in potato tubers. Zebra chip disease occurs as a result of excess sugar accumulation in the potato, which darkens when fried. The affliction affects taste and appearance, and subsequently lessens the overall worth of New Zealand's potato industry.

The pest has also been a source of some contention between the Australian and New Zealand potato industries, with local producers voicing concerns imported produce from across the Tasman could lead to contamination here. The pest is capable of damaging Solanaceous crops such as potatoes, tomatoes, capsicums, cucumber and eggplants which

represent about \$1.5 billion worth of horticultural production in Australia. Should the TPP spread to Australia, there are fears the damage visited on New Zealand could be replicated here on a much larger scale.

In a press release announcing news of the funding, Potatoes New Zealand CEO Champak Mehta said the additional money could help the country get back on track with its export potential. "This new funding signals new hope for the potato industry," he said. "The psyllid has gradually spread across the country since it was first discovered in 2006, and the costs and effort involved in controlling the insect, and the resulting disease, have added significant costs to growers. Having new cultivars with intrinsic resistance to the disease, as well as new technologies to control the insect in the field, will improve both the economic

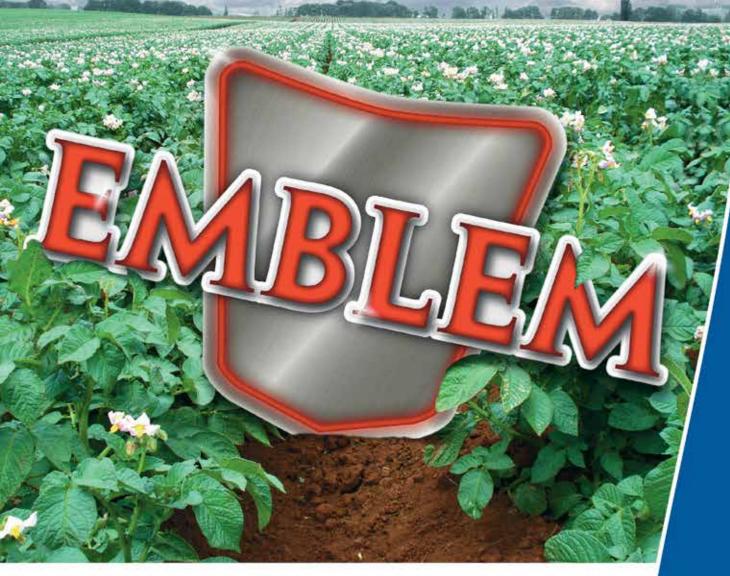
and environmental sustainability of the industry, and allow us get back on course in reaching our full export potential."

CROSSING

AUSVEG Biosecurity Advisor Dr Kevin Clayton-Greene said while ongoing investment in research in New Zealand was welcome, Australian authorities and the industry had to remain vigilant to ensure the pest did not reach our shores. He added the more that is known about the pest "the more worrying these insects and bacteria are."

"Given the cost pressures faced by the industry, extra costs associated with psyllid control are not needed (in Australia)," he said. "Any pest poses a threat to Australia, no matter how much you know about it, as there will inevitably be costs for control. In the case of the psyllid it has a particularly severe impact."

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- Rainfast after 2 hours (up to 40mm of rain)
- Safe to all varieties of potatoes
- IPM friendly







# Pest in the crosshairs as international research forges on

WITH THEIR COUNTRY CONTINUING TO FIGHT AGAINST THE PSYLLID, RESEARCHERS IN NEW ZEALAND HAVE COMPILED A YEAR'S WORTH OF INTERNATIONAL SCIENTIFIC LITERATURE ON THE PEST AS PART OF AN ANNUAL REVIEW.

Over the past year, large volumes of psyllid-related information have been publicly released. Through its Sustainable Farming Fund psyllid research program, New Zealand researchers have carried out an annual scan and compilation of international literature relating to the psyllid and Liberibacter (the bacteria which can cause Zebra chip disease). Here is a brief summary of some projects outlined in the

Psyllid-International Literature Review August 2012-July 2013, currently available on the Potatoes New Zealand website.

#### Review articles

In a comprehensive review of aspects of Zebra chip disease and management strategies, Lin and Gudmestad (2013) summarised current knowledge of the genetics of *Ca. Liberibacter solanacearum* and factors that might

determine disease virulence and pathogenicity in potatoes. The review also summed-up available information about the epidemiology of Zebra chip disease and plant host responses.

The use of insecticides remains the primary grower weapon against Zebra chip and psyllid, however, the development of some insecticide resistance (primarily to imidacloprid) has been documented in some US populations of the pest. Meanwhile, some Texas, USA, growers have been delaying plantings, in response to research indicating psyllid carrying the most Liberibacter were generally more prevalent earlier in the season. Growers have also been treating field edges with insecticides to reduce opportunities for psyllid movement. Other tactics have

included developing traps that chemically attract adult psyllids.

### Psyllid control

The use and cost of insecticides to control psyllid and Zebra chip disease on potatoes was assessed by Guenthner et al. (2012). They looked at control costs for 53 commercial potato fields in Kansas, Nebraska, and Texas. Growers in Texas spent an average of US\$740/ha annually (2009-11) compared to US\$700/ ha in the other two states. The total number of different insecticides used decreased from 16 in 2009 to 10 in 2010. The drop was attributed to initial grower trial-and-error and a gradually-better understanding of which products are most effective. The survey identified that the economic impact of Zebra chip is greater than the costs of using insecticides.

Plant essential oils have proven useful in other plantpest systems and have been considered as a possible helpful alternative to insecticides for controlling psyllid. The behavioural responses of psyllid to volatiles from dimethyl disulfide (DMDS) and 12 plant essential oils were examined by Diaz-Montano and Trumble (2013). DMDS, cedar wood, lime, savory, thyme, tea, oils of clove and pepermint showed a significant repellent effect on psyllid adults. Residual repellent effect of DMDS persisted for 10 days in the laboratory, while thyme, tea tree, peppermint, savory and clove remained repellent for 20 days.

#### Psyllid behaviour

Davis et al. (2012) experimented to determine whether potato plants infected with Liberibacter were more, or less, attractive to psyllid feeding than uninfected plants. It appeared potato plants infected with Liberibacter had an altered volatile chemical profile compared to uninfected plants. Consequently, plant infection impacts psyllid settling behaviour. Initially infected plants were more heavily settled, however, populations were then observed to gradually move on to uninfected plants. It is believed the pest is likely to initially settle and feed on infected plants before acquiring Liberibacter and transmitting it to uninfected host plants when it relocates.



# Psyllid distribution

In a New Zealand study, Cameron et al. (2013) investigated the impact of psyllid dispersal on crop infestation. Natural populations of psyllid were marked in-field with a microbial marker, and then recaptured on sticky traps in locations outside of the potato crop to provide dispersal estimates. Under gentle wind conditions, psyllid may disperse up to 350m over a three-day period with a mean dispersal distance of 100m. It appeared that only 10 per cent of psyllid dispersed beyond 250m over three days, suggesting, separate crops are infested with small, rather than large, numbers of psyllid. Consequently, adjacent

potato crops sown in sequence will be more easily colonised as most psyllid move short distances. Over the period of a growing season these dispersal rates suggest that psyllid will spread throughout a vegetable growing region and potentially be exposed to selection by the same insecticides over time.

#### Natural enemies

A two-year survey of field sites in southern California by Butler and Trumble (2012) identified *Orius tristicolor* (minute pirate bug), *Geociris pallens* (western big-eyed bug), and *Hippodamia convergens* (convergent lady beetle) as key natural enemies of psyllid in potatoes, tomatoes and bell peppers. The psyllid

parasitoid *Tamarixia triozae* was also noted as having good control potential in crops not repeatedly treated with pesticides. Cage exclusion studies indicated natural enemies can have a significant effect on psyllid survival, however, further work is required to integrate this information with psyllid management practices.

Research carried out in Pukekohe, New Zealand by MacDonald and Walker (2012) has shown that the most commonly found predator species are *Micromus tasmaniae* (brown lacewing) and *Melanostoma fasciatum* (small hoverfly) with populations of small hoverfly eggs and larvae reaching up to almost 200 per plant in unsprayed plants over January and February.

The full *Psyllid-International Literature Review August 2012-July 2013*, plus a full list of references, is available at: www.potatoesnz.co.nz/Overview/What-we-are-working-on/Psyllid.htm





To see the full report go to: tinyurl.com/l4jpjsg

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

# Q&A Young grower profile

Name: Patrick Fox

**Age: 27** 

Location: Margaret River, WA

Title: Manager Works: P.C. Fox

Grows: Delaware, Bliss and Atlantic seed varieties



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

Australia is one of the most disease-free potato growing regions in the world. It would have catastrophic consequences on our industry, particularly the seed industry, if we were exposed to some of the diseases that are found in other potato-growing countries. It's critical for our future that we don't get any more diseases into the Australian potato industry.

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

In my view I believe the Federal Government should set up a lending institute for the agricultural sector where fixed low-interest loans of two per cent or less are available for farmers, similar to what occurs in the USA. If young people see business and have a career in agriculture, it would generate more interest. As it stands now, it's extremely difficult for a new grower to start off from scratch.

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

After school I went into the viticulture industry for three years and gained some qualifications, so if I never got involved in the potato industry, I'd be more than likely pursuing a career down that path.

## Where do you see yourself in five years?

Having expanded my own export seed business, and producing high-quality lowgeneration certified seed potatoes. Australia has huge potential in the export seed industry, particularly within the south-east Asian region where potato consumption is growing more rapidly than any other region in the world. With increased consumption grows increased demand for seed.

# What did you gain from participating in the 2013 Potato Growers' Study







and management techniques over the years with the help of technology to make their businesses more profitable. We discussed their methods in disease and pest prevention/ controls and also learnt about the latest studies and research being done on virus and diseases, storage methods and the latest chemicals that are on the market. We learnt about how the USA and Canadian governments have realised the importance of agriculture to their economies, whereas here in Australia we don't seem to get the same support.

# What was the highlight of the tour for you and why?

Potato production in Idaho is something that needs to be seen to be believed. Being able to look at some of those huge operations was definitely a highlight. Also, being predominantly a seed grower, I found visiting the New Brunswick region and being able to talk with the growers in the region about the Canadian seed scheme, their markets they supply, varieties grown and their opinions on the industry, was really beneficial.



RECENT RESEARCH
CONDUCTED IN WA HAS
HELPED IMPROVE THE
UNDERSTANDING OF POTATO
VIRUS Y (PVY) AND RESULTED
IN THE DEVELOPMENT OF
RECOMMENDATIONS FOR
THE MANAGEMENT OF THE
DISFASE

Potato virus Y (PVY) infection poses a significant threat to Australian potato growers. A recently-completed study, led by Plant Virologist Brenda Coutts from the Department of Agriculture and Food Western Australia, has shed new light on the virus which causes the downgrading of seed stocks, inhibition of seed exports and severe tuber yield and quality losses in ware crops.

Since 2009, routine virus testing as part of the WA seed certification scheme has found an increasing number of PVY detections in WA seed potato crops. The virus is spread by planting infected tubers and is vectored by many aphid species. To date, the PVY strain in WA has been found to be the 'O' or ordinary strain, unlike in Victoria were the 'NTN' strain is present.

# Identifying reservoir hosts of PVY

As part of the research, weeds and volunteer potatoes were

collected from sites with previous PVY detections (2010 to 2012) to determine if the virus was still present. Fifteen weed species were tested and PVY was not detected in any of them

When volunteer potatoes were tested PVY was detected at one site where it had been previously detected in 2011 in a seed crop. In addition, Potato virus X (PVX) and Potato leafroll virus (PLRV) were detected.

From these surveys, volunteer potatoes are shown to be not only a source for PVY, but also a source for PLRV and PVX infection for spread to nearby seed potato crops. However, it would appear weeds are a low risk in spreading PVY. The lack of PVY infection in weeds may be due to factors including; a rotation of three to five years

between planting potato crops, sowing of mixed pasture that out-compete volunteer potatoes and weeds, the heavy grazing of weeds and volunteer potatoes by cattle, and the limited number of perennial weeds in these areas. This highlights the importance of destroying all volunteer potato plants before planting new crops to avoid virus spread.

# Susceptibility/resistance of selected potato cultivars to two WA isolates of PVY

Of 14 potato varieties examined in glasshouse experiments for reactions to PVY 'O' infection, only Royal Blue, FL1867 and FL2195 did not become infected. These varieties are

considered resistant to the 'O' strain. Atlantic, Almera, Bliss, Delaware, Rodeo FL2215, FL2137 and FL2204 varieties are all susceptible, with infection carried to the tubers producing infected second generation plants. Nadine, Granola and Ruby Lou plants died after contracting the disease.

### Spread of PVY by contact

From glasshouse experiments it was found PVY can readily spread from infected to neighbouring healthy potato plants by leaf contact. Also, when high concentrations of PVY were present on cutting blades, transmission through the tuber to the growing shoots also occurred occasionally.

PVY was found to remain infective on tyre and metal, for







24 hours, and on cotton for six hours. Given the length of time sap remains infective, hygiene, and decontaminating equipment, are important in reducing the spread of PVY.

The most important PVY control method is the use of disease-free seed. Meanwhile, overseas research has indicated mineral oils and crop borders could potentially be additional management tools.

# Management protocols of PVY

Incorporating the project's findings and previously available data, a management package for PVY in Western Australia has

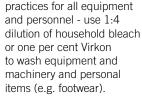
been developed. Authorities are confident under the strategies PVY levels will not increase, and are hopeful instances of the disease will be reduced, or fall to zero.

Virus testing continues as part of the certified and registered seed schemes, with growers encouraged to have suspect samples tested, to allow monitoring of the levels and strains of PVY in WA.

#### Recommendations

To minimise PVY spread, an integrated disease management approach is necessary. In order to successfully achieve this it is recommended growers do the following

- Plant seed potatoes with zero level of PVY, or certified seed with infection levels below permitted tolerances.
- Remove and destroy old potato crops immediately after the final harvest and ensure no tubers are left behind.
- Do not leave any tuber cull piles in the field.
- Destroy any volunteer potato plants and weeds before planting.
- Remove any potato plants showing virus symptoms early in the life of the crop.
- Plant a non-host border crop around the potato crop about four weeks before planting – a non-host border acts as a cleansing barrier for aphids.
- Plant new crops upwind from older crops.
- Employ good hygiene



- Avoid moving machinery, equipment and workers from old crops to new ones.
- Use PVY resistant potato cultivars when available.

# Insecticides are ineffective in PVY control

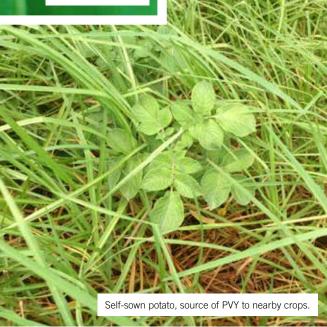
It is important to note that although PVY is spread mainly by aphids, insecticides are ineffective as a control measure because they do not work fast enough to prevent aphids feeding on and infecting a healthy plant before it is killed, and often by the time aphids can be seen, virus spread is already well underway.

# THE BOTTOM LINE

- Potato virus Y causes the downgrading of seed stocks, inhibition of seed exports and severe tuber yield and quality losses in ware crops.
- When volunteer potatoes were tested, PVY was detected at one site where it had been previously detected in 2011 in a seed crop.
- Of 14 potato varieties examined in glasshouse experiments for reactions to PVY 'O' infection, only three did not become infected.
- From glasshouse experiments it was found PVY can readily be spread from infected to neighbouring healthy potato plants by leaf contact.
- Incorporating the project's findings and previously available data, a management package for PVY in Western Australia has been developed.



Research was funded by Agricultural Produce Commission-Potato Producers Committee and Department of Agriculture and Food, Western Australia. For more information please contact: Brenda Coutts, DAFWA Email: Brenda.coutts@agric. wa.gov.au





FROM THE DEEP RED SOIL OF THE ATHERTON TABLELANDS, FRANK CUDA AND HIS FAMILY HAVE DEVELOPED ONE OF QUEENSLAND'S LARGEST POTATO GROWING OPERATIONS. AS ANDREW MACDONALD WRITES, THE SUCCESSFUL GROWER IS CONSTANTLY SEEKING NEW INNOVATIONS TO ENSURE HIS BUSINESS REMAINS COMPETITIVE.

potatoes and improving productivity are two things which occupy a whole lot of Frank Cuda's time. For as long as he can remember, the successful grower from Queensland's Atherton Tablelands has been involved in the industry. From his relatives' humble beginnings growing on just a few acres, Frank has helped steer the Northqual operation, which he started 20 years ago with his brother Richard and father Phil, to the point where it produces at least 15,000 tonnes of potatoes across 400 hectares each year. It's these impressive stats which make Northqual one of the largest potato producers in

north Queensland, if not the state

While much of this success can be attributed to the supply of fresh goods to Woolworths, Northqual also freights a significant proportion of its product to PepsiCo, which crisps the Cudas' potatoes for use in its Smith's chips. "When we started (about 20 years ago) we were only doing about 12 hectares of fresh, but now we've grown to over 400 hectares of fresh and crisping," says Frank. "With PepsiCo, we supply Smiths for the July-December period and we supply Woolies, more from the end of September to the start of December. That's sort of our

window so we're supplying at a time when we can get our best yields and the best quality out of our operation in to Brisbane, Sydney and Melbourne."

Being based in far north Queensland, while supplying much of Australia's eastern seaboard, poses plenty of logistical challenges for the operation. Frank explains that in order to deal with the long distances, some innovative solutions have had to be found. Most notable of those he says is the packing of loose potatoes on-farm in preparation for the train ride from Innisfail to PepsiCo's Brisbane facility.

"We do pre-packing for north Queensland Woolies and that's all done on-farm," he says. "It's not that big as it's just for north Queensland, so not like they would operate in Brisbane or Sydney, but it does the job."

"One of the things that is pretty unique to Australia is that we shift all our potatoes from North Queensland in to the Smiths PepsiCo factory in Tingalpa in Brisbane via rail and that is sort of unique for this country, where we're actually filling containers with loose potatoes."

Along with logistical issues faced by the company, the current state of the potato industry is also posing plenty of challenges. From seeking solutions overseas to investing in new equipment to experimenting







with new varieties to diversifying, the Cudas are willing to try it all in order to remain competitive.

"Over a 20-year period [there's] been enormous growth and it's been a challenge to supply all the capitals. To do it we've had to install centre pivots and the lateral move irrigators to move with the high standard of product that is expected in the marketplace," Frank says. "My brother just bought a self-propelled rimming harvester

which is a first for the area so that will be fairly interesting to see how that goes. We also have several properties and we lease several properties and that helps with our rotational programs of course because it can be risky just loading it all up in to one property."

"What we're doing is extremely tough and nobody is interested in our excuses or our difficulties so we've got to just work hard at it ourselves and to get those reasonable profit margins. That's what it boils down to. Without productivity gains, it's going to be very difficult to survive at the farm level."

Frank says he is always keen to experiment with new varieties and keeps a keen eye on R&D in the field. "We're growing a Golden Delight variety for Woolies, and for PepsiCo we grow two Frito-Lay varieties," he says. "We also do a gourmet variety of Kipflers for Woolies nationally and we're looking to do organic for Woolies at a national level during our window as well."

"We're certainly involved heavily in trialling new varieties and there are some very promising ones moving forward, but that's for the future. I think all breeding organisations, breeding people, are looking for that potato that will get you more yield from the same water, the same fertiliser, or even less water and less fertiliser. That is very encouraging that our potato breeders are looking for that more disease-resistant, more moisture-stress-resistant, heavier-yield potato."

While local innovations have served the operation well, Frank says he has also been prepared to look further afield and learn from the experiences and expertise of overseas growers. Recent trips to Europe and the USA over the past two years have helped provide valuable insights in to the techniques employed by other countries and how challenges are met.

"This year we went to the US to a few large production operations to look at the varieties they've got over there and their methods," he says.

"What's interesting is that they've got a limited amount of time to harvest their potatoes, because it snows and gets so cold. So everyone has got their challenges but the key thing is we're always looking around, not just in our own country but overseas for new ideas. That's the only way we're going to survive and make those productivity gains."

Despite the challenges, Frank says he believes there is still a strong future in potatoes. "I am in the dairy business as well but potatoes are a very important part of our business," he says. "We want to stay with potatoes because we've always had potatoes and we believe the Tablelands, with its fertile red soil, really produces good articles in terms of taste, shape, shelf life and all the rest."

"We can see more growth in the crisping market as we move forward and, while people talk about washed at the moment, I think brushed is a more natural look. Washing potatoes is not a cheap exercise, so in the long run I think that brushed potato growers will be fairly competitive and have a more natural product on the shelf."

With the Cudas' operation set to be opened up during a farm visit at the upcoming 2014 AUSVEG National Convention, Trade Show and Awards for Excellence, Frank says he believes growers will take plenty away from the tour. "I think people will also be taken with just how clean and how green north Queensland is," he says. "Not to forget the deep, deep red soil."



# **Skin is king:** optimising nutrition and irrigation in potato crops

THERE IS AN INCREASING DEMAND ON POTATO GROWERS TO SUPPLY CONSUMERS WITH SPOTLESS, ATTRACTIVE POTATO SKINS AND FINE QUALITY TUBERS. POTATOES AUSTRALIA SPOKE TO YARA'S MATTHEW WETHERALL ABOUT THE COMPANY'S RECENT RESEARCH AND DEVELOPMENT INTO ATTAINING OPTIMAL SKIN AND TUBER QUALITY USING BEST PRACTICE IRRIGATION AND NUTRITION.

An increasing demand for attractive, blemish-free potato skins from retailers, restaurants and providores means Australian potato growers need to be well aware of how to best handle their crop's nutritional needs. Yara agronomist, Matthew Wetherall, says potato growers must develop an intrinsic understanding of what nutrients to use – and when – to ensure they avoid any quality issues with their crops.

"You can grow anything with water. It's just how you actually improve yields through using and manipulating other things, like fertiliser and ag-chem," he says.

Mr Wetherall recently addressed Western Australian potato growers at a Potato **Industry Extension Program** workshop in Pemberton, to discuss how to improve potato skin and tuber quality using Yara's recent developments in crop nutrition. Founded in the world's northern reaches in Norway in 1905, Yara is a supplier of specialist crop nutrition advice and fertilisers to farmers throughout the world. It is now the largest producer of ammonia, nitrate and complex fertiliser

Most of the company's R&D in plant nutrition is undertaken at the Research Centre for

Plant Nutrition Hanninghof in Dülmen, Germany, located around an hour's drive north of Cologne. Yara also engages with a range of institutions to build on its wealth of expertise. For example, Mr Wetherall says that most of the company's information on the role of calcium in plant nutrition was obtained in collaboration with the University of Wisconsin in Madison, United States.

"When it comes to fertiliser, even though we do a reasonable amount of research ourselves, we also take a lot of research data from around the world," Mr Wetherall says.

As an agronomist, he spends much of his time on the dusty back roads of South and Western Australia disseminating this information to growers. According to Mr Wetherall, correct water management is one of the most critical factors affecting tuber and potato skin quality. "Irrigation is the most important thing to get right. If you don't get irrigation right - if you over irrigate or under irrigate, it leads to a lot of issues," he says. "And this not only relates to potatoes, but to a whole range of horticultural crops."

Next to irrigation, Mr Wetherall has found some growers in his region are simply growing in soils unsuited to the humble



"Irrigation is the most important thing to get right.

- Matthew Wetherall

spud. "[Potatoes] have a very good history of growing in soils of around six to seven pH, which are ideal conditions. But we quite often find growers growing potatoes in areas where they have a pH of around 7.5 and above," Mr Wetherall states.

A majority of Yara's research at Dülmen is conducted using fresh European potato varieties. With new varieties 'hitting the paddock' every day, Mr Wetherall says it is important for growers to appropriately adjust their growing techniques. "When we get European potato varieties coming into Australia, we have to grow them differently to how we would grow traditional varieties like Coliban and Desiree. Not all growing ways are bulletproof," he says.

Mr Wetherall says excessive use of nitrogen could result in crop issues, such as Powdery and Common scab. "Nitrogen has a big effect on overall quality, and in some cases growers aren't using the right form of nitrogen to get the results that they want," he says.

Mr Wetherall says Western Australian soils tend to hold nutrients better than many of the growing soils of South Australia, but WA growers are still applying equally as much nitrogen, despite their soils' lower leeching factor.

"I think quality is sometimes overlooked, depending on the size of the farm. Economy is power for [the bigger] guys, but if you have a smaller grower who has grown on around 20 acres, he has a lot more control over his fertiliser and growing conditions, and issues," he says

"There's enough information available now, and a lot of research done, to understand when nitrogen, potassium, phosphorous and calcium is required by a plant and how it can maximise crop quality. If you haven't got quality there, it costs the farmer a lot. It doesn't cost a whole lot more to grow good quality crops," he says.

Mr Wetherall is a strong advocate of extension. He says that as a corporation, Yara is committed to taking the information and knowledge it has and delivering it to growers.

"It's about educating farmers how to best utilise their nutrient input and assist them to improve their quality and yield to get a better return at the end of the day."

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# Spuds abroad: the 2013 Potato Growers' Study Tour takes on the northern hemisphere

TEN POTATO LEVY PAYERS EMBARKED ON AN EXTENSIVE TOUR OF THE USA AND CANADA FOR THE POTATO GROWERS' STUDY TOUR IN JULY THIS YEAR. THE STUDY TOUR VISITED LARGE-SCALE POTATO PROCESSORS, RESEARCH CENTRES, AND ATTENDED THE POTATO ASSOCIATION OF AMERICA'S ANNUAL CONFERENCE IN QUEBEC CITY, IN WHAT WAS A HIGHLY BENEFICIAL TRIP FOR ALL PARTICIPANTS.

The 2013 Potato Growers' Study Tour – USA and Canada gave 10 potato levy payers the opportunity to gain a further understanding of the methods and practices utilised by the United States and Canadian potato industries. It also gave them the opportunity to observe the various operational, research and development (R&D), marketing and business initiatives undertaken across the two countries.

The primary focus of the 10-day study tour was to provide participants with a contrast between Australian and North American potato growing, processing and research activities. This was achieved through a tour itinerary which explored the United States' largest potato-growing state, Idaho, and Canada's primary potato-producing regions, New Brunswick and Prince Edward Island. In these key growing areas, the tour group visited

several major growing facilities, processing plants, and R&D institutions, as well as the Potato Association of America (PAA) annual conference in Quebec City, Canada.

#### **USA**

According to the tour's attendees, Idaho was the most impressive area visited while on the tour. The group marvelled at the sheer scale of Idaho's potato growing and processing

operations, and irrigation initiatives. Idaho is the single largest potato producing state in the US, with approximately 400,000 acres planted annually.

The group began by touring the Simplot processing factory in Caldwell. The factory currently operates nearly 24 hours a day, seven days a week, processing Russet Burbank, Ranger Russet and Sheppard varieties. The factory alone processes 631,272 tonnes of potatoes per year. To put this into perspective,

by comparison, a total of 744,842 tonnes of potatoes were processed in Australia in 2010/11

After this, the group was guided around the Simplot Grandview Farms. Jack Simplot, founder of J.R. Simplot, established the farm after noticing that the potatoes from the processing factories produced a lot of waste. Mr Simplot decided the waste could be used as feed for cattle, and today, 100,000 head of cattle consume the waste potato, with the manure produced by the cattle then used to fertilise the potato fields.

The tour then travelled to Twin Falls, where they visited local potato farms as well as the University of Idaho Research Centre to discuss topics such as disease and pest management, storage methods, and on-farm diagnostic kits, amongst others.

After stopping by some more potato farming operations in Salt Lake City, the group jumped on a plane to complete the second part of their tour in Canada.

#### Canada

With an early start, the group explored New Brunswick, the largest potato-growing area in Canada. The group visited local farms and the Fredericton Potato Research Centre. The Potato Research Centre works in tandem with the nearby Fredericton Plant Propagation

Centre to breed new varieties for growers, while assisting them to be more productive, and providing performance information. Over 250 varieties of seed, table and processing potatoes are grown in the New Brunswick province.

According to Potatoes New Brunswick, the area has the perfect climate and topography for growing potatoes. This actually enhances the flavour of the potatoes, or as some of the French speaking natives call them 'pommes de terre', which translates as 'apple of the earth'.

From here the group travelled to Prince Edward Island, where 25 per cent of Canada's potatoes are produced to a value of approximately one billion Canadian dollars. The group visited several growing operations, research plots and an early generation production facility on the island's south.

In Canada, the final stop on the tour was in Quebec City, to attend the Potato Association of America (PAA) annual conference. The major objective of the PAA is the collection and dissemination of the best available technical and practical information relating to all aspects of potato production and biology. This year's conference was focused on bacterial diseases in potatoes and the day's delegate program looked into new technical measures to predict diseases or yield complications. Although



much of the day's conference was technical, the tour was eager to see the presentations on Zebra chip disease and Potato virus Y.

# Feedback and recommendations

During this tour, the group gained a deeper knowledge of the international potato industry, which can now be disseminated to the wider Australian potato industry. Overall feedback from the tour was very positive, with several recommendations over a number of areas gained from the tour participants.

These ranged from requests for the potato industry to invest in researching mineral oils as a deterrent against psyllids in potato crops, to suggesting the industry establish exchange programs with contacts made in the US and Canada.

This study tour was funded by HAL using the National Potato Levies, voluntary contributions from industry, and matched funds from the Australian Government.



Project Number: PT12704



News in brief

McCain engages with industry after Penola news



A ustralia's battling potato industry has copped another blow, with the announcement McCain is set to close a factory in South Australia. The decommissioning of the Penola facility, in the south-east of the state, by Christmas will result in nearly 60 redundancies, and has left local growers facing an uncertain future.

McCain has blamed the steady flow of cheap imported products and increasing overheads from both labour and utilities for the decision. Prior to the announcement, about half the McCain potatoes grown around Penola were processed at another of the company's facilities in Ballarat. McCain now plans to transport all Penola produce to Victoria for processing.

Growers, however, have warned the additional costs of moving their potatoes hundreds of extra kilometres could seriously damage profitability.

AUSVEG Public Affairs Manager William Churchill said the organisation was seeking assurances growers would be looked after. "We would like to see McCain outline packages to assist affected growers in both the short and long term, including logistical support to see these potatoes processed at other McCain facilities, such as the one in Ballarat," he said.

In response to questions about transport costs, a McCain spokesperson said the issue, including additional expenses as a result of B-Double truck registrations, was being canvassed during discussions with growers. He added, while conversations were ongoing, as yet, no resolution had been reached. "Not at this stage because the issue is very complex and depends on the planted crop, the quality of the crop and whether it's stored or run direct. Regionally grown, the actual harvest date, and

the logistics of the transport; all these factors have a bearing on costs," he said.

With McCain now involved in talks with growers, the company spokesman said at this stage there were no plans to reduce the amount of produce sourced from contractors servicing Penola and Ballarat. Asked if the company had any plans to close its remaining processing

operations in Victoria and Tasmania, he said: "McCain is fully committed to its operations in Australia."

Nevertheless, he conceded many challenges were yet to be addressed. "Australian potato growers still have challenges before them to be competitive and import-resistant against cheaper imports from Europe and North America."

# AUSVEG and McCain hold productive talks

With McCain's announcement of plans to decommission its Penola processing operation in South Australia dominating industry news in recent weeks, AUSVEG is continuing play a role in representing growers' interests.

During a meeting at AUSVEG's Camberwell headquarters on November 19, senior management, including Chairman Geoff Moar, CEO Richard Mulcahy and Public Affairs Manager William Churchill sat down with McCain executives, including Regional President Australia, New Zealand and South Africa Louis Wolthers and Agriculture Director Australia and New Zealand John Jackson.

A range of industry issues were discussed during the lengthy meeting, which also

coincided with a seperate visit to AUSVEG HQ by an Israeli delegation, including Ambassador Shmuel Ben-Shmuel and Secretary General of the Israeli Farmers Federation Avshalom Vilan.

**AUSVEG CEO Richard** Mulcahy said the organisation would continue its dialogue with McCain to ensure growers' interests are strongly represented. "The challenges faced by our industry have been starkly illustrated by recent developments and need to be met head on," he said. "The future of our industry depends on all parties sitting down and working on solutions. The fact we are speaking with McCain is a promising development, and one which we hope will result in the best possible outcome for growers.'

We would like to see

McCain outline packages to

assist affected growers in both
the short and long term.

- AUSVEG Public Affairs Manager William Churchill.

# Bringing potatoes in to the spotlight

WESTERN AUSTRALIA'S POTATO
MARKETING CORPORATION (PMC) HAS
RECENTLY LAUNCHED A \$1.8 MILLION
CAMPAIGN AIMED AT GETTING PEOPLE
TO BUY AND CONSUME MORE FRESH
POTATOES. THE "FRESH POTATOES"
CAMPAIGN IS BACKED BY A CALENDAR
OF EVENTS TO BE HELD UNTIL JANUARY
2014, WRITES FELICITY POWELL.

Research shows the average West Australian consumes potatoes 1.5 times a week, with older age groups consuming potatoes more frequently than younger age groups. Younger consumers have a perception that potatoes are unhealthy and inconvenient.

In order to reverse this perception, PMC has launched their new "Fresh Potatoes" campaign, with the goal of

getting more consumers to use potatoes more often in their cooking repertoire. With 24 varieties of potato grown in WA, the PMC hopes to boost fresh potato production to 60,000 tonnes by 2016. The core target market is consumers under the age of 45, with a particular focus on families with young children. The growerfunded campaign employs a multi-platform media strategy



- using YouTube videos and commercials, tactical press releases, social media presence and point of sale advertising.

While Potato Week may be over for this year, running from September 30 to October 6, the campaign continues, with monthly activities lined up until June 2014. Just in time for the holiday season, PMC will release Christmas-themed recipes and features, and will begin cinemabased advertising.

From February, the campaign will change to become more TV and digitally-focused, with a *Today Tonight* kitchen cook-off,

a link with *My Kitchen Rules*, and a Channel 11 sponsorship. The campaign will also target schools with the "Seed for Schools" initiative.

The Fresh Potatoes website provides a wealth of knowledge for the general public. The website features innovative and tasty recipes, hints and tips from experts, and offers the opportunity to sign up to a regular newsletter which outlines the latest potato recipes and information. For more information, visit www. freshpotatoes.com.au.





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# Old Dart aims to bolster value: Learning British marketing lessons

THE POTATOES IN PRACTICE FIELD DAY IN THE UNITED KINGDOM HAS PROVIDED INSIGHT IN TO BROADER ISSUES AND TRENDS WITHIN THE BRITISH POTATO INDUSTRY.

he fifth annual Potatoes in Practice Field Day event was recently hosted in Dundee, Scotland, by the UK Potato Council in conjunction with James Hutton Institute, SRUC and Agrii. The event at Balruddery Farms targeted growers, agronomists, scientific researchers, industry representatives and supply chain stakeholders. From an Australian perspective, it was an opportunity to investigate whether such an event could be held here. It was also a chance to improve the existing strong relationship between the Australian and UK industries. Following the Field Day and a visit to a potato growing operation, some insights were offered in to other elements of the UK potato industry. The CEO of the UK Potato Council, Dr Rob Clayton, discussed, among other topics, the success and practicality of the UK approach to marketing potatoes and promoting health messages. The topic proved interesting given recent debate about whether it would be worthwhile introducing a marketing levy

### The British system

The UK potato levy system operates differently to the Australian one in that the Potato Council can spend levy funds in any way, provided they comply with European Union (EU) regulations. This model allows the organisation to undertake not only research and development, but also marketing activities under strategic investment guidelines set by its Board. Currently, approximately one third of the levy funds are invested in marketing activities.

### Pushing the health perks

The Potato Council's marketing approach focuses primarily on selling potatoes as a "package" comprising health benefits and environmental sustainability. When spruiking the healthy aspects of the product, the organisation must ensure campaigns use researchbased evidence. Potatoes are promoted as fat and cholesterolfree, low-salt sources of fibre, potassium and vitamins B6 and C. The organisation has ensured Members of Parliament have received packages highlighting





these benefits. Schools have also been identified as fertile ground with an entirely industry-sponsored program entitled 'Grow Your Own Potatoes' successfully implemented, across approximately two-thirds of UK primaries. The next step, 'Cook Your Own Potatoes', has been designed to increase awareness among secondary students. About 20 growers from across the UK have also been selected as product ambassadors.

# Measuring results

Despite the proliferation of information about the benefits of the product, Dr Clayton



acknowledged marketing campaigns have probably not increased consumption, but rather halted a decline. The organisation has now shifted its focus from 'volume to value', which acknowledges, while consumption may not increase significantly, there is scope to improve value.

Another point arising from the data is that health messages don't necessarily fare well in recessions, where consumers focus on value for money.

# Signposts on the road to success

The first method of trying to improve value is known as 'signposting' and refers to creating a premium brand. The only real successful case involves Rooster potatoes, a branded product suitable for roasting, baking in the jacket and chipping. It was suggested Rooster's aggressive marketing push may have increased consumer awareness about dietary benefits and different potato varieties. Some also believe the campaign may have increased consumption, however, as yet, there is no data to support this. It is also worth noting Rooster's owners have spent millions on marketing. The end result is the ability to charge a premium for their potatoes.

### Fluffy, salad and smooth

The second identified valueincreasing method involves providing a product that can be developed for a specific purpose. Following a series of consumer focus groups, the Potato Council identified 'fluffy', 'salad' and 'smooth' as the words most commonly emerging in relation to potatoes. Subsequently, a campaign was developed to increase awareness of specific potato varieties, with the idea being to shift consumer spending from the notion of an "allencompassing" potato to the concept of spending more on specific varieties for specific purposes. The success or otherwise of this method remains unclear as the program is ongoing.

### Lessons for Australia

The clear distinction between the UK and Australian industries is that the levy funds here can't be used for marketing. Therefore, promotional campaigns to increase consumption or to promote and explain varieties are prohibited. One element of the UK approach – communicating the health benefits of potatoes – is permissible here, provided it doesn't cross a line in to pure marketing. Initiating

a schools program to teach children how to grow and cook potatoes could be considered by the Australian industry and it may be worth considering how the health benefits can be communicated at a retail level without crossing into marketing. Expectations, however, should be managed. It would be incorrect to assume any such campaign will significantly increase consumption in a sector experiencing a rapid decline. Growers should continue to develop more valuable products rather than trying to shift large volumes.

AUSVEG National Marketing Manager, Simon Coburn attended the Field Day and also spoke with Dr Clayton.

# THE BOTTOM LINE

- This visit to the United Kingdom provided detailed insight into two main aspects: a largescale potato field day and the marketing campaign undertaken by the UK potato industry.
- While implementing a field day within Australia is achievable and can be managed by a body with significant resources such as the Peak Industry Body, UK marketing programs may be more difficult to replicate due to the restrictions on levy funds in Australia.
- There is scope to utilise some ideas, such as school programs and health messages, however, it is unclear whether such approaches would be successful in increasing potato consumption.



Further information: AUSVEG Phone: (03) 9882 0277 Email: info@ausveg.com.au

Project Number: PT11701

# Potato Extension Program

# Potato Extension Program completes its second successful year of operation



THE POTATO EXTENSION PROGRAM HAS ENDED 2013 WITH A SERIES OF WORKSHOPS IN VICTORIA AND WESTERN AUSTRALIA. AS THE INITIATIVE ENTERS ITS THIRD YEAR OF OPERATION, PLANNING IS ALREADY WELL ADVANCED FOR EVENTS IN 2014.

The Potato Industry Extension Program will soon kick off its third year in operation, following a highly successful second year of activities in 2013. Throughout the year gone a range of valuable potato R&D-focused initiatives have been delivered, including workshops, field days, e-Newsletters, farm meetings and, of course, the dedicated R&D information booth at the AUSVEG National Convention.

In 2013, key potato R&D information was taken directly to

potato growers right across the country. Leading researchers, agronomists, growers and other industry experts presented at workshops in Creswick, Ballarat, Warragul, Devonport, Gatton, Penola and Pemberton, and field days were held amongst the crops in Bungaree and Sassafras. We've also been involved in a host of other industry events to discuss R&D issues, including the Simplot Potato Futures workshops held across Tasmania in September.

The high level of support that the Program has received throughout the year is extremely encouraging, and demonstrates the strong commitment that exists within the industry to learn about new production tools and farming practices that, if implemented, could help to increase productivity, yields and on-farm efficiency.

Building on the achievements of the first two years of activities, in 2014 the Potato Extension Program will explore some exciting new extension initiatives that aim to make accessing potato R&D information even easier. Most importantly, we'll be continuing to talk to you – potato levy payers, agronomists and other key industry members — about the key issues affecting potato operations around the country, and the practical information that is needed to help tackle these challenges.

# Potato R&D Workshop held in Pemberton, WA

The Potato Extension Program held an R&D workshop in Pemberton, Western Australia, in late September. The event was chaired by grower and President of the Potato Growers Association WA, Mr Dean Ryan. It was attended by approximately 25 local potato growers, despite the extraordinary weather conditions at the time which left several towns in the area without power.

Joining the line-up of speakers who presented at the workshop was internationally-acclaimed potato researcher, Professor Richard Falloon, who discussed the latest research findings of Powdery scab disease – a highly destructive soil-borne potato disease that has proven troublesome to the WA potato sector.

Prof. Falloon is a plant pathology scientist at Plant and Food Research NZ, as well as Deputy Director at the Bio-



Protection Research Centre at Lincoln University. His current research on Powdery scab disease is part of a collaborative research project that is currently being carried out in New Zealand and Australia, which links to the Australian Potato Research Program Phase 2 (APRP2) undertaken for the Australian processing potato sector.





Department of Agriculture and Food WA (DAFWA) Plant Virologist, Ms Brenda Coutts, also joined the workshop to present on a recently-completed project conducted in WA, regarding the management and detection of Potato virus Y (PVY). Ms Coutts' research brought together a range of findings on PVY from both Australia and abroad, in an effort to form a better

understanding of the virus, including how and where PVY strains survive.

Detailed information on Ms Coutts' research on PVY is featured on page 16 of this edition of *Potatoes Australia*.

Additionally, Mr Matthew Wetherall, from horticultural fertiliser supplier Yara Australia, delivered an informative presentation on methods to improve potato skin and tuber quality. Mr Wetherall discussed a range of crop nutrition information, outlining the various nutritional principles required to achieve a "topperforming" potato crop. Yara have been highly involved in crop trials and other research and development activities relating to crop nutrition. Mr Wetherall's presentation was well-received by the growers at the workshop, who were eager

to learn more about nutrition strategies.

In his presentation, Mr Wetherall discussed:

- · Potato cultivars.
- Market requirements for seed, fresh and processing potato production.
- Agronomic principles (including crop characteristics, soil type and management, physiological ageing and water management).
- Influencing yield and quality (including tuber size, tuber number and quality, and skin finish)
- Soil and plant analysis.

Key to Mr Wetherall's presentation was a discussion on the effects of specific nutrients on yields and growth. This included an outline of the role that Nitrogen (N), Phosphorus (P), Potassium (K), Calcium (Ca), Magnesium (Mg) and Sulfur (S) play in a potato crop, and effective strategies for the application of these nutrients.

For more information on Yara's research activities on potato skin quality issues, please refer to page 20 of this edition of *Potatoes Australia*.



Farm Meeting in Myalup, Western Australia

While in Western Australia in September, AUSVEG representatives also conducted several farm visits and meetings to discuss the Potato Extension Program with local growers one-on-one, as well as issues they are experiencing in their operations.

New Zealand's Prof. Richard Falloon, who presented at the Pemberton workshop, also took part in these meetings to speak directly with growers about his research on Powdery scab disease. At a meeting held on the property of local grower Joe Castro in Myalup, WA, approximately 10 potato growers from the surrounding area took part in a valuable information session led by Prof. Falloon, where discussions focused on a range of effective crop management practices that could help curb the potentially devastating impact of Powdery scab disease.



For more details on any of the information cited above, including the presentations delivered, please contact AUSVEG on info@ausveg. com.au or phone (03) 9882 0277. Project Number: PT11004



# Potato R&D Workshops held in Ballarat and Warragul

Capping off extension activities for 2013, two back-to-back R&D workshops were held in the first week of December, in Ballarat and Warragul (Victoria). The events aimed to provide growers, agronomists and other members of the industry with practical information on a number of issues relevant to these potato-growing regions of Victoria, including Potato virus Y (PVY), Pink rot and controlled release fertilisers.

The workshop in Ballarat was held on the evening of Monday 2 December at the Red Lion Hotel, and was chaired by The Hon. Paul Calvert – Independent Chair of the Fresh and Processed Potato IACs and former President of the Australian Senate. The event in Warragul, held at the Warragul Club Downtowner, was chaired by Mr Frank Rovers, a potato grower from Koo Wee Rup and Chair of the Victorian Potato

Growers Council (VPGC).

With Victorian growers recently requesting new information on Potato virus Y (PVY), including any advanced detection and management strategies, AUSVEG arranged for PVY expert, Ms Brenda Coutts, from the Department of Agriculture and Food Western Australia (DAFWA), to present at the workshops on new research findings on the virus. PVY has proven a serious issue for the Victorian seed potato sector over the years. It has been known to wipe out almost entire crops and, sadly, has brought numerous operations to their knees, due to the significant yield reductions that PVY can cause. Ms Coutts' presentation on PVY at the workshops provided growers with a valuable opportunity to be updated on the latest knowledge of this destructive potato virus.

Also joining the workshops

was Impact Fertilisers' National Agronomy Services Manager, Mr Andrew Olley, who discussed the use of controlled release fertilisers in commercial horticulture. Mr Olley presented on this topic at the 2013 AUSVEG National Convention, which was very well received. The practice, which is relatively new to the potato industry, has garnered strong interest this year. Many Victorian potato growers this season have either commenced trials using controlled release fertilisers, or have requested further information on how it can be applied to their crops. Mr Olley's presentation was highly anticipated by growers attending both workshops.

The final speaker at each of the workshops was Senior Research Scientist at the South Australian Research and Development Institute (SARDI), Ms Barbara Hall, who presented on the topic, 'Potato Pink rot control in field and storage'. Ms Hall was a primary investigator of an industry-funded R&D project completed some years

ago, that sought to gain a better understanding of the causes and behaviours of Pink rot disease and its associated pathogen. The project also aimed to develop some practical strategies that could help to reduce the incidence and severity of Pink rot.

In recent seasons, potato growers in key production regions of Australia, particularly in Victoria and Tasmania, have experienced major issues with Pink rot – a soil-borne disease caused mainly by a water mould organism. The disease can result in plants dying and tubers rotting and can cause significant economic losses through reduced yield and storage potential.

Ms Hall's presentation on the findings of research on Pink rot, which included advice on disease management and post-harvest practices, provided growers with some much needed information on the disease, and generated some beneficial discussions.

# Ask the industry

# The lowdown on Late blight



# SCOTT MATHEW, TECHNICAL SERVICE LEAD AT SYNGENTA, EXPLAINS LATE BLIGHT – A COMMON DISEASE IN POTATO CROPS – AND HOW TO BEST MANAGE IT.

With a wet, and in some cases, late start to the season, I thought that it may be timely to touch on Late blight (also known as Irish blight or Potato blight) (*Phytophthora infestans*), which we are beginning to see more of in Australia. Despite its name, Late blight occurs most often in the early growing stages of potato crops. It can cause significant crop yield loss, provide an infection source for neighbouring crops, and, under ideal conditions (when no intervention occurs), lead to the destruction of the entire crop over a short period of time.

Late blight spores require water to germinate and penetrate the potato tissue. Conditions must remain moist for a minimum of seven to 10 hours for spore production to occur. These spores are then carried by wind and rain to healthy plants where the disease cycle begins again. The fungus can complete many reproductive cycles in a season, accounting for the rapid increase of disease once it becomes established in a field.

During humid conditions, spores are liberated and dispersed by both wind and water. The fungus spreads rapidly throughout the foliage, invading healthy leaf tissue and producing fresh spores. These new spores are then washed down

into the soil by rain or irrigation where they readily penetrate tubers via the eyes, lenticels, cracks or wounds.

Late blight development is favoured by high moisture and moderate temperatures for periods of several hours. Night temperatures of 10°C to 15.5°C and day temperatures of 15.6°C to 21°C are the preferred conditions for disease development. Rain, dew, sprinkler irrigation, and high relative humidity (greater than 90 per cent) may all provide favourable conditions for disease development.

While symptoms of Late blight may vary, in most cases the first signs are small, dark green, circular, water-soaked spots, usually appearing on the lower leaves of the plant and around the leaf tips or edges, and then spreading out across the leaf surface. Under favourable conditions, these disease spots can rapidly grow into large, brown to purple necrotic lesions. With ongoing moist conditions, a white downy growth also appears at the edge of the lesions on the underside of the leaves.

Tubers are infected by spores washed from lesions to the soil. These infections are characterised by patches of brown to purple discoloration on the potato skin. Cutting just below the skin will reveal a

dark, reddish-brown, dry, corky rot.

Following a good Integrated Pest Management (IPM) program can help reduce the adverse effects of Late blight on potato yield and quality. This can involve planting healthy seed tubers, watering crops when necessary, controlling Solanaceous weeds, ensuring good nutrition and eliminating sources of overwintering inoculum. Also be sure to monitor weather conditions so that an effective foliar fungicide spray program can be applied.

Any foliar spray program should always follow sound resistance management principles, rotating between fungicide groups. Where possible, all Late blight fungicides should be used early, before disease develops. For more details, go to http://www.croplifeaustralia.org.au/industrystewardship/resistance-management/

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.



# Understanding phosphorus fertilisers

PHOSPHORUS FERTILISERS ARE AMONG THE MOST EXPENSIVE USED BY GROWERS BUT CAN PLAY A VALUABLE ROLE IN ENSURING THE DEVELOPMENT OF STRONG ROOT SYSTEMS. GIVEN THE RELATIVELY-HIGH COST OF PHOSPHOROUS COMPARED TO OTHER NUTRIENTS, IT IS IMPORTANT GROWERS UNDERSTAND THE VARIOUS FORMS AVAILABLE, AND HOW BEST TO USE THEM.

Phosphorus fertilisers are the most expensive macro nutrient (N, P, K, S) fertiliser component applied in vegetable crops. Phosphorus products are used at high levels to ensure high yield, and also a good standard of harvested product. The main role of Phosphorus in crop production is to ensure a strong root system is developed after planting to allow a conduit for water and nutrient into the plant.

Due to the relative expense of Phosphorus compared to other nutrients, it is critical that growers understand the various forms of Phosphorus available - whether that is manufactured or organic - and have the ability to compare costs between the types available.

All Phosphorus fertiliser products sold in Australia should come with a label indicating the relative analysis as a percentage of the components contained within. Labels can be confusing as it's not as simple as looking at the Phosphorus percentage to know what you are paying for as a crop input. This in turn makes it hard to compare it to other products.

Fertiliser labels contain the following information in relation to Phosphorus (P) content:

P Water Soluble % P Citrate Soluble % P Plant Available % P Citrate Insoluble % P Total %

Understanding each of the P types greatly helps in determining value for money from products.

P Water Soluble % + P Citrate Soluble % = P Plant Available %

The three above P percentage contents indicate how much of the P in the product is actually available for crop uptake. Water Soluble P shows immediately available P in moist soil. Citrate Soluble P shows the P that is available over time in acidic soils and by the action of microbes over time. When these two are added together, Plant Available P is the P percentage that should be used by growers to compare products.

Citrate Insoluble P is the fraction of Phosphorus that is tightly bound and not available for crop uptake.

Manufactured products used as straights and in blends such as SSP, TSP, MAP and DAP have a high percentage of Plant Available Phosphorus. Furthermore,

the majority of this is Water Soluble P, indicating high solubility of the P in soil for uptake.

Rock Phosphate products and manures have a very low water solubility and the majority of the P as citrate soluble forms will release over a number of seasons in acid-based soils and through microbe action. Care must be taken if the soil pH is neutral or alkaline. Products with majority P in the citrate form will be extremely slow to release and are therefore not a wise choice for crops requiring P input.

When soil tests are taken and Phosphorus recommendations are made by trained advisors, the rate is based upon available P in fertilisers. Hence if manure or rock products are to be used, that rate must be increased many-fold to meet the demands of high yielding crops. When costs are considered, these are often uneconomical compared to manufactured products.



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

# New insecticide spells the end for sap-feeding pests



After conducting trials across the country over the past three years, Dow AgroSciences recently announced that the Australian Pesticides and Veterinary Medicines Authority has granted registration for the Transform<sup>TM</sup> insecticide.

Transform™ is a new systemic insecticide which targets sap-feeding insects. It controls aphids, mirids, scale insects, mealybugs, and greenhouse whiteflies, and has some effect on certain thrips species,

silverleaf whitefly, and other bugs. The insecticide provides residual control for growers, while at the same time having minimal impact on beneficial insects, and no impact on predatory mites.

In a trial in broccoli near Rosebud, Victoria, in May this year, Transform™ demonstrated efficacy against a population of green peach aphids exhibiting signs of resistance to Pirimor®, a well-known standard used in vegetables. The trial

demonstrated the need for growers to take notice of which products they use in their insect management programs and when they should use them.

The introduction of Transform™ into growers' insect management rotations will help to take the resistance selection pressure off current insecticides, and therefore prolong them for future use.

Growers are warned to not overuse Transform $^{TM}$ , in order to avoid the development of

the resistance in the insect population. Follow the labelled instructions and use the product as part of an effective Integrated Pest Management (IPM) program.

™ Trademark of the Dow Chemical Company ("Dow") or an affiliated company of Dow. Pirimor® is a registered

Pirimor® is a registered trademark of a Syngenta group company.

# CALENDAR of events









## 8-10 January 2014

Potato Expo 2014

Where: San Antonio, Texas, USA

**What:** The Potato Expo is the largest conference and trade show for the North American potato industry, offering educational programming covering the most important issues facing the potato industry, and numerous networking opportunities with key decision makers.

#### **Further information:**

www.potato-expo.com

#### 19-21 June 2014

AUSVEG National Convention, Trade Show and Awards for Excellence

Where: Cairns Convention Centre, QLD

**What:** The AUSVEG National Convention showcases speaker sessions, entertainment and an impressive trade show. The event will provide delegates with an opportunity to forge relationships with members of the industry, supply chain, researchers and growers.

#### **Further information:**

AUSVEG (03) 9882 0277, convention@ausveg.com.au, or www.ausveg.com.au/convention





Welcome to our first *Potatoes*Australia Magazine YPP
Page! You will find us in each
edition of *Potatoes Australia* in
2014 and beyond as we bring
you updates on the activities of
our small but expanding group of
Young Potato People.

It's been another big year for Young Potato People across the country with many challenges for our industry met, some significant achievements made, and plenty more to do.

We are now running three digital platforms as a means of communicating and sharing within our group and of course a way of connecting industry members of all ages to the enthusiastic and innovative minds of the YPP community.

The YPP webpage will receive an upgrade in the months ahead to make it a more useful landing site for young growers everywhere to find information and connect with suppliers, strategic thinking advisors and methods to enhance their farm performance.

Our YPP Facebook Group now has over 80 members, and for those already on FB, is a great way to let others know what you are doing, the problems you face, what's working and of course to add great pics.

To encourage new members and to create a bit more buzz, we are pleased to announce that we will be running a photo competition for all YPP Facebook Group Members.

There's plenty of fun to be had, and if you're not careful, you just might learn something! Send us your pics of your crop, your farm or your weirdest looking spud and the three best pics in each category will each receive an RM Williams canvas bag valued at \$200 from Farmoz. Join us on Facebook now for full details and get snapping! Entries close Australia Day 2014.



YPP has now entered the Twittersphere! Over one million Australians now use Twitter to comment on the latest developments in news, sport, politics, agriculture and other topics of interest as well as sharing vital information in the event of a crisis or other matters of urgency.

Follow us on @youngpotatopeps to hear what's hot and what's not and to voice your opinion. There's plenty of fun to be had, and if you're not careful, you just might learn something!

Don't forget to put next year's AUSVEG National Convention in your calendar now and register early so you don't miss out.

The Gold Coast Convention in 2013 was a highlight for many with so much to learn and so many key industry people to interact with.

Cairns is the venue this time around (19 to 21 June 2014) and it would be great to see as many Young Potato People on board to make the event even better next year.

We will be holding a New Year get together in January to celebrate the progress of YPP and build on our ideas for 2014 and beyond and would love to see you there!

The date and venue will be confirmed on our Facebook page and via Twitter. Join us now to stay in touch!

www.youngpotatopeople.com.au



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