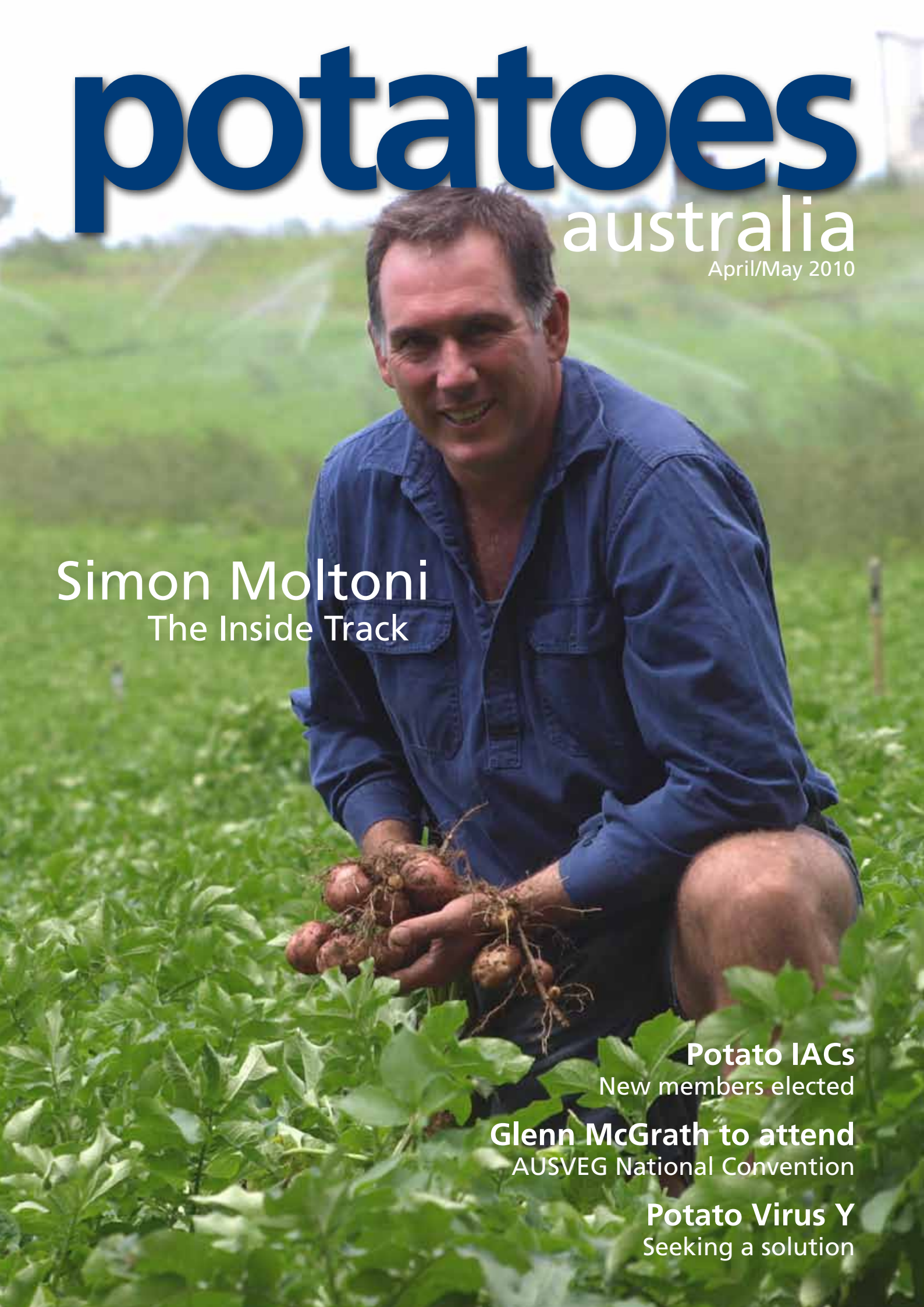
potatoes australia

April/May 2010



Simon Moltoni
The Inside Track

Potato IACs
New members elected

Glenn McGrath to attend
AUSVEG National Convention

Potato Virus Y
Seeking a solution

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AUSVEG

2010 National Convention, Trade Show and Awards for Excellence

Newly announced keynote speaker

Glenn McGrath - Former Australian Cricketer

Newly announced keynote speaker

Sarah Pettitt - Director, Family Farm Vegetable Producer
& Chairman NFU Board for Horticulture & Potatoes

Newly announced keynote speaker

Greg Davis - General Manager Fresh Produce - Coles

27 - 30 May 2010

Conrad Jupiters Hotel Casino on the Gold Coast

For further information, please contact AUSVEG on 03 9544 8098 or email convention@ausveg.com.au

Chairman's message

Former Australian Test cricketing great and Elders Ambassador, Glenn McGrath, headlines a spectacular line up of keynote speakers and prominent members of our rural community who will attend the inaugural AUSVEG National Convention, Trade Show and Awards for Excellence from May 27-30 on the Gold Coast.

Mr McGrath's involvement in the landmark potato industry event this year is particularly important. Mr McGrath will be the special guest at the 'Women in Horticulture' breakfast, a McGrath Foundation event which is being held on the morning of Saturday May 29. The breakfast will recognise the significant contributions made by women to the potato industry and it will raise money for the McGrath Foundation, which undertakes extraordinary work in helping to place breast care nurses in rural and regional communities throughout Australia, to provide vital support and care to women who have been diagnosed with breast cancer.

As well as Mr McGrath, the speaker line-up also includes international guest, Ms Sarah Pettitt, Chair of the Horticulture and Potatoes Board of the National Farmer's Union (NFU) in the United Kingdom. Ms Pettitt is well placed to speak at the 'Women in Horticulture' breakfast thanks to her vast experience in a range of roles throughout horticulture internationally. Not only is she a farmer herself, but she was also Vice Chair of the Horticulture and Potatoes Board at the NFU for four years before taking up her current position as Chair.

Other notable speakers at the Convention are: Greg Davis, General Manager of Fresh Produce at Coles; former Australian footballer, Mr Robert 'Dipper' DiPierdomenico, who will be our MC at various events during the convention; former Governor-General Major-General Michael Jeffery; Mr David Hughes, Group General Manager Commercial from Plant and Food Research New Zealand; and Independent Senator Nick Xenophon.

With hundreds of people expected to attend from across the entire supply chain, the AUSVEG National Convention will be an event not to be missed. If you have not already filled out a registration form, please go to the AUSVEG website at: www.ausveg.com.au/convention or contact AUSVEG on (03) 9544 8098.

I look forward to seeing you there.

John Brent
Chairman
AUSVEG

CEO's message

The start of the year sparked the beginning of new things in more ways than one for the potato industry, with the announcement of the new members of the Fresh and Processed Potato Industry Advisory Committees (IACs).

The Potato IACs are advisory bodies to the Horticulture Australia Limited (HAL) Board and they make recommendations about how the National Potato Levy should be invested in research and development (R&D) to best meet the needs of the potato industry. These committees are important for the industry. They provide representation in relation to R&D priorities for potato growers and processors across Australia.

The new Fresh Potato IAC had its first meeting in March, while the Processed Potato IACs first meeting is to be confirmed later in the year. To see profiles of the new members of the IACs, please go to page 18. I would like to thank all outgoing IAC members for their commitment to advancing the industry.

In the past issue of *Potatoes Australia*, we reported on the threat of Zebra Chip (ZC) disease, which continues to be of great concern to the Australian potato industry as a potential threat. It was reported that last year's summit on ZC set about putting in place an action plan to tackle the problem head on. This included a contingency plan and a strategy to create better education and awareness.

Work is proceeding well and Dr Kevin Clayton-Greene, Operations Manager at Harvest Moon in Tasmania and newly appointed Chair of the Technical Advisory Group (see page 19), travelled to New Zealand in February to liaise with potato industry figures and draw on their knowledge in an effort to combat the disease more effectively back in Australia, if this is required.

Dr Clayton-Greene has confirmed that Australia is becoming better prepared everyday to deal with the threat of ZC and that a contingency plan is currently being developed in an effort to prevent the disease from creeping onto our shores.

Potatoes Australia will ensure that growers are kept up to date and informed as new information comes to light.

Richard Mulcahy
Chief Executive Officer
AUSVEG

potatoes australia

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John Brent

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For further information visit **www.ausveg.com.au**

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

ISSN 1834-2493

FRONT COVER:
Pemberton, WA
potato grower Simon Moltoni
Photo by Mel Arnold

Editorial

It is not often that all levels of the vegetable and potato industry supply chains have a chance to get together in one location.

They will do though, and very soon, at the inaugural AUSVEG National Convention, Trade Show, and Awards for Excellence, to be held at Conrad Jupiters Hotel-Casino on the Gold Coast, Queensland, from 27 to 30 May 2010.

An outstanding speaker program, which now includes former cricketing great, Glenn McGrath, who has been announced as a keynote speaker, is only the tip of the iceberg.

The four-day convention will provide an invaluable opportunity for members throughout the Australian potato and vegetable industry supply chains to come together in a central location to share ideas, learn about recent industry developments and network with a diverse range of growers, researchers and suppliers.

The program includes a two-day Trade Show, where more than 70 companies will showcase industry-specific goods and services to delegates from all sectors of the industry. Social events include a Welcome Reception, Corporate Golf Day, the Australian Outback Spectacular, and to top it off, the industry's National Awards for Excellence Gala Dinner. The 'Women in Horticulture' Breakfast, which is in support of the McGrath Foundation will take place on Saturday May 29 with the dual purpose of highlighting the role that women play in the industry as well as raising funds for the McGrath Foundation.

Please go to page 8 for the latest convention news and a copy of the full program of events. For more information and to register to attend please visit www.ausveg.com.au/convention or call AUSVEG on (03) 9544 8098.

The team at AUSVEG look forward to seeing you at the inaugural AUSVEG National Convention, Trade Show and Awards for Excellence in May.

Do not forget to read about a range of important issues regarding the potato industry in this edition of *Potatoes Australia*, including profiles on the new members of the Fresh and Processed Potato Industry Advisory Committees, the threat of a new strain of Potato Virus Y, as well as grower and researcher profiles, plus much more.

PCN update

The final draft of the National Plan on Potato Cyst Nematode (PCN) is currently being revised by the National PCN Harmonisation Committee, and will be reviewed at the final meeting in May.

If it is accepted, it will be sent out to industry and growers for comment. If this is passed, it will be a landmark for biosecurity in Australia, being the first time all states in Australia will have agreed on such a strategy.

Pg 14 Grower profile: Simon Moltoni from Pemberton, WA

Pg 8 Inaugural AUSVEG National Convention, Trade Show and Awards for Excellence

Pg 18 New members of the Fresh Potato IAC [from left: David Nix and Gary O'Neill, far right: AUSVEG CEO Richard Mulcahy]

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Glenn McGrath to attend AUSVEG National Convention

Anticipation is building as the industry counts down to the inaugural AUSVEG National Convention, Trade Show and Awards for Excellence, to be held at Conrad Jupiters Hotel-Casino on the Gold Coast, May 27-30.

Unprecedented benefits await growers at the AUSVEG National Convention in May, as the list of high-caliber speakers and trade show exhibitors continues to grow rapidly. Former Australian cricketer, Glenn McGrath is the latest high profile announcement as a keynote speaker at the Convention. Mr McGrath will attend the Bayer CropScience Sporting Identities Lunch, as well as the 'Women in Horticulture' Breakfast and other events over the course of the Convention, and he joins Greg Davis, General Manager of Fresh Produce at Coles, who will address growers and members of the horticultural supply-chain on industry issues.

Other recently announced keynote speakers include: Independent Senator for South Australia, Nick Xenophon and Sarah Pettitt, Chair of the Horticulture and Potatoes Board of the National Farmers' Union in the United Kingdom.

More speakers are to be announced shortly and they will join a long list which already includes leading scientists and industry leaders, who are to deliver ground breaking research and development outcomes in a 'user-friendly' format as part of the R&D 'speed reporting' sessions. A family-friendly social program designed specifically for growers provides the icing on the cake of what is expected to be the landmark industry event this year.

Growers and industry representatives are encouraged to take advantage of this invaluable networking opportunity, however, along with the sizeable industry-based speaker program, the Convention also includes an exciting line-up of entertainment and social activities. Highlights include: The Boomaroo Nurseries Corporate Gold Day at the Gold Coast's Palm Meadows golf course; the amazing Australian Outback Spectacular, offered free of charge to full delegates; and the industry's National Awards for Excellence Gala Dinner.

While the Convention will celebrate the Australian vegetable and potato industries, it will also have an international flavour, with delegates confirmed from New Zealand, the United Kingdom, America and Africa.

Sensational speakers

AUSVEG has recently announced that Elders Ambassador Glenn McGrath will be a special guest at the 'Women in Horticulture' breakfast which is in support of the McGrath Foundation. The 'Women in Horticulture' breakfast, to be held on Saturday May 29, recognises contributions from women in the horticulture industry

and will also raise funds for the McGrath Foundation, which helps to place nurses in rural and regional communities to care for women with breast cancer. Mr McGrath will also be a speaker at the Bayer CropScience Sporting Identities Lunch at 1pm on May 29. (pg 8, middle left)

In a coup for the Australian industry, international guest Sarah Pettitt, Chair of the Horticulture and Potatoes Board of the National Farmers' Union in the United Kingdom, joins Mr McGrath as a keynote speaker at the 'Women in Horticulture' breakfast.

A Lincolnshire-based grower of field vegetables and a partner in her family's farming business growing sprouts and purple-spouting broccoli, Ms Pettitt was Vice Horticulture Chair of the organisation for four years before stepping up to the role of Chair in March 2009. (pg 8, bottom left)

Another exciting addition to the line-up of high profile speakers is Greg Davis, the new General Manager of Fresh Produce at Coles. Mr Davis' attendance at the Convention presents an excellent opportunity for growers to hear from an industry expert from the retail side of the supply-chain. (pictured middle right)

From the political world Independent Senator Nick Xenophon will be a keynote speaker on Friday May 28. Senator Xenophon whose profile has risen significantly since becoming a senator for South Australia in 2007 has recently been campaigning on issues relevant to the horticulture industry, including truth in labeling laws.

Agricultural scientist and lawyer Kathryn Adams tops off a stellar line up. Ms Adams has held senior executive positions in government agencies and business enterprises, and brings to the Convention specialised knowledge gained through running workshops and conferences on the use of intellectual property in horticulture.

R&D focus

The line-up of expert speakers for the R&D 'Speed Reporting' sessions has now been finalised. Speakers will cover a wide range of topics including: insects and diseases, soil health and water, innovations in new technologies and crop production, and climate change.

Dr Sandra McDougall, Industry Leader (Field Vegetables) Science and Innovation from Industry and Investment NSW, will discuss insects and diseases.

Soil health and water will be covered by Dr Ian Porter, a biosciences research specialist with the Department of Primary Industries in Victoria, while new Vegetable IAC Chair, Mr Peter Deuter, from the Department of Employment, Economic Development and Innovation (DEEDI) in Queensland will talk about climate change.

Dr Susan Lambert, a Postdoctoral Research Fellow in sustainable vegetable production at the Tasmanian Institute of Agricultural Research (TIAR) is to speak about innovations in new technologies and crop production.

The R&D 'Speed Reporting' sessions will be chaired by Mr Peter Dal Santo of AgAware Consulting Pty Ltd, who also chairs the industry's Chemical Working Group.

Spectacular social program

As part of its exciting social program, AUSVEG has recently announced that the Convention's special theme night will be the Australian Outback Spectacular 2: Heroes of the Light Horse.

This tribute to the Australian Light Horse Brigade has made headlines around the country for its deeply moving story of our nation's most courageous diggers; now growers have the chance to see it first hand.

A first class steak dinner will be followed by a truly amazing show capturing the sacrifice and courage of the regiment, presented in a giant arena with seating for 1000 guests.

The social program will also include many other exciting opportunities to mix and network with growers and industry representatives from across the country. The Young Growers' Bowling Night, sponsored by Dow AgroSciences, presents a great opportunity for the younger members of the growing community to get together and will be held on Thursday May 27. The social part of the convention will conclude with the Boomaroo Nurseries Corporate Golf Day on the Sunday, held at Palm Meadows, one of the Gold Coast's most renowned golf courses.

New partnerships for the convention have also been announced. Boomaroo Nurseries, Dow AgroSciences, VinRowe Farm Machinery, Brisbane Produce Market, the Department of Immigration and Citizenship, the Department of Employment, Economic Development and Innovation, and Toolpak Engineering were recently added to the significant list of well respected industry organisations who're supporting the AUSVEG National Convention.

All companies will feature prominently throughout the Convention, including in the Trade Show and at other key convention events.

To assist delegates wishing to attend the convention, AUSVEG has negotiated heavily-discounted accommodation rates at Conrad Jupiters Hotel-Casino. Further details can be found on the AUSVEG Convention website at: www.ausveg.com.au/convention

Growers who are interested in receiving a convention registration brochure, companies wishing to display at the Trade Show or businesses wishing to become strategic partners with AUSVEG should call (03) 9544 8098 or email convention@ausveg.com.au

Inaugural National Awards for Excellence

A highlight of the AUSVEG National Convention will be the National Awards for Excellence to be held on Saturday May 29. The awards will celebrate the hard work of our industry's most successful growers, researchers and businesses across the supply chain, in a gala evening at Conrad Jupiters on the Gold Coast.

Nominations are being sought in the following categories:

Grower of the Year
Proudly sponsored by syngenta

(Open to all vegetable and potato growers)

1) Vegetable/potato grower is outstanding across all aspects of vegetable production, including growing, environmental management, staff management and product quality.
2) Grower is innovative, challenges convention and implements efficient practices (such as integrated pest management, minimising wastage, water conservation, precision agriculture, technology advances, and value-adding to product).
3) Grower actively contributes to broader industry (such as participating in international R&D tours, industry committees, forums, conferences or field days).

Young Grower of the Year
Proudly sponsored by Dow AgroSciences

(35 years of age or less as at 29 May 2010)

1) Vegetable/potato grower shows excellent business acumen and innovation and has applied it on-farm and in the wider farming community when practicable.
2) Grower demonstrates a high level of commitment to the industry, possibly illustrated through involvement in off-farm activities, participation as a member of industry groups/ committees or in community activities (such as Landcare).

Industry Impact Award
Proudly sponsored by Boomaroo

1) Individual/business has had a positive impact on the vegetable/ potato industry through means such as innovation, research, or irrigation/water management techniques.
2) The impact has resulted in a significant contribution to best farm practice.

Industry Recognition Award
Proudly sponsored by DuPont — The miracles of science™

1) Individual has provided overall service to the industry on a local, state or national level over a long period of time.
2) Individual is pro-active in advancing the industry.
3) Individual uses their leadership skills for the greater good of the industry.

Productivity Partner Award
Proudly sponsored by Elders

1) Business has developed a new solution directly benefiting growers through improving their productivity, for example through reducing costs or environmental impact.
2) Business has significantly contributed in a positive manner to the Australian vegetable/potato industry.
3) Business has shown commitment to improving the industry's productivity.
4) New practice has delivered tangible, measurable results.

Innovative Marketing Award
Proudly sponsored by Brisbane Produce Market

(Implementation within the last three years)

1) Individual/business has created an innovative marketing solution, process or program.
2) Individual/business has created new market opportunities for vegetables/potato products.
3) Innovation has had significant impact on the industry and has potential for long term positive effects through sales, awareness, reach, etc.
4) Innovation has delivered tangible, measurable results.

Women in Horticulture Award

1) Female industry member has demonstrated outstanding ability and success in their chosen field, whether it is growing, research and development, farm management, or otherwise.
2) Individual is pro-active and has shown commitment to achieving success in the industry .
3) Has a reputation for mentoring women in horticulture.

Researcher of the Year
Proudly sponsored by Bayer CropScience

1) Researcher has track record of research or extension work that has advanced the industry offering long-term industry benefits.
2) Researcher actively communicates research outcomes and encourages uptake of outcomes on-farm.
3) Researcher contributes research or extension work that advances the reputation of Australian science internationally.

2009 Australian Vegetable Industry Award winners [from left] Dr Paul Horne, Steve Skopilianos, Kim Vincent, Nathan Clackson and Peter Dal Santo.

Nominations Now Open

Nominations for the AUSVEG National Awards for Excellence are now open. To nominate yourself or someone you know in any of the categories listed, please fill in the form and return to the address listed below.

• Nominations will close on 24 April 2010

Nominee details:

Name: _____

Business/Organisation/Farm name: _____

Nominated award: _____

Nominee's contribution to industry (additional information may be attached): _____

_____

_____

_____

_____

_____

_____

_____

Nominator details: (your details)

Name: _____

Business/Organisation/Farm name: _____

Address: _____

Telephone (work) _____ (mobile) _____

Fax: _____ E-mail _____

Please return nomination form to:

AUSVEG Ltd, PO Box 563, Mulgrave VIC, Australia 3170 Tel: +61 3 9544 8098 Fax: + 61 3 9558 6199

NOTICE OF MEETING

Meeting:	Annual Levy Payers' Meeting
Date and Time:	Friday 28 May 2010, 2:00-2:30pm – Potato Levy Payers' Meeting
Location:	Surfers Paradise Room, The Pavillion, Conrad Jupiters, Broadbeach Island, Gold Coast, Queensland
RSVP to Ms Erin Lyall:	(03) 9544 8098, erin.lyall@ausveg.com.au http://ausveg.com.au/events-conferences.cfm

Convention Program

* All Speaker Sessions will be held in the Surfers Paradise room of the Trade Show hall

Day 1:	Thursday 27 May
9.00am	Registration desk opens
6.30pm	Poolside Welcome Reception - Official Welcome by the Chairman of AUSVEG, John Brent

Day 2:	Friday 28 May
7.30am	Convention special breakfast - proudly sponsored by QLD Department of Employment, Economic Development and Innovation Venue: Pavillion Marquee
9.30am	Trade Exhibition Opens
10.00am	Official opening
10.20am	Keynote address. Major General Michael Jeffery former Governor-General of Australia
10.40am	Mike Guerin - Chief Operating Officer, Elders Rural Services
11.00am	Morning Tea
11.30am	Speaker Presentations, guest speakers include:
11.30am	- Joerg Ellmanns - Managing Director, Bayer CropScience Pty Ltd
11.50am	- Senator Nick Xenophon - Independent Senator for South Australia
12.10pm	- Martin Kneebone - Director, Freshlogic
12.30pm	- David Hughes - Group General Manager Commercial. Plant & Food Research New Zealand
1.00pm	Lunch in the Trade Show
2.00pm	Potato Levy Payers Meeting - Fresh and Processed Potatoes IAC Chair to Chair
2.30pm	Vegetable Levy Payers Meeting - Vegetable IAC Chair to Chair
5.00pm	Trade Exhibition closes
6.00pm	Coaches Depart for Special Theme Night - Australian Outback Spectacular 2
9.30pm	Coaches Depart for Jupiters (return approx. 10pm)

Day 3:	Saturday 29 May
7.30am	'Women in Horticulture' Breakfast - in support of the McGrath Foundation Venue: Pavillion Marquee
	Speaker - Sarah Pettitt - National Farmers Union UK Horticulture Chairman
	Speaker - Glenn McGrath - Former Australian Cricketer
9.00am	Trade Exhibition Opens
9.00am	R&D Overview
9.15am	R&D 'Speed Reporting' (4x15minute R&D Sessions), guest speakers include:
9.15am	- Peter Deuter (Climate Change) - Senior Principal Horticulturist, DEEDI Queensland
9.30am	- Dr Sandra McDougall (Insects & Diseases), Industry Leader - Field Vegetables
9.45am	- Dr Ian Porter (Soil Health & Water) - Principal Research Scientist with the Victorian (DPI)
10.00am	- Dr Susan Lambert (Innovations, New technologies and crop production) - Tas Institute of Agricultural Research
10.15am	Q&A & discussion
10.30am	Paul Luxton, Syngenta General Manager
10.50am	Morning Tea
11.20 am	- Kathryn Adams - Research Fellow with the Australian Centre for Intellectual Property in Agriculture
12.20am	- Greg Davis - General Manager Fresh Produce - Coles
1.00pm	Bayer CropSciences 'Sporting Identities' Lunch in the Trade Show, guest speakers include:
	- Robert DiPierdomenico - Former A.F.L Footballer
	- Glenn McGrath - Former Australian Cricketer
4.00pm	Trade Exhibition closes
7.00pm	AUSVEG 'National Awards for Excellence' Gala Dinner

Day 4:	Sunday 30 May
11.30am	Coaches Depart for Corporate Golf Day
12.00pm – 5.30pm	Corporate Golf Day - proudly sponsored by Boomaroo Nurseries

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Australian Government
Department of Immigration and Citizenship

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BRISBANE PRODUCE MARKET

Terranova SEEDS

Queensland Government

DOBMAC AGRICULTURAL MACHINERY

TOOLPAK Engineering

Vin Rowe Farm Machinery

Seeking better control of Potato Virus S

Dr Susan Lambert

Words | **Mignonne Rawson**

As potato viruses go, PVS has been resilient. Despite previous research, growers have had difficulty eradicating it from their farms, which is why a recently completed research project has aimed to get to the heart of the problem.

Potato Virus S (PVS) has been the subject of research trials in Tasmania in the past due to the regular incidence of it appearing in potato crops. Due to its persistence though, a recently completed research project delved deeper, in order to create effective management control strategies which up till now had been inadequate.

Research projects were conducted a few years ago on PVS (and PVX) after detection in the Tasmanian seed potato scheme. These projects focused on monitoring virus incidence, auditing seed handling practices and providing recommendations to growers and industry. Management strategies were developed and PVX was practically eliminated from the Tasmanian scheme. However, PVS has proven more difficult to manage, prompting this new project.

The project involved monitoring the incidence of PVS in five generation one (G1) crops (2007-08 season) and the subsequent G2 crops in the following season (2008-09), in an attempt to relate the incidence of PVS to agronomic practices. In addition, greenhouse experiments were conducted to determine if PVS was transmissible by the aphid, *Myzus persicae*. Seed cutting experiments were also conducted to determine if the antiviral chemical Virkon®S could be applied to seed pieces immediately following cutting, in order to reduce virus transmission without phytotoxicity or compromising yield and quality.

Program Leader, Dr Susan Lambert, from the Tasmanian Institute of Agricultural Research (TIAR) at the University of Tasmania said that the project was now complete and the results would be very helpful to aid in the management and even possible eradication of this virus.

Dr Lambert said isolation was the key to the project.

"Geographical isolation of early seed potato crops from later generation and ware crops seems to be the key in reducing PVS in seed stocks in Tasmania. Growers that have adopted new strategies, such as isolated nursery farms have helped to reduce the prevalence and incidence of PVS in Tasmanian seed potato, with a 27 per cent reduction reported in G2 crops infected with PVS between the 2006 and 2009 seasons," she said.

According to Dr Lambert, transmission of the disease by aphids was not an important factor in the spread of the virus.

"Results from this study and earlier studies suggest that aphid transmission of PVS is likely to be limited. Although PVS isolates were sourced from different growing regions around the state and representative of strains present in Tasmanian, other aphid species were not included in this study, such as unknown aphid vectors or the known aphid vector of *Rhopalosiphum padi* which is present in Tasmania," she said.

Since PVS can be transmitted during seed cutting, further experiments were conducted to determine if treating seed pieces with an antiviral chemical after cutting could reduce virus transmission without phytotoxicity.

Dr Lambert said that due to poor transmission of PVS in the trial, an assessment of the ability of the antiviral chemical to reduce virus transmission could not be determined. However, yield and quality of tubers were unaffected by treatment.

"Given that centralised seed cutting facilities are common place in the Tasmanian seed potato industry anything that can minimise possible mechanical virus transmission on cutting blades would be of great potential benefit to the seed potato industry," she said.

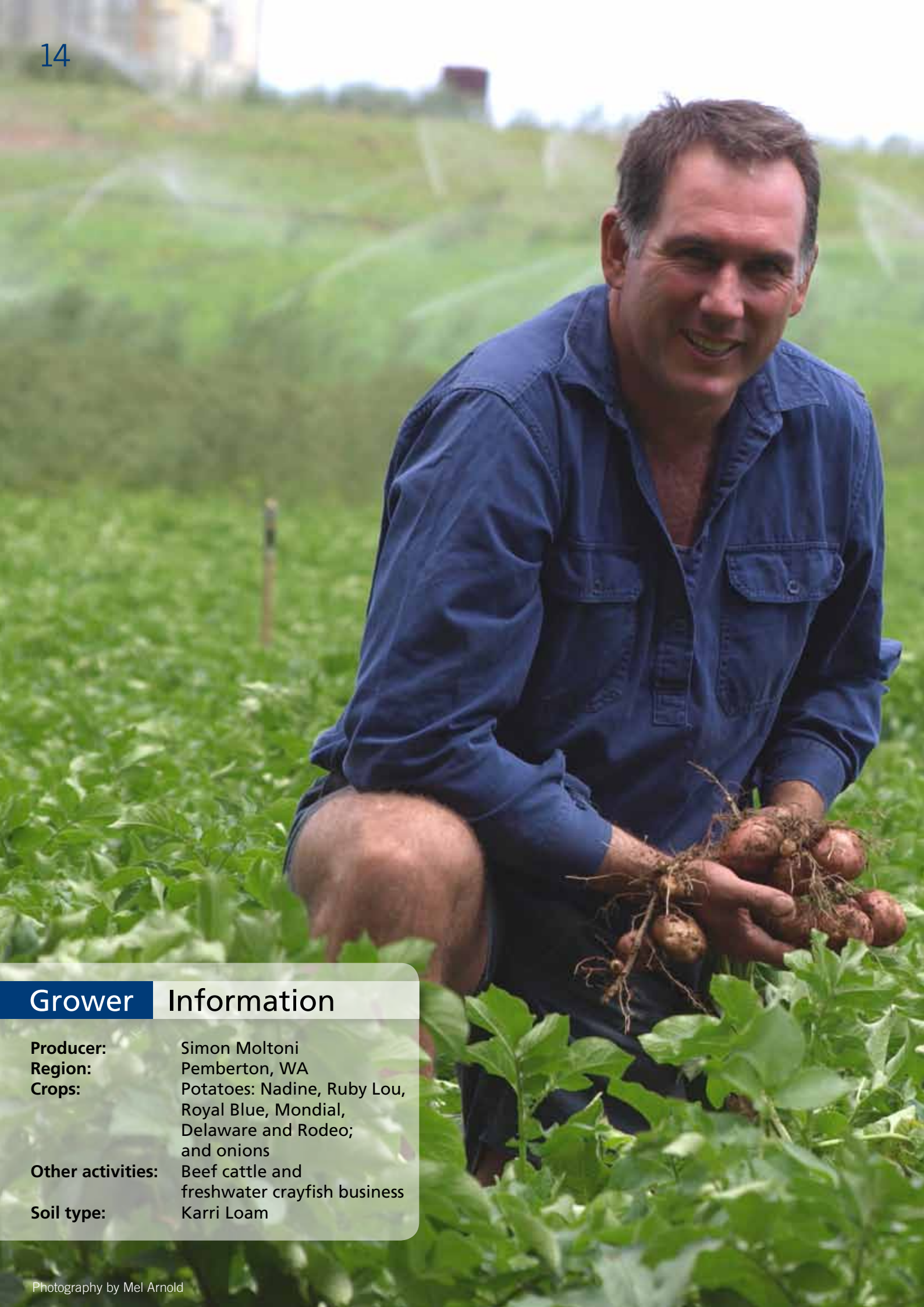
Dr Lambert said that while it has been shown that using sterilant on cutting blades is recommended to reduce possible virus transmission between seed lots and within seed lines, it is not always practical.

"It is time consuming, costly and not always practical to shut down machines for wash down between seed lines. An antiviral chemical such as Virkon®S applied to the cut surface of seed pieces may provide a more efficient alternative to recommended wash down procedures and requires further investigation," she said.

Dr Lambert said that overall, the progress into reducing the incidence of PVS in the Tasmanian seed potato industry was pleasing.

This project was facilitated by Horticulture Australia Limited with matched funding from the Australian Federal Government. pa

For more information call Dr Susan Lambert on (03) 6430 5981 or email her at susan.lambert@utas.edu.au



Grower Information

Producer:	Simon Moltoni
Region:	Pemberton, WA
Crops:	Potatoes: Nadine, Ruby Lou, Royal Blue, Mondial, Delaware and Rodeo; and onions
Other activities:	Beef cattle and freshwater crayfish business
Soil type:	Karri Loam

Photography by Mel Arnold

The Inside Track

with Simon Moltoni

Pemberton potato grower Simon Moltoni speaks to *Potatoes Australia* on a range of issues, from Western Australia's unique regulatory system to biosecurity and his new appointment as a member of the Fresh Potato Industry Advisory Committee, writes Mignonne Rawson.

There isn't much that Simon Moltoni doesn't know about the potato industry. Having lived and breathed it since he was a child growing up on his parent's farm in Pemberton, this is hardly surprising though.

As a third generation farmer Mr Moltoni has had more than 20 years of experience in fresh, processed and more recently seed potato production.

His main farm sits on 120 hectares of land, of which 16 hectares are dedicated to potato crops, producing about 700 tonnes per year. He produces a number of fresh potato varieties including: Nadine, Ruby Lou, Royal Blue and Mondial.

Mr Moltoni has also ventured into growing seed potatoes, including the above varieties, as well as Delaware and Rodeo.

Due to the closure of the local Simplot factory, Mr Moltoni no longer grows potatoes for the processed industry, instead turning his attention to producing onions on a rotational basis with his potatoes and running beef cattle. But a shift in focus is nothing new for this grower, who has a fondness for a challenge. In between running his potato businesses Mr Moltoni is the founding Chairman of a freshwater crayfish company called WA Fresh Marron; a co-operative style grower-owned private company of which he was also the Marketing Manager between 1995 and 2000.

Western Australian difference

With a Karri Loam soil and milder temperatures, Pemberton is the perfect environment for potato growing. "We have a mild summer here because we are further south in Western Australia, so we are supplying the fresh market from later December to July," he said.

"The rest of Western Australia's production areas are in warmer regions with sandy soils, which are difficult conditions for summer production."

By his own admission, potato growing across the Nullarbor may not be a huge industry, but because of the state's regulatory system, it is still certainly a great place to be a potato farmer.

"Looking from the perspective of WA, the fresh market is very unusual both from a national and an international view point due to regulated marketing," he said.

"Regulation gives consumers in WA year round supply without the risk of environmental damage that comes with over-production. Water wastage and extra chemical and fertiliser entering the environment due to over-production is no longer tolerated by government agencies or society in general. Farmers can't afford the financial losses either," he said.

"Growers also enjoy the benefit of guaranteed payment which is not always the case in other states or even here in WA for other horticultural crops."

Mr Moltoni is heavily involved in his state's unique system–and not just as a farmer–by getting involved in the Potato Growers Association (PGA) of WA, which is made up of representatives from seven regional zones. The chairmen from each zone form the Committee of Management (COM) of the PGA. Mr Moltoni has been the Pemberton zone Chairman for the last five years and is

continued over page ▶

currently serving his second year as COM Vice President.

Isolation the key

According to Mr Moltoni, WA's geographical isolation has been a key factor in the state's success.

He said it has ensured that WA has been spared some of the disease outbreaks that the east coast has witnessed over recent years, creating advantages in the market.

"We have had outbreaks, of say PCN, but that was over 20 years ago. Due to strict quarantine protocols and a vigorous inspection and testing regime WA has recently successfully eradicated PCN. This is currently being presented to Plant Health Australia for ratification," he explained.

Despite the fact that WA has this 'isolation' advantage, it is also clear that Mr Moltoni regards the nation's strict guidelines on biosecurity as being a great help in ensuring the prevention of many diseases creeping their way onto our shores.

"The Certified Seed Scheme in Australia is really a fantastic program to guarantee security for all sectors of the industry," said Mr Moltoni.

"Although it can sometimes feel like you are drowning in inspections and paperwork it does help to, or at least comes very close to, guaranteeing to manage the health of the Australian industry," he said.

Mr Moltoni said that biosecurity, like anywhere in the world, and in the rest of Australia, was also a concern in WA, but that on the whole the state was in a good position.

"We have always managed to either eradicate any diseases or keep them under control," he said.

"It's just really important that we never let our guard down."

New member

With a history of industry involvement and a willingness to confront challenges that face all growers, it is not surprising to learn of Mr Moltoni's recent appointment as a new member to the Fresh Potato Industry Advisory Committee (IAC).

The Fresh Potato IAC is a Horticulture Australia Limited (HAL) committee and will make recommendations on how the the National Potato Levy should be spent on research and development.

"I see it as a personal challenge and I think it's certainly an important position. I'm looking forward to the challenges of being a member and I also see it as an opportunity for personal growth," he said.

Mr Moltoni stressed his belief in such groups as the IAC, mainly because they were important vehicles in helping farmers better understand all the levels of the industry, and because they provide much needed representation for growers.

"It's difficult from the farm gate to make sense of a lot of the industry like governance and national bodies such as AUSVEG. Much of this is a mystery for those working at the farm level," he said.

"Although these organisations can at times appear slow and cumbersome to farmers, the representation is very important."

What next?

According to Mr Moltoni, the fresh potato industry in WA is reaching capacity in terms of size, yet despite this he believes that there is always room for improvement. Although it may not be via more acreage, he said it was to new varieties that the industry was now looking.

"The fresh market in WA produces about 1000 tonnes a week. With regulation or not, there is not a huge scope for growth. That's why we in WA focus a lot on exports and seed," he said.

"Being a mature industry, there will always be incremental changes taking place but it's in the new varieties that there will be the most development."

Mr Moltoni said consumers, producers and retailers are all anxious to get more varieties.

"The demand for new varieties is growing both nationally and internationally," he said.

Mr Moltoni believes this is where the efforts of the states' representative organisations such as the PGA, Western Potatoes and the Potato Marketing Corporation (PMC) can help through marketing and promotion.

"They are actively helping to develop more varieties in a development program for the fresh market," he explained.

Custodians of the land

Despite working the land for many years, Mr Moltoni has not allowed complacency to creep into his operation or his attitudes towards his land.

Married to his wife Susan for 16 years, perhaps it is in his three sons, Liam 15, Devin 13 and Cameron 8, which has made him aware of his place in the system and his responsibility to look after the land for future generations.

Mr Moltoni believes that Australian farmers are becoming more environmentally aware, something which previous generations were perhaps not as well educated about as they are today.

"Sustainability was practiced by my father's generation to a degree but now there is a greater awareness and understanding of environmental issues. This has lead to changes in farming practices with a view to continuously improving sustainability for both our environment and our business," he said.

"There are many opportunities for progress and for better management such as courses in chemical use and Landcare etc."

Mr Moltoni said Australian farmers have been forced to confront and accept the need to incorporate sustainability into their mindset along with their farming practices, which has been a good thing.

"Australian farmers are certainly right up there in regard to land management, I think, because the land in Australia is so fragile and we acknowledge that." pa

New members for fresh and

New Fresh Potato IAC members

Mr John Rich (New Fresh and Processed IAC Chair)

John Rich, who was a member on the last committee has now taken on a new role as the Chair of the Fresh and Processed Potato Industry Advisory Committees (IAC). Mr Rich has had a long career in a variety of fields in agriculture. He worked for many years with the Australian Dairy Corporation and has also had a 23-year career with the Tasmanian Farmers and Graziers Association (TFGA). In this role he was involved in researching, analysing and developing policy options and action plans, advocacy and consulting with industry leaders and government. Mr Rich became a member of the World Potato Congress (WPC) Advisory Committee in 2000. In this role he took on a project that aimed to bring people together and enable knowledge sharing across the global potato industry. In 2002, Mr Rich was also Chair of the WPC Awards Committee for the Congress held in the United States.

Mr Max Baker (Tasmania)

Max Baker has been growing vegetables and potatoes for over 48 years in Kindred, Tasmania, where he grew up. He has been a supplier to Woolworths of potatoes, as well as other vegetables such as cauliflower and cabbage, for 34 years. Mr Baker has also been a member of the Tasmanian Farmers and Graziers Association (TFGA) for nearly a decade and in 2005 was named Woolworths National Supplier of the Year.

Mr Gary O'Neill (South Australia)

Gary O'Neill grew up on a potato farm in Ireland before he and his parents moved to Robertson in NSW. The family continued their farming tradition setting up a potato farm there and, except for an 18 month stint on a chicken farm, Mr O'Neill has been involved in potato farming his entire life. He holds a Diploma of Agriculture and is an accredited agronomist with qualifications in soil, plant and water testing. He has worked in the crisping industry for 11 years and worked for 10 years with Elders, managing the company's potato interests. Mr O'Neill is now Seed Operation and Commercialisation Manager for the Mitolo Group in Virginia, South Australia.

Mr David Montgomery (New South Wales)

David Montgomery, from Crookwell, NSW, has had a long history of supporting the potato industry in various capacities, including as a grower for 40 years and Executive Director of the Crookwell Potato Association Inc for 25 years. He served as a foundation Director of the Horticultural Research and Development Corporation and has been involved with seed export development and marketing programs. Mr Montgomery was a founding Director of Technico Pty Ltd, an Australian company that pioneered the development of an early generation seed technology, which is now used worldwide. In 2006, Mr Montgomery received a prestigious award from the World Potato Congress in Boise, USA, recognising his many years of involvement within the potato industry.

Mr David Nix (Queensland)

David Nix, recently profiled in *Potatoes Australia*, is a third generation potato grower in the Atherton Tablelands, Queensland. Mr Nix's grandfather began farming in the area early last century which was then continued by his son (Mr Nix's uncle) in the 1950s. Mr Nix began growing potatoes in the early 1970s when he purchased a portion of his uncle's land (approximately 300 hectares). For almost twenty years Mr Nix served as Director of the Atherton Tablelands Potato Growing Association (ATPGA), which at its peak represented over sixty members. He also acts as the potato representative for Growcom. Mr Nix is now in the business of growing gourmet potatoes. Having had success with the Lady Jane variety, he will soon launch a newly developed type, labelled Eureka Gold.

processed potato IACs

Mr Simon Moltoni (Western Australia)

Simon Moltoni, who is profiled in this issue of *Potatoes Australia*, is a third generation potato grower from Pemberton in Western Australia. He is active in his community through a range of organisations and has more than 20 years experience in seed, processing and fresh market potato production. He produces a number of varieties including, Nadine, Ruby Lou, Royal Blue and Mondial for the fresh potato industry. He has also ventured into growing seed potatoes including the varieties of Delaware and Rodeo. Mr Moltoni has worked closely with DAFWA and the CSIRO making his property available for research trials.

New Processed Potato IAC members

Mr Rod Fraser (Victoria)

Rod Fraser is a fifth generation farmer, who has been working on his family farm in Ballarat for the last 24 years. In that time, the farm has expanded from a small operation to a 700 hectare business spread across three different districts. The farm is setup as a family business and the company has six full time staff. Mr Fraser manages the farm, particularly the potato crops, which produce about 5000 tonnes annually. Other farming activities include grain and sheep and Mr Fraser also has a qualification in welding. The company has significant contracts with McCain Foods, while the remainder are spread across different markets. Mr Fraser was previously President of the Young Farmers Group in his local area.

Mr Daryl Lohrey (Tasmania)

Daryl Lohrey has been in potato growing since 1975 and he currently owns and manages Lohrey Pastoral Co. at Sisters Creek in North West Tasmania. The farm operates four enterprises including processing potatoes for McCain Foods (5500 tonnes) and seed potato production (1500 tonnes). Mr Lohrey has also had experience with serving on committees and he is currently the Chairman of the McCain Potato Growers Committee and a member of the Tasmanian Potato Council. He participated in the development of the Australian Processing Potato Industry Strategic Plan in 2006. Mr Lohrey was a member of the Tasmanian Farmers and Graziers Association (TFGA) Vegetable Council and now sits on its Council Forum. Mr Lohrey is currently on the consultancy panel for the Inglis Water Management Plan.

New Chair of Technical Advisory Group

Dr Kevin Clayton-Greene

Dr Kevin Clayton-Greene has been appointed as the new Chair of the Technical Advisory Group (TAG). The group will be made up of three research scientists who will be available to advise the Fresh and Processed Potato Industry Advisory Committees (IAC) on R&D issues. Dr Clayton-Greene is well placed to take on this new role, after having been a member of the Fresh Potato IAC himself. Dr Clayton-Greene now lives in Tasmania where he is the Operations Manager at Harvest Moon, a fresh vegetable production company. He is responsible for the carrot, potato and seed potato section of the business as well as new varieties of potatoes and R&D. He has been with the company for 17 years but has worked in the horticulture industry for over 30. Dr Clayton-Greene started out teaching botany at Melbourne University, and then moved on to work as a scientist at the Victorian Department of Agriculture. Other roles have included being on the Agricultural Research and Advisory Committee in Tasmania for many years and he is also Australia's observer with the New Zealand Tomato Potato Pysllid project. In this role he provides updates to the Australian industry on Zebra Chip disease in New Zealand, in order to help Australia prevent any incursion or be able to best deal with one if it does occur.

It's all about

Words | **Dzintra Horder**

A new Horticulture Australia Limited (HAL) project is set to give fresh insights into the health benefits of potatoes. With consumers more and more concerned about their health, these findings could help improve marketing strategies for the potato industry.

Consumers are more interested than ever in their health and wellbeing, which is going to play a greater role in consumers' decisions about their purchase and consumption of foods.

Vegetables, fruit and nuts have distinct health benefits which can be leveraged in marketing activities. Through the across industry funded HAL project, *Health and wellbeing in horticulture*, the potato industry will have access to a wealth of information about the health benefits of potatoes to use in marketing and communications activities.

The CSIRO has been engaged through the project to undertake a world-wide literature review focused on health and wellbeing. This will encompass journal articles on all horticultural products.

The project will also provide a watchdog service to the industry with regard to policy and legislation announcements, and will be jointly led by accredited practicing Dietitian, Karen Kingham, and Communications Consultant Chris Rowley.

"The project will gather together articles published on vegetables, fruit and ornamental horticulture to demonstrate just how good for your health and wellbeing horticultural products are," said Mr Rowley.

"It will also stay abreast of policy and regulatory issues and inform the relevant industry as things come up. The idea here is to provide industry with the information it needs to make decisions and act in the area of policy and regulation."

Research

Information gathered by the CSIRO will be assessed by the wellbeing team and circulated to HAL member industries via a newsletter, and for more urgent items specific to the potato industry, via an email alert.

Materials will also be made available via a monthly bulletin that will seek to tie together the whole industry approach and build a wider understanding of research that may extend across a number of industries.

A searchable database will be established to further extend the use of the information and provide the longer term capability for industry to request specific search information relevant to marketing or other activities.

A separate part of the research approach will be the establishment of a process that collects information on trends relevant to HAL members. This could include food and eating trends or lifestyle trends that impact on non-edible horticultural products.

"What we now have is a starting point of close to 400 items in the searchable database, stretching back over the past few months of 2009, and even a few older items of interest," said Mr Rowley.

"Given the timeframe for this initial batch of references there will most likely be articles that the potato industry may already be aware of, however, as we roll out this process we expect an increasing number of new items of interest to appear on a month to month basis."

Generic vegetable and fruit research features most prominently as the scientific community attempts to tease out relationships between diets rich in vegetables and fruit and diseases such as cancer, diabetes, heart disease and weight control.

In the realm of non-edible horticulture, research shows differences in sick leave and productivity among office workers who were in close proximity to indoor plants and less need for pain medication, lower blood pressure and a more positive outlook among hospital

feeling good

patients who had flowering or foliage plants in their rooms.

All of the research gathered by the CSIRO will be maintained in a central searchable database which can be accessed by contacting the project team.

Policy and regulatory affairs

The other key area of activity within the wellbeing project is policy and regulatory affairs. The project will develop a list of all current and ongoing reviews of interest to horticultural industries to ensure regular monitoring of regulatory bodies. As policy or regulatory issues arise, the relevant industry or industries will be contacted by the wellbeing team and provided with the information needed to make decisions and act.

As an example of the way this service will work, in late January the wellbeing team became aware of a proposal from Food Standards Australia New Zealand (FSANZ) to consider varying the Australia New Zealand Food Standards Code to include traceability and processing requirements for semi-dried tomatoes, tomatoes and other food likely to be used in semi-dried tomatoes. To facilitate its consideration of the proposal the tomato industry was alerted to the fact that FSANZ was seeking public comment.

This across industry project was funded by HAL using levies and voluntary contributions from industry with matched funds from the Australian Federal Government. pa

The Bottom Line: AH09023

- Project will give the potato industry access to information about the health benefits of potatoes to use in marketing and communication activities.
- All research gathered by the CSIRO will be put on a database which can be accessed by contacting the project team.
- The project will ensure regular monitoring of regulatory bodies.

Correction

Horticulture Australia Limited (HAL) would like to issue a correction for the past edition of Potatoes Australia.

- Pg 23, point 2 should have read $775,000, not $6.5 million
- Pg 23, point 3 should have read $6.5 million, not $775,000

Ear to the ground

Words | **Mignonne Rawson**

In a field which has always seemed such a secretive profession, Canadian Research Scientist, Dr George Lazarovits, suggests that science should be something which is shared in order to create the best outcomes for everyone. This philosophy has led to an ongoing partnership with researchers in Australia working on the Australian Potato Research Program (APRP).

Dr George Lazarovits, Research Scientist from Agriculture and Agri-Food Canada, is listening. That is his policy.

With more than 25 years of studying soil pathogens under his belt, one could be fooled into thinking he might not be open to suggestion; but he certainly is.

He is well aware that the greatest discoveries and advancements in research do not just come through interactions between scientists but rather by listening directly to growers themselves. This is why he is such an advocate of international conferences because it brings farmers and scientists together.

"They are fabulous. I learn more at these kinds of things than I do anywhere else," he said.

Dr Lazarovits gave the example of a recent international conference where two breeders approached him about collaborating on a project.

"Two breeders came up to me and said we have some plants that grow without fertiliser and they were wondering why. So now we have a project, after they submitted a proposal asking that they work with me, to find out why these plants are growing with no fertiliser added. All of a sudden we may be able to develop cultivars of potatoes that may need only half as many input costs," he said.

"That's how it works. There's this interaction. They hear something that they haven't heard before and they say good God I may have some of that and do you want to do something together?"

With his knowledge and passion for research, it is not surprising that Australian scientists sought his help in phase one of the Australian Potato Research Program (APRP1), which finished late last year.

It was the finalisation of this project that brought Dr Lazarovits back to Australia in February for key meetings at the Victorian Department of Primary Industries (DPI) in Melbourne, to discuss findings and also make preparations for APRP2.

He and other international experts including fellow Canadian, Greg Patterson, President of A&L Canada Laboratories Inc., were also involved in the first phase and will be included in the second.

Why collaborate?

Dr Lazarovits is not new to the Australian industry. In fact he has had nearly ten years of collaborating with Dr Nigel Crump, from Vic Seed Potato Authority (ViCSPA), aside from his work on APRP1.

For him, this collaboration or sharing of information is simple: because food production has no national boundaries and therefore knowledge must be shared.

"Production is international. I think one of the strengths of HAL is that they said we don't want to re-invent the world and so if you know of technology that is already there then go and get it and share it and we'll speed things up," explained Dr Lazarovits.

It also helps that Australian and Canadian scientists are tackling many of the same issues.

"The problems are the same. So while we've got similar production, similar companies, we've all got Common Scab, we've all got Powdery Scab, Verticiliium Wilt, storage problems, fertility; the problems are all the same," said Dr Crump, who also attended the meetings at the DPI.

Current work

In almost all of Dr Lazarovits' work there is a focus on finding ecological means of production coupled with providing improvements to farming practices.

Dr Lazarovits is currently conducting a project working with Canadian university researchers to develop bio-sensors. The project involves taking the gene out of fire flies that makes them glow, which he said will help increase the nitrogen content in crops.

"You can take those genes and put them into bacteria and bacteria respond to environmental factors so when this bacteria senses a molecule of nitrogen it starts to glow. And the more nitrogen it senses the more it glows," he explained.

"So, we are developing what we call very cheap methods for growers to measure nitrogen in their soils and crops by exposing the bacteria to a sap from this plant and detecting nitrogen. It's working well. It's almost finished."

The good thing about this project, said Dr Lazarovits, is that it will provide a more ecological way of fertilising crops.

"You don't have run off into the streams and rivers and there is no pollution coming off these things, so if you can enhance just how much nitrogen is picked out of the soil and air it makes it much more environmentally friendly, plus it has lower costs," he said.

Dr Lazarovits said most of his work was about finding means of implementing farming practices that are based on ecological principles. One of the reasons for this focus is because of the obvious environmental degradation caused by some practices. The other reason, which is perhaps more practical, is that the old ways are no longer justifiable.

"If you look at how agriculture developed over the last fifty years it was really based on very cheap inputs such as nitrogen fertilisers being made out of natural gas, oil, and so on."

He said that the prices of these commodities have increased so much over the years, which has had a snowball effect in that the production costs go up which causes food costs to increase too.

Aside from the increased costs to production, Dr Lazarovits said it has been the huge environmental issues such as nitrification of lakes and rivers and contamination of ground water, which have also been side-effects of inputs.

This is why, while undertaking such important work, Dr Lazarovits keeps his ear to the ground, always alert to new ways of improving farming processes. pa

Dr George Lazarovits consulting Wayne Tymenson [left], and George Lineham [right], during his recent visit to Australia.

Photography by Dolf de Boer

Talking about a load of rot?

Words | **Dr Nigel Crump**

Fusarium Dry Rot of potato is a post-harvest disease that causes losses in storage of both seed and commercial potatoes. In the last few seasons there have been increased reports of Dry Rot in store. This article is a timely reminder about the disease and how it can be managed.

What causes Fusarium Dry Rot?

Dry Rot of potatoes is caused by the fungal pathogen Fusarium, of which there are several species. Fusarium species that cause Dry Rot of potatoes are present in many soils, if not all, and can survive for long periods of time. The fungus cannot directly penetrate the healthy tuber and it is entirely dependent on gaining entry through wounds. Wounds caused by mechanical damage during harvest (bruising and cuts), insect damage, scab, or nematode damage.

On cut seed, Fusarium cannot infect properly suberised surfaces, therefore, conditions to enhance suberisation can reduce the impact of Fusarium causing seed piece breakdown.

What is Dry Rot?

As the common name implies it is a “dry rot” of tubers. Surfaces of infected tubers may be sunken or wrinkled in appearance. Cutting the tuber reveals a distinct brown rotted area. Areas of the rotted tuber may have pink, white or yellow coloured fungal growth. Secondary infection with bacteria may lead to the development of soft rot (which is “wet” and generally has an odour).

How to manage Dry Rot?

There are three key areas that contribute to Dry Rot management. These areas are mainly focused of preventing disease.

1. Bruise management
2. Use of fungicides
3. Storage conditions

Bruise management

Reduce the wounds – reduce the disease

- Handle the tubers as gently as possible during harvest.
- To reduce damage, pay close attention to chain speeds and

do not allow tubers to drop more than 10cm.

- Use foam padding on surfaces to minimise impact of tubers
- Do not harvest in very warm dry conditions (this has been a factor for the last few years contributing to increases in dry rots in store)
- Cold tubers (below 10°C) are more prone to damage – avoid harvesting and handling tubers in this condition.

Use of fungicides

Fungicides are available to manage Fusarium Dry Rot of potatoes

There are several post-harvest fungicides registered for the management of Fusarium Dry Rot of potatoes; the active ingredients of the fungicides include Mancozeb, Thiabendazole and Imazalil. Always seek advice from your local agrichemical reseller and always read the label.

There are reports that some species of Fusarium that cause Dry Rot have developed resistance to Thiabendazole. It, therefore, may be appropriate to rotate the active ingredients used to prevent further resistance development.

Mancozeb is used on cut seed as a management option to reduce the development of Fusarium seed piece decay. Both Thiabendazole and Imazalil are used as fungicide treatments for potatoes into storage.

Chemical application should not be seen as a substitution for the other management options.

Storage conditions

The right conditions at early storage can reduce the occurrence of Fusarium Dry Rot.

Despite all precautions taken during harvest and handling some injury to tubers will occur.

Storage conditions to enhance the suberisation of wounds are necessary to reduce the occurrence of Fusarium Dry Rot. Pathogen infection (and tuber weight loss) is greatest in the first few weeks of storage (i.e. immediately after harvest). It is, therefore, critical to enhance suberisation to reduce the opportunity for infection.

Wound healing is best achieved at 10-15°C for one or two weeks. It is important to note that freshly dug potatoes have a high rate of respiration which significantly increases the initial heat load of the stored potatoes. Therefore, the immediate treatment is to reduce the heat load by maximum movement of air through the stored tubers. Positive ventilation (forced air) through the stored tubers is the most effective in removing the heat load. To reduce the potential for condensation occurring on the surface of the tubers (which can lead to increased rots including Fusarium and bacterial rots) the ventilation air temperature should be within a few degrees (2 °C) of the pulp tuber temperature. Changes in the temperature should be gradual and stepped down to further reduce the formation of condensation on the tubers.

Positive ventilation of cut seed will increase rate of suberisation of cut surfaces and reduce the infection by Fusarium that can cause seed piece breakdown.

Fusarium does not develop at storage temperate below 10°C. Therefore, for processing stocks that are stored at higher temperatures it is especially important to minimise wounds and encourage wound healing because Fusarium can continue to develop in storage.

Finally, the potato store should not be thought of as a hospital; diseased tubers do not get better in store. So ensuring quality tubers into store leads to quality tubers out of store. pa

For further information contact Dr Nigel Crump at ViCSPA on (03) 5962 9043.

Bridging the gap

Words | **Mignonne Rawson**

Apparently two heads are better than one, so surely four countries are too? A recent pilot project has used this idea by trying out closer collaboration with foreign counterparts, as part of the first phase of the Australian Potato Research Project (APRP).

Collaboration could be the new ingredient in the second phase of the Australian Potato Research Project (APRP) after the success of a pilot project which developed out of APRP1.

The pilot project centered on the benefits of international collaboration to validate the use of DNA diagnostic tests for key soil-borne pathogens of potatoes.

Development of diagnostic tests to measure key potato pathogens in soil and seed has been undertaken by researchers in Australia and the UK. Related research is also being undertaken in New Zealand and South Africa.

DNA tests were developed in APRP1 to measure a number of pathogens in soils and seeds which cause Powdery Scab, Common Scab, Rhizoctonia and *Meloidogyne fallax* (Root Knot Nematode).

The pilot project established a useful framework to collaborate on these findings using web-based tools, video conferencing and shared protocols and approaches.

Kathy Ophel Keller, Principal Scientist, Plant and Soil Health at South Australian Research and Development Institute (SARDI) was the Team Leader of the project.

Dr Ophel Keller said that although it was not a "stand-alone" project, it had been a useful "bridge" between phase one and two of APRP, and that it had created a freer flow of information between countries, which will add to future projects.

"The first round of the APRP has been completed now and this pilot project was really about creating a bridge between APRP1 and 2. It will set the framework for international collaboration in phase 2."

"The pilot project is about setting up linkages and it has established collaboration that has led to APRP2."

Diagnostic tests

Dr Ophel Keller said that the diagnostic tests developed in APRP1, and used as part of the pilot project, would be a longer term project.

She also said that although the collaboration was useful, and would continue to be in the future, it was the research into the diagnostic tests, which was the really important element because of the potential benefits to farmers and the industry as a whole.

"We developed diagnostic tests which are used to measure pathogens in soil, which will help growers to make informed decisions prior to planting a crop," she said.

She said testing had also improved because now it is better known how pathogens are distributed across a field, which will help in determining where to take test samples.

An idea was born

According to Dr Ophel Keller, the idea for international collaboration in diagnostics was formed over the past few years.

"A small group of scientists and growers from APRP1 went to the UK in August 2007 to meet key researchers. From this, and discussions between representatives of the relevant levy boards in each country, we agreed that a collaborative approach would be useful," explained Dr Ophel Keller.

"It is very much about sharing information and research approaches so we can deliver the most current information to growers."

The different forms of communication used in the pilot project included video conferences and a device called Share Point, which is an Internet site where test results can be uploaded and viewed by colleagues from all over the world.

Although these technological aids in communication will never compete with one to one meetings, Dr Ophel Keller said they were very useful and effective alternatives.

"It is a very cost effective way to communicate," she said.

Dr Ophel Keller said that APRP1 had been successful and that APRP2 was on the verge of beginning.

"A suite of diagnostic tests were developed from APRP1 and now the focus is on delivering these tests to growers," she said.

"We are now drawing on this research and looking at the best ways to deliver this technology. Australian potato growers will be among the first in the world to benefit from this technology.

"The focus of APRP2 is to use these tests with growers and processing companies to reduce rejection rates by processors and assist growers to make informed decisions about the pathogen status in soil before they plant crops."

So, as the old adage goes, those who work together, discover together. It has certainly been the case with this latest pilot project which has linked researchers from around the world to share information and aid in the next phase of APRP.

This project was facilitated by HAL in partnership with AUSVEG. It was funded by the National Potato Levy and voluntary contributions from industry. The Australian Government provides matched funding for all HAL's activities. pa

For further information please contact Dr Kathy Ophel Keller on (08) 8303 9368 or email kathy.ophelkeller@sa.gov.au

The Bottom Line: PT0848

- The pilot project established a framework to collaborate on findings.
- Soil and seed pathogens studied were Powdery Scab, Common Scab, Rhizoctonia and *Meloidogyne fallax* (Root Knot Nematode).
- Australian potato growers will be among the first in the world to benefit from the technology.

Potato Crops used in field trials for APRP

APRP 1: Summary of outcomes

Research Director: Dr Iain A Kirkwood, Tasmanian Institute of Agricultural Research

Sub-Program Leaders: Dr Kathy Ophel Keller, Mr Tony Slater, Dr Nigel Crump, Dr Leigh Sparrow, Associate Professor Calum Wilson

Background:

This collaborative program brought together potato researchers from organisations around the world in an effort to seek solutions to the processing potato industry's most urgent problems. The program was developed through a series of planning workshops and meetings over 12 months (June 2003-04). The program was an initiative of Horticulture Australia Limited (HAL) and the Processed Potato Industry Advisory Committee (IAC) and was managed on their behalf by the Tasmanian Institute of Agricultural Research (TIAR). The program consisted of five major sub-components each involving a collaboration between a number of different research organisations.

1. Sub-Program 1 - Diagnostics lead by the South Australian Research and Development Institute (SARDI).

In collaboration with Plant and Food New Zealand the project developed several DNA-based diagnostic tests to measure key pathogens of processing potatoes in soil and on seed. The tests helped researchers to better understand how pathogens grow and survive in soil. Ultimately, growers will be able to use these tests prior to planting to determine the risk of disease developing in the subsequent crop.

2. Sub-Program 2 - Resistance Screening lead by the Department of Primary Industries Victoria (DPI).

This program developed optimal disease screening protocols for three key diseases in the processing potato industry (Common Scab, Powdery Scab and Tomato Spotted Wilt Virus) to screen key cultivars and parental types for resistance. The project compared screening protocols internationally, to adopt a design methodology which would allow results from trials to be compared to other international results.

3. Sub-Program 3 - Soil Health lead by the DPI VIC.

This project investigated the impact of a number of organic and inorganic soil amendments on several soil-borne diseases and investigated the influence of chemical and biological factors on disease development.

Key findings included:

Powdery Scab: The potato variety had a large effect on the incidence of Powdery Scab disease at harvest as did the timing of fungicide application.

Common Scab: A range of nitrogenous amendments, meat and bone meal, urea, Perlka, ammonium lignosulfonate and fish emulsion were effective in controlling Common Scab. One key finding was that pH alone may not be a driver for Common Scab

Soil Chemistry:

The impact of soil chemistry on disease development was investigated in a national series of trials. High iron levels in soil were consistently identified with lower incidence of Powdery Scab in Shepody and Desiree cultivars. Regional data observed in each state showed soil type is a major influence on scab disease.

Soil Biology:

In collaboration with Agriculture and Agri-food Canada the project team employed a recently developed DNA technology to investigate the biological composition of various potato soils in order to determine the key microbial components that influence disease development.

4. Sub-Program 4 - Crop rotations lead by TIAR.

This program was conducted in Victoria, South Australia and Tasmania to better understand how crop rotations influence the soil-borne potato diseases Rhizoctonia, Powdery Scab and Common Scab. The main findings were that rotations affect soil-borne diseases, but appear less important than many short-term influences including weather, irrigation management, seed quality and chemical disease management, particularly for Rhizoctonia.

Sub-Program 5 - Increasing resistance to Common Scab and Tomato Spotted Wilt Virus (TSWV) lead by TIAR.

Common Scab disease:

Somatic cell selection techniques were used to develop Common Scab resistant clones of current commercial potato varieties. These tolerant lines were further screened in a series of glasshouse and field trials resulting in the selection of a number of clones, which showed very high to extreme resistance to the disease, and that also produced tuber yields, quality and cooking characteristics equivalent to (or better than) the parent cultivar.

Tomato Spotted Wilt Virus (TSWV):

Resistance to tuber infection by TSWV has been demonstrated in certain genotypes. This resistance trait was targeted to develop gene markers for use in rapid cultivar screening and provide efficiencies in breeding for TSWV resistance. Crosses were made and over 200 seedling clones collected and maintained in tissue culture. This ongoing project will continue phenotyping these crosses before carrying out a genetic analysis, which will ultimately lead to the development of a gene marker.

This project was funded by HAL using the National Potato Levy with matched funds from the Australian Federal Government, and voluntary contributions from New Zealand Plant and Food Research and Agriculture and Agrifood Canada. pa

Decades of knowledge

DuPont's Specialty Products Segment Leader, Scott Campbell

Growing up on a sheep station in north western NSW in the late 1960s and 70s, where life swung between years of drought and flood was perhaps not exactly the training ground for a Product Manager at DuPont™, but it was a good start for knowing what is important and what is not.

According to Mr Campbell, family and friends are important, so too is water and food.

Mr Campbell has had a variety of roles since graduating from Queensland Agricultural College including time spent working for the agriculture industry in the US. When he returned to Australia he worked in the cotton industry after which he took a job at DuPont, where his roles have included working in several markets including timber, vegetables, cereals and cotton.

Mr Campbell started with DuPont at the start of the 1990s and was based in Rockhampton. Nearly 20 years later he is still working for DuPont, based in Toowoomba.

Seven years ago he took on the role as the Cotton Segment Manager and a year ago he took up his current role of looking after special segments, which includes the vegetable market plus the pasture cotton and sugar cane markets for Australia and New Zealand.

As a Product Manager he is accountable for the product being there when farmers need it, but he is also responsible for the marketing of the product which is effectively the advertising, promotions, budgets, pricing. He is also responsible for internal company needs to do with strategy and positioning, so that the business knows the position and direction intended for products.

"The best part of where I'm located is that I can test ideas and concepts with local farmers and they can get hold of me as well, to look at product or marketing ideas or to tell me that I made a mistake. The biggest issue, as always, is time as farming is a busy business now and time is at a premium," he said.

Mr Campbell said it is imperative to develop and maintain good relationships with representatives from all levels of the industry including grower groups and associations.

"The number one thing to remember is how important it is that farmers ask questions to get the best information in order for them to make better decisions, and at the same time these questions make other people think and hopefully we all do that little bit better," said Mr Campbell.

After all his years of working with DuPont and nearly 30 of working in the agriculture industry, Mr Campbell said changes have taken place at all levels, from the administration of farming businesses to products and services, which in some instances have created great challenges for people such as himself.

"It's becoming more difficult at the farmer level to manage both the act of farming and the business aspects of the farm with the ever-increasing demands for managing people as well as the audit, compliance, operational issues of the farm," he said.

"Unfortunately, there's no single answer, rather it's becoming more important for people to become more competent with utilising the current tools and programs that are available."

Another problem the industry faces, according to Mr Campbell, is the issue of water shortages, as well as being able to deliver the product to end users without causing problems.

According to Mr Campbell it is challenges such as these that make the industry an ever evolving place and also ensures that the farmer is always in the forefront of his mind.

"My first interest is what farmers are going to need." pa

Growers encouraged to pick up tools to navigate urban encroachment

Words | **Dzintra Horder**

Every year it seems that the city expands and open paddocks are gobbled up by housing estates. Potato farmers are amongst those affected by these landscape changes and a recent Horticulture Australia Limited (HAL) project has been conducted to assess the effects.

As the great Aussie 'quarter-acre block dream' and inner city housing affordability put even greater pressure on the city fringes, understanding the issues around peri-urban land use planning and its impacts on horticulture are becoming increasingly important.

A peri-urban area is commonly understood to be land adjacent to the edge of an urban area, extending from the built up edge of the city to the rural hinterland. The concept of agricultural land 'awaiting urban development', via an ad hoc process of conversion, is often regarded as an inevitable outcome of population and economic growth.

The potato industry is amongst those in the horticultural industry that are affected by the expansion of cities into traditional agricultural growing areas.

As urban expansion continues to grow horticultural industries find themselves sharing the environment with lifestyle farmers and non-rural residents. The issue is particularly important to many intensive agricultural industries and has been on the government planning radar as a result of land use conflict in peri-urban areas.

Conflict can arise over such things as noise from: dogs, trucks and farm equipment; odour from fertilisers and sprays; health concerns about spray drift; access to water; and visual intrusion from things such as hail netting.

While growers face the challenge of continuing to make a living in an increasingly urbanised environment, planners must balance the demands of population growth with the need to maintain agricultural businesses, protect the environment and ensure food supply.

The responsibility for assessing development and subdivision proposals generally falls on local government who, by their own admission, are in many cases under resourced and not well placed to address the issues.

Input from existing landholders would serve to assist planners in their decisions. To help growers understand and address issues related to peri-urban planning, a study was commissioned in 2007 as part of the HAL across industry funded program.

The project comprised a literature review on peri-urban horticulture and land use planning and a 'tool-kit' made up of practical guidelines to help growers navigate through land use planning jargon and the system itself.

HAL Project Manager Ravi Hegde says the planning system can be a minefield and the report, *Peri-urban horticulture and land use planning: Literature review & tool-kit*, would help people to understand how Federal, State and local governments work to put the whole planning system in place.

"It has a glossary of terms which give people an everyday English

understanding of jargon," said Mr Hegde.

"It also provides some practical information about buffers. Having buffers in place will reduce the potential for conflict with those neighbours."

The tool kit provides a series of fact sheets designed to help users understand the planning process and equip them to become involved in the land use debate at a local level.

The following topics are featured:

- **Understanding the land use planning system** – a quick guide to the Australian planning system which outlines the various levels of legislation and how it affects peri-urban stakeholders.
- **Zoning** – helps those seeking to develop their land or preserve it for agricultural use to understand how governments use zoning controls and the limitations of the current system.
- **Land use conflict** – an outline of some of the sources of disputes between neighbours in peri-urban areas and some possible practical approaches to address them.
- **Buffers** – examines the pros and cons of using land buffers between neighbours to reduce conflict.
- **Urban growth boundaries** – looks at the urban containment policy designed to protect peri-urban horticulture.
- **Transfer of development rights** – examines the system by which landowners can transfer the right to develop one parcel of land to another parcel of land in order to protect both investment opportunities and horticultural production.
- **'Right to farm'** – outlines a legislative approach that is used in the US and Tasmania to deal with land use conflicts.

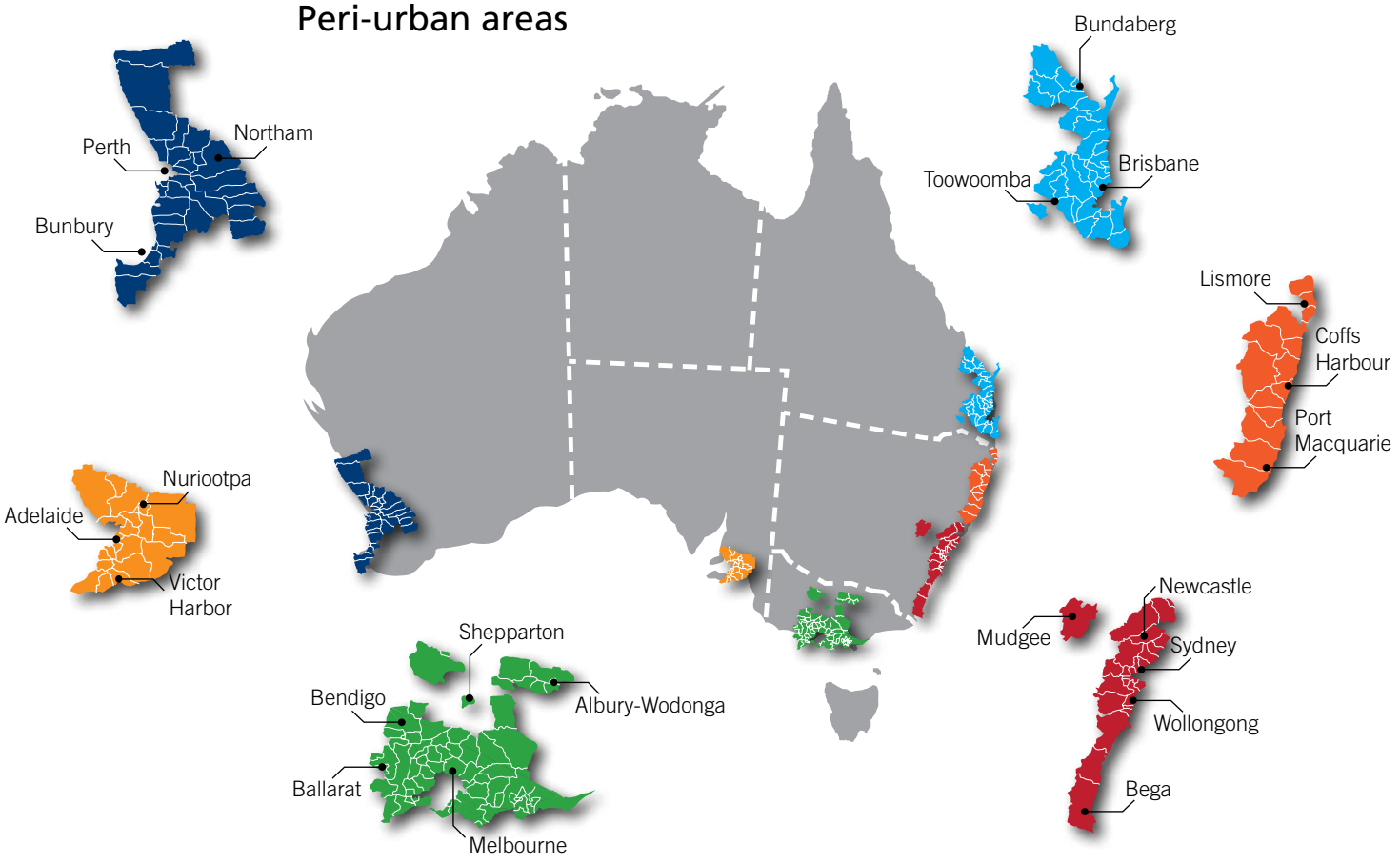
The report and tool kit can be accessed at http://www.horticulture.com.au/industries/

This across industry project was funded by HAL using levies and voluntary contributions from industry with matched funds from the Australian Federal Government. pa

For further information please contact Luke Jewell on (02) 9241 5655 or email him at luke.jewell@ghd.com.au

The Bottom Line: AH07031

- Understanding the issues around peri-urban land use planning, and its impacts on horticulture, have become increasingly important.
- The potato industry is amongst one of the horticultural industries affected by the expansion of cities into traditional agricultural growing areas.
- Local government is often under-resourced and not well placed to assess development and subdivision proposals.



A peri-urban area is commonly understood to be land adjacent to the edge of an urban area, extending from the built up edge of the city to the rural hinterland.

NEWS

New film aimed at improved farm safety

Workplace Health and Safety Queensland are urging farmers to think about their farming practices in order to avoid accidents.

Workplace Health and Safety Queensland has produced a film about Garry Nichols, who had an accident on his tractor, which rolled while he was working on his farm 17 years ago.

Although he survived the accident, Mr Nichols still bares the scars, including the loss of his leg and his farm.

The film is seeking to remind farmers to put safety first and to look at the broader consequences which can result from an accident like that which took place in Mr Nichols case, including the impact such incidents can have on family, relationships, friends and finances. pa

To view the film visit: www.workplace.qld.gov.au

Blight resistant GM potato testing planned in the UK

Field trails for genetically modified potato resistant blight are hoped to be approved to start in Mat in Norfolk, UK the BBC reports.

The disease, which has caused huge yield losses over the years, costs the global potato industry over $AUS 6 billion a year.

Scientists at the John Innes Centre have identified two genes from a wild variety which can resist the disease.

If UK government department Defra approves the proposal, a three-year field trial will start in May, with the first results expected to be announced by the end of the year.

If the potato trial is successful, spraying with fungicide could be reduced by 80% and commercial production of the GM potato could start within five years. pa

Australian appointed to position of new SAC potato agronomist

Australian agronomist, Andrew Powell, has joined the ranks of Scottish Agricultural College (SAC), providing specialist advice to UK potato growers.

SAC is an international organisation which supports the development of rural communities and industries through research and development, education and training and consultancy services. Mr Powell will be working in SAC's new office in York, UK. pa

New director for potato council

Dr Rob Clayton has recently been announced as the Interim Director for the Agriculture and Horticulture Development Board's (AHDB) Potato Council, UK.

Dr Clayton, who was previously the Head of Knowledge Transfer at the council, takes over from Ms Sandra Ziles who took up the post last summer.

"Dr Clayton brings a breadth of skills to the role that encompasses leadership, technical expertise and good customer communications. He was a key player in the recent integration and re-launch of the Potato Council and has a real passion for the potato industry," said AHDB Chief Executive Kevin Roberts, as reported in the Potato Review. pa

What's On

Former World Potato Congress director dies

Don Anderson, founding World Potato Congress Inc. (WPC) Director, and Secretary-Treasurer, has died.

As reported by the WPC, Mr Anderson died suddenly on March 1 2010, at his home in Canada. He was 82.

Mr Anderson became Director of the Prince Edward Island Potato Marketing Board in 1965 and was appointed Manager in 1969, a position he held for 20 years.

He then served as the WPC Director and Secretary-Treasurer from 1991 to 2000 and in 1998 was inducted into the Atlantic Canada Agricultural Hall of Fame. pa

Produce executive program 2010

Potato growers are amongst those eligible to register for the annual Produce Executive Program 2010, which will run May 16-21.

The program is organised by Streamwise Learning, an organisation which provides education programs for those in the horticulture industry.

This course is open to people at all levels of the supply chain and will provide an opportunity for participants to network and address current business and industry issues, as well as the challenges confronting the fruit, vegetable, flower, nut and nursery industries.

The program covers four main topics:

1. Key consumer and market trends
2. Servicing the marketplace
3. Managing commercial relationships
4. Best practices in produce business management

The seminar format incorporates faculty lectures, in-depth case studies, field trips, workshops and guest speaker presentations.

Horticulture Australia Limited (HAL) is offering $2000 towards the registration fee for approved Australian participants from all levels of the supply chain. pa

For more information contact Program Manager, Anita Pike on (03) 8640 0947 or email her at apike@streamwise.com.au

Blight on Ireland

A new strain of potato blight has been detected in Ireland according to the Irish Examiner.

First detected in County Down in 2007, the 'Blue 13' strain has moved down along the east coast. It is also spreading in County Donegal but it has not been found in potato growing areas of Cork.

Wet weather last summer coupled with late planting resulted in ideal blight conditions.

As reported in the Irish Examiner Steven Kildea and Denis Griffin, from Teagasc Crops Research Centre, Oakpark, County Carlow, presented at the Teagasc-IFA national potato conference saying that potato blight has the potential to inflict serious yield reductions.

This new strain is more virulent strain and is capable of causing serious infections on potato varieties which have previously been classified as having good foliage blight resistance.

Increased awareness of crop management is essential, with time of planting, fungicide choice and application timing all having a greater influence on disease control programs. pa

30 April-1 May 2010

24th East Gippsland Field Days

Where: Bairnsdale Aerodrome, East Gippsland, Victoria

What: East Gippsland Field Days were started in 1986 by the Lindenow Lions Club.

Further information: http://www.egfielddays.com

27-30 May 2010

AUSVEG National Convention 2010

Where: Conrad Jupiters Hotel Casino, Gold Coast, Queensland

What: : Includes announcement of the 2010 AUSVEG National Awards for Excellence on May 29.

Further information: phone (03) 9544 8098 or visit www.ausveg.com.au/convention

22-24 June 2010

The International Potato Processing & Storage Convention

Where: The Roxburghe Hotel, Edinburgh City Centre, Scotland

What: The Roxburghe Hotel will be hosting The International Potato Processing & Storage Convention in June. It is one of the most important B2B events in the world, covering both the processing and storage sides of the potato industry and offering a programme of topics of interest to both sectors, as well as separate, highly specialised programmes.

Further information: www.potatoconvention.com or contact: convention@crier.co.uk

17-19 August 2010

AgQuip Field Days 2010

Where: : AgQuip site, Blackjack Road, Gunnedah, NSW (North West Slopes and Plains) 2380

What: Australia's biggest agricultural industry field day event, staged over three days. Showcasing 500 exhibitors representing 2000 companies, the event attracts over 100,000 visitors every year.

Further information: : www.farmonline.com.au/events/agquip or call (02) 6762 2399

PVY – Seeking a solution

A new strain of Potato Virus Y (PVY) has the potential to cause havoc for the Australian potato industry according to researchers at the Victorian Department of Primary Industries (DPI).

According to researchers at the DPI a more recently discovered strain of PVY, which causes necrotic symptoms in tubers and up to 80 per cent yield loss, is something to which farmers should be aware.

Dr Brendan Rodoni, Senior Plant Virologist at the DPI in Knoxfield, who has been working to develop diagnostic testing procedures for potato viruses, including this new strain of PVY, said that it was detected in 2003 and since then the incidence has increased in the last six to seven years with reports of the virus in Victoria, South Australia and Queensland.

PVY has also been found in other parts of the world including Europe, North America, Canada and New Zealand.

"Some potato cultivars infected with this strain of PVY can have chronic cracking and necrosis of the tuber, which makes the crop unsellable," he said.

Modes of transmission

According to Dr Rodoni, PVY can easily be transmitted through several channels including aphids and mechanical operations.

"Aphids can feed on a plant infected with the virus for only five seconds and then go to another plant which doesn't have the virus and feed for five seconds and the virus will have been transmitted," Dr Rodoni said.

"It's quick and this new strain of PVY is particularly aggressive."

Dr Rodoni said that this was not the case for other viruses such as Potato Leafroll Virus (PLRV), which takes longer to be acquired (10-30 minutes) and transmitted (24-48 hours) by aphids, since the virus needs to move into the gut, through the body and back out through the salivary system of the aphid.

Dr Rodoni said that PVY, like other potato viruses, is tuber-borne. This means that using the same line of virus-infected potato for production for several consecutive generations will lead to a progressive increase in viral load and a subsequent increase in crop losses.

"In potatoes, it is particularly important to plant seed crops that have been certified to have low virus levels, because viruses can be passed on to successive crops via infected seed tubers," he said.

"Another big concern is that some potato cultivars don't show signs of PVY."

Dr Rodoni said that this was dangerous because commercial growers may not realise they have an infected crop and aphids can feed on them and carry the virus to the other crops.

Solutions

One of the main messages being put to growers is: don't plant a problem. Rather the best way to combat the virus is by using certified seed. One of the main reasons seed potato certification schemes were set up in the first place was to manage virus diseases in the potato industry. The use of certified seed potatoes

remains an important management option, particularly for PVY.

Other things for growers to remember in their farming practices are:

- Hygiene – It is imperative for farmers to implement hygiene practices during farming operations such as seed cutting. Using a disinfectant on the seed cutter periodically or at least between seed stocks can help reduce the transmission of PVY.
- Weed control – Many hosts for disease including Hairy Nightshade can carry the virus and pass it on to a potato crop. Therefore, weed control in and around potato crops is important. Fortunately, PVY does not transmit in true botanical seed of weeds such as nightshades.
- Mechanical spread – Operations such as power hilling where plants are damaged can contribute to the spread in fields. Therefore cultivation should be timed so as to avoid damage of plants allowing sap transfer of PVY. In addition, in-crop operations (such as bin row cultivation) should be done in early generation crops prior to later generation crops to reduce the risk of transmitting PVY between crops.

Research to develop future solutions

Dr Rodoni and Research Scientist Mirko Milinkovic, have been working together to find solutions to this problem by trying to develop diagnostic testing procedures for potato viruses.

The existing project is in its second year and involves collaboration with ViCSPA and Horticulture Australia Limited (HAL). It involves creating more reliable diagnostic tests for four viruses which affect potato crops in Australia. The viruses are: PVY, PLRV, Potato Virus S (PVS) and Tomato Spotted Wilt Virus (TSWV).

"We are working on developing a capability to directly test potato tubers for PVY, PVS, PLRV and TSWV, with rapid turn-around compared to conventionally offered tests. We hope to offer this test through our diagnostic lab at the Vic DPI Crop Health Services," he said.

Conventional testing of virus infection levels in potato seed tubers can be determined by the grow-on and ELISA test. This test involves collecting potatoes from each seed lot and sprouting them (usually in a glasshouse) and then testing the young plants for the presence of a virus using ELISA. At present, test results take up to eight weeks to produce results. This method is used in seed schemes in North America.

According to Dr Rodoni this is unacceptable in Australia because planting is done all year round and test results need to be produced quickly, which is why the improvements in diagnostic tests that he is working on is one of the main achievements of the project.

"Producers and buyers of seed potatoes need answers in a few days, not weeks, so they are better informed on what to do," he said.

The direct tuber testing may be used to support existing seed certification inspections and leaf ELISA testing for potato viruses. This research project was funded by DPI in conjunction with VicSPA and Horticulture Australia Limited (HAL) to enhance the diagnostics supporting the seed industry. pa

For more information contact Dr Brendan Rodoni or Mr Mirko Milinkovic at the DPI Knoxfield on (03) 9210 9264.

Raised ring damage caused by Potato Virus Y

Ask the industry

If you have a question that you would like addressed, please ring Syngenta on 1800 067 108 or email Potatoes Australia: mignonne.rawson@ausveg.com.au. Please note that your questions may be published.

A regular advice column covering issues from resistance management to occupational health and safety.

An exciting new product has been recently trialed through Commercial Demonstrations on farms around Australia. AMISTAR Top is a high performance broad spectrum fungicide that contains two well proven active ingredients: Azoxystrobin for AMISTAR and Difenoconazole from SCORE. AMISTAR Top is due to be released for use by the APVMA in April.

Why are commercial Demonstrations (CD's) important when bringing a new product to market?

When we do our product development trials, we do trials in small areas to easily replicate the treatments so we can prove differences in treatment rates in terms of disease control. When we conduct CD's, these are applied through commercial size grower machinery so that growers can see the results for themselves prior to the registration of the product and be confident to purchase the product to treat their crops.

Why is this new product so important to the potato and tomato industries?

Previously as a grower you were faced with a decision as to which product to use for Target Spot *(Alternaria solani)* control at the critical row closure period. If you had a clean crop at row closure, the choice would have been AMISTAR as the super protectant for Target Spot *(Alternaria solani)* or if there was target spot present the better choice would have been SCORE for its early curative properties. The development of AMISTAR TOP has removed a critical decision of which fungicide growers should use for the row closure application. This highly effective combination not only provides you with long lasting protection against Early and Late Blight, but also exceptional early curative action against Target Spot.

What potato diseases will be covered by the AMISTAR Top label when it is registered?

AMISTAR Top will be registered for the control of Target Spot *(Alternaria solani)* and Late Blight *(Phytopthora infestans)* in potatoes. pa

Effects of target spot

Scott Mathew
Syngenta

chips
A look at what's new in potato information and technology

Horticulture New Zealand

Potato viruses

We start this feature with some good news on Potato Virus Y (PVY) in New Zealand (Fomitcheva et al.). Around the world, PVY causes serious disease in many members of the potato family, including potato, pepper, tomato and tobacco, with impacts such as stand loss, reduced yields and undersized tubers. New strains of the virus that seem to be caused by the recombination of existing strains have been detected in many potato-growing regions, and the researchers wanted to know how this recombination was happening. So they chose New Zealand, an isolated country with good quarantine procedures, for their study.

More than 30 PVY isolates that had been collected in New Zealand over the past 20 years were examined using several different laboratory methods. The results showed that the New Zealand isolates were mainly N- and O-strains, with no recombinants detected. Additional greenhouse experiments could also not measure any recombination, even if tubers infected with different strains were planted in close proximity. So while the researchers couldn't answer their question, New Zealand potato growers can be well pleased that PVY is not actively recombining into new strains.

The next article (Boiteau et al.) looks at ways of controlling PVY in seed crops. Over 3 years potato crops were (i) treated with mineral oil sprays to control aphids, (ii) surrounded by a border crop to act as a barrier to aphid-transmitted virus entering the crop, and (iii) grown using both methods (i) and (ii). Both techniques alone gave good reductions in PVY, but the combination treatment was nearly twice as effective as either treatment alone and this effect was more consistent that the single treatments. The mineral oil spray was also tested as whole plot, border-only or centre-only applications. PVY reduction for the border-only spray was similar to the whole plot or centre-only applications and this method is recommended to minimise costs.

The third article (Davis et al.) looked at the behaviour of aphid vectors of potato viruses to develop an understanding of the virus infection process. Aphids generally enter a potato crop from the margins, but gaps in the crop canopy can also attract aphids. Thus, experiments were set up to investigate whether localised stand gaps, such as those caused by planter skips, would affect PVY spread. Where stand gaps were less than 0.6 m2, PVY infection was 13%. In contrast, in gaps greater than 0.6 m2, PVY infection was 29%. A stand gap of 0.6 m2 equates to a loss of three or more consecutive plants. This emphasises the importance of good planting technique.

Border treatments to control Potato Leafroll Virus (PLRV) were also investigated in the fourth paper (Carroll et al.). In the northern Great Plains of the USA, winged aphids disperse into potato crops from field margins during summer, spreading from local crop and weed hosts. Experiments carried out in 23 seed potato crops showed that methamidophos applications targeting crop borders gave excellent control (>94%) of colonising aphids, reduced the treated area by ca 95% and reduced costs from about US$58.91 to $4.22/ha.

Virus infections are notoriously difficult to identify, and the fifth paper (Mortimer-Jones et al.) describes a rapid molecular method for simultaneously detecting four viruses, Potato Leafroll Virus (PLRV), Potato Virus X (PVX), Potato Virus S (PVS) and Tomato Spotted Wilt Virus (TSWV), in one test-tube. The method, based on the polymerase chain reaction (PCR) technique, was highly reproducible and very sensitive, being able to detect a single infection from a bulked sample of tubers. This will be a very reliable and cost-effective tool for the seed potato industry.

The final paper (van Toor et al.) compared the effectiveness of a calendar-based insecticide regime (methamidophos fortnightly) with various targeted insecticide control treatments for reducing aphid populations and a potato virus infection. Targeted treatments involved applying lambda-cyhalothrin or pymetrozine when an aphid threshold of 10 per 150 potato leaves was exceeded. Experiments were carried out over two years in Pukekohe, North Island, and over three years at Lincoln in the South Island of New Zealand. At Pukekohe, in both years aphids were not found on potato foliage until late January, making 3–4 of the calendar-based sprays unnecessary. In autumn, plots treated on a calendar basis had higher levels of aphids than untreated plots, probably because spraying on this basis suppressed aphid predators (e.g. syrphids and lacewings). At Lincoln, only one insecticide application or imidacloprid seed treatment alone was needed to keep populations below the threshold for two of the three years, with no treatment required in the third year. Insecticide treatments did not reduce PLRV or PVY infection of tubers at either site in any year compared to the untreated control. Controlling aphids using a threshold population approach will reduce insecticide application costs.

- Potato virus Y strain spectrum in New Zealand – absence of recombinant N:O strains. Fomitcheva et al. (2009) Journal of Phytopathology 157: 507-510.
- Crop border and mineral oil sprays used in combination as physical control methods of the aphid-transmitted potato virus Y in potato. Boiteau et al. (2009) Pest Management Science 65: 255-259.
- Planter skips and impaired stand favors potato virus Y spread in potato. Davis et al. (2009) American Journal of Potato Research 86: 203-208.

continued over page ▶

- Border treatment to reduce insecticide use in seed potato production: biological, economic, and managerial analysis. Carroll et al. (2009) American Journal of Potato Research 86: 31-37.
- A single tube, quantitative real-time RT-PCR assay that detects four potato viruses simultaneously. Mortimer-Jones et al. (2009) Journal of Virological Methods 161: 289-296.
- Targeted insecticide regimes perform as well as a calendar regime for control of aphids that vector viruses in seed potatoes in New Zealand. van Toor et al. (2009) Crop Protection 28: 599-607.

Carbon dioxide levels

While we hear a lot about the effects of elevated atmospheric CO2 on climate change, particularly global warming, there is not a lot of media comment about the direct effects of increased CO2 levels on plant growth, many of which are positive. This short paper describes a study where potatoes were grown under controlled CO2 atmospheres and the effects on plant growth parameters were measured. Physical properties, except for potato shape, are unlikely to be affected by elevated CO2, but significant changes are likely in potato composition.

Climate change and increasing atmospheric CO2. Consequences for potato yields and quality? Hoegy & Fangmeier (2009) Kartoffelbau 60: 30-33.

Tomato-potato psyllid, Candidatus Liberibacter solanacearum and zebra chip disease

Fifteen years ago few people had heard of the tomato-potato psyllid, and zebra chip disease was unknown. However, the rapid spread of the pest and the associated bacterial pathogen throughout the south-western United States, Mexico, Central America and New Zealand has led to a significant investment in research to understand the pest and the disease and identify control measures for both. This information is just beginning to be published in the scientific literature – so the information below is literally hot-off-the-press!

- Seasonality of Bactericera cockerelli in potatoes (Solanum tuberosum) in South Auckland, New Zealand. Psyllids collected from yellow sticky traps showed that adult activity began in October and remained low (ca 2/trap per week) until mid December. Plant sampling was also carried out at this time, but results were less sensitive than sticky traps. Crops harvested at this time had no detectable reductions in yield and quality. From late December trap catches increased rapidly, exceeding 100/trap per week in February. During this period, psyllid nymph numbers measured from plant sampling were positively correlated with trap catches, Liberibacter was detected and unacceptable levels of zebra chip disease were recorded. Cameron et al. (2009) New Zealand Journal of Crop and Horticultural Science 37: 295-301.
- Insecticidal activity of entomopathogenic fungi (Hypocreales) for potato psyllid, Bactericera cockerelli (Hemiptera: Triozidae): development of bioassay techniques, effect of fungal species and stage of the psyllid. This paper examined five fungal isolates (one Beauveria bassiana, two Metarhizium anisopliae and two Isaria fumosorosea) that were potential biocontrol agents for the potato psyllid. Fungal suspensions (2 ml of 107 conidia/ml aqueous suspensions) were applied to psyllids on potato leaves and kept under conditions that were optimal for the fungi. All isolates (except B. bassiana), produced 91–99% mortality in adults and nymphs, 2–4 days after application. B. bassiana mortality was 53 and 78% for adults and nymphs, respectively, four days after application. Thus, there is potential to apply biocontrol measures to manage the potato psyllid. Lacey et al. (2009) Biocontrol Science and Technology 19: 957-970.
- Zebra chip disease incidence on potato is influenced by timing of potato psyllid infestation, but not by the host plants on which they were reared. This study investigated the relationship between potato psyllid infestation and the expression of zebra chip disease. Potato psyllids were reared separately on four solanaceous hosts plants (potato, tomato, eggplant or capsicum) for more than one year. These psyllids were transferred to healthy potato plants four, six or ten weeks after germination. Zebra chip symptoms were seen in all potato leaves and tubers, regardless of the host that the psyllids had been reared on. Uninfested control plants had no zebra chip symptoms. Damage to leaves and expression of zebra chip symptoms were more severe on potato plants that had been exposed to potato psyllids four weeks after germination than on plants that had been exposed at later growth stages. Tubers from psyllid-infested plants had higher levels of reducing sugars (glucose) and lower levels of starch than uninfested plants. Gao et al. (2009) Insect Science 16: 399-408.

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