

# potatoes australia

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Australia's Potato Industry  
April 2008



Nic Kentish: a convert's tale

Vegetable Industry Awards: meet the finalists

International Year of the Potato 2008





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Front cover image: Nic Kentish on his property 'Greenbanks' on South Australia's Limestone Coast



AUSVEG Ltd is proud to be an Australian Grown campaign partner



## AUSVEG appoints new Chairman



David Anderson was appointed as Chairman of AUSVEG on 1 April following the resignation of Michael Badcock.

"I am very enthusiastic about the positive work AUSVEG does and have a vision for making the vegetable industry more profitable and cohesive," David said.

David has been a Director of AUSVEG since November 2005 and was elected Vice-Chairman this year.

"Michael Badcock has been an exceptional contributor to the vegetable industry for decades, both in the operations of a very successful business in Tasmania and in developing AUSVEG and industry leadership," David said.

Michael has been on the AUSVEG Board since the company's inception and has been Chairman for four years.

"I would also like to acknowledge the efforts and enthusiasm of John Roach who resigned from his position as CEO on Monday

31 March. John made an outstanding contribution to AUSVEG and raising the profile of the vegetable industry," David said.

Robert Lawler has been appointed as Acting CEO for AUSVEG. Robert has been with AUSVEG for three months in the role of interim Chief Financial Officer.

AUSVEG will advertise for a permanent CEO shortly.

"Robert has experience across a number of industries and organisations and will continue the operations of AUSVEG to meet the needs of the vegetable industry," David said.

Robert joined AUSVEG from a recent role in the shipping industry and has an extensive background in financial management.

"I am looking forward to working with David and the Board of Directors and meeting the new challenges facing AUSVEG as the peak industry body," Robert said.

David Anderson is a fourth generation potato and vegetable grower from Baldvis in WA.

He is also the Chairman of vegetablesWA and on the state executive of the Potato Growers Association WA.





## AUSVEG Potato Group Chairman's message

As you will all be aware, the Chairman and CEO of AUSVEG have resigned. Michael Badcock and John Roach have been keen contributors to AUSVEG and we wish them well into the future.

The board of AUSVEG has appointed me as Chairman, Jeff McSpedden as Vice Chairman and Robert Lawler as acting CEO. AUSVEG will in the very near future advertise for a new CEO but in the meantime, Jeff, Robert and I look forward to consolidating and advancing the interests of growers, members and the board for the benefit of the industry.

The basket price of vegetables has risen sharply in the last 12 months along with a marked increase in the costs of production. Potatoes, seen as a staple in many Australian diets, are also under price pressure. In addition to those challenges, the industry faces other negative effects, one of the biggest being consumption of potatoes.

Consumer attitudes towards potato continue to rise and fall according to beliefs about nutrition and obesity, and the way in which the popular media reports these trends. How we change them is a major focus for the entire potato industry.

It is a wide playing field but there are many ways in which to tackle the negative images that currently prevail. We can, for instance, look at ways to educate consumers about the food security and dietary advantages that potatoes have over rice and other grain. One method might be to showcase the benefits of different meal preparation techniques. In turn this might boost market awareness of the massive varieties of spuds in Australia.

Some of these measures are not easy investments to make, but they are achievable if we pull together and work towards a mutual goal.

The case for a potato marketing levy is imperative and a co-operative approach is essential if we are to guarantee a sustainable, solid future.

The International Year of the Potato continues to yield exciting projects both overseas and here in Australia, and with your help the message will find its way to more households and businesses.

Don't forget to tell the world to eat more spuds!



**David Anderson**  
AUSVEG Potato Group Chairman

## Communications Coordinator's message

Welcome to the April edition of *Potatoes Australia*, which has been produced during a period of transition for the magazine as we farewell Editor, Simon Adams. Simon has done a fantastic job over the past 12 months and we thank him for his dedication to the publication. Simon will continue to provide input to magazine in a freelance-writing capacity.

Our good news is that a new Editor has been appointed to continue providing R&D outcomes and information to the potato industry, and we welcome Jenan Taylor. Jenan has experience in the newspaper industry and qualifications in communication, professional writing and editing. I am certain she will ensure *Potatoes Australia* continues to connect and inform the Australian potato industry.



**Toni Davies**  
Communications Coordinator  
AUSVEG

## Editor's message

I have had an exciting and enjoyable first month at *Potatoes Australia*, thanks to the support of Toni Davies and the rest of the terrific AUSVEG team.

In this edition, we profile South Australian producer, Nic Kentish, and his new approach to growing, while our Potato Market Development Officer, Matthew Wickham, outlines the industry benefits and opportunities of the Marketing Plan.

We also update you on the recent Industry Advisory Committee meeting and profile the Vegetable Industry Awards finalists. Our coverage of the International Year of the Potato continues with a feature about a local business that has thrown itself into the IYP campaign with flair.

Although it has been a hectic transition period, I've been stunned at the individual and collective dedication and efforts of people to further the potato industry, especially in such challenging times for global primary production. I'm looking forward to informing you about those efforts and also to hearing more about the things that matter to you. Please don't hesitate to drop me a line if you have something to share.



**Jenan Taylor**  
Editor  
*Potatoes Australia*

## International Levy Board Meeting - Peru

Dr Iain Kirkwood (TIAR and Director Australian Potato Research Program), Clinton Zerella (SA Grower) and Matthew Wickham (AUSVEG, Market Development Manager) recently returned from the second International Levy Boards meeting held in Lima, Peru. Participants from the UK, NZ, Canada, South Africa and the US openly discussed issues and concerns relating to R&D and marketing. The conference was an opportunity to continue dialogue, exchange information and investigate possible joint ventures between comparable international potato organisations. Matthew Wickham provides a report from the marketing side.

The sprawling city of Lima enclosed by the infamous Peruvian Andes of South America is the site of the Centro Internacional de la Papa (CIP), or the International Potato Centre for those whose Spanish is as questionable as mine. CIP is an international organisation that aims to counter food production shortages in developing countries through advancement in scientific research. CIP's work with potatoes on improving yields, boosting nutritional value and water efficiency made it a fitting and welcoming venue for the second International Levy Boards meeting.

The gathering is an assembly of organisations that work under a levy system to benefit their respective potato industries through R&D and marketing. As our industry does not have a marketing levy like other attending countries, our participation was a chance to gather information and acquire new ideas on how to close this gap. These discussions are invaluable as they generate a multitude of fresh ideas and initiatives on how to tackle key issues and build a more resilient industry. Clinton Zerella, a member of the Fresh Potato Industry Advisory Committee, made the point that 'Australia needs to keep in touch on where the world is heading as the other international potato organisations are making big inroads into increasing or stabilising potato consumption through the power of marketing.'

The previous meeting of the group held in South Africa generated discussion on the challenges and the key opportunities each country deemed significant. It was clear from the outset that organisations were facing common difficulties but implementing different combative solutions. Not a great deal has changed in the last 12 months, but participants were more determined than ever to secure a productive outcome from the conference that would result in sharing resources to reach collective goals.

Encouragingly, the UK, South Africa and the USA reported an increase in consumption through marketing and promotional activities. US Potatoes experienced a major negative impact from the launch of the Atkins diet, however they have recovered and consumption is on the rise. The British Potato Council (BPC), also affected by the rise of the Atkins diet, is targeting schools and young families with a strong public relations (PR) campaign that has stimulated growth. In fact, all participants, excluding Canada and



CENTRO INTERNACIONAL DE LA PAPA

Australia, strongly rely on PR to promote a healthy potato message.

The international organisations have made a strong move into social marketing in line with the United Nations International Year of the Potato theme, donating a small contribution to selected charities from potato sales. While each country works on a different budget, it was clear that even a modest fund can generate beneficial publicity.

We spoke about changing the consumer perception that potatoes take too long to prepare and initiatives on how to change this belief. US Potatoes is tackling the issue by promoting short educational videos on microwave cooking and experimenting with online advertising and blogs to communicate to a younger generation.

Carbon footprint, food safety and labour shortages were mentioned as major issues facing the Canadian potato industry, while worryingly for South Africa, they face power supply interruptions that have even forced mining operations to close – maybe Australia isn't that bad after all!

The BPC has setup a great online initiative that allows growers to add their own branding on common industry marketing collateral such as posters and recipe cards, and order them through a dedicated website. This interactive enterprise is a fantastic example of the industry taking ownership and playing their part in promoting potatoes.

Some of the most important outcomes from the meeting were the suggested joint ventures between the organisations, potentially rendering opportunities for us all to work together and develop tools that will strengthen our capabilities. Discussion centred on sharing resources, building a nutritional database, understanding acrylamide and its impact and developing tools to promote common messages to a wider audience. Also considered was the possible investigation into a documented stable of experts who would assist in providing a clear and consistent message on the superior qualities of potatoes.

Australia is behind the eight-ball. Fresh potato sales are falling and no national preventative measures exist. Our longevity depends on the industry uniting and communicating with consumers. International organisations are generating strong growth and success through potato promotion. It is time for Australia to join the field.





# PROFILE Nic Kentish



## Stepping outside the square

**Nic Kentish reveals his secret to reviving a favourite variety and other battle strategies. Gretel Sneath reports.**

When second-generation potato grower Malcolm Kentish retired two years ago, he gave his successors some heartfelt advice. Handing the reins of his property 'Greenbanks' in South Australia's Limestone Coast, to his son Nic and daughter-in-law Alexi, he advised them to "never grow another potato".

They were harsh words fuelled by a belief that the fresh potato industry is being stifled by two major supermarkets, creating an alarming shift in industry dynamics which is giving growers the raw end of the deal.

After working alongside his father for a decade, Nic readily agreed.

"It used to be quite a free market in the 60's, 70's and 80's with numerous players, but acquisition and attrition has resulted in very few players who boast a massive amount of strength," Nic said.

But Nic also knew his father well enough to realise that he was trying to fuel the fire in his belly. His reaction: to continue the family business – albeit with major restructuring, a significant change of focus...and a bold leap of faith.

The 2000-hectare operation which had been established in 1930 by Nic's grandfather Bill Kentish, was producing 6000 tonnes of Pontiac potatoes per year. Nic and Alexi effectively slashed it in half by selling off land and machinery, relinquishing leases, and, regrettably, retrenching a number of staff. As if that wasn't radical enough, the couple then converted to organics.

"It was a scary leap, but we did a lot of planning and training – particularly in the areas of soil biology, composting and natural fertilisers, and it was hugely empowering to gain that knowledge," Nic said.

"Some people have been in agriculture for 40 years, but have had one year's experience 40 times, repeating over and over again what they did last year, but with natural farming systems, the change is so exciting because we're learning things like soil husbandry and shepherding livestock that our forefathers already knew."

900 hectares of the remaining land at 'Greenbanks' has been converted to grazing, and the other 100 hectares has been planted with potatoes, pumpkins, onions, and carrots. The prized Pontiacs are still there, but the crop is a far cry from previous Kentish blockbusters.

### GROWER INFORMATION

Producers: **Nic and Alexi Kentish**

Property: **Greenbanks**

Location: **Limestone Coast, South Australia**

Size: **1000 hectares**

Crops: **Potatoes, pumpkins, onions, carrots**

Other activity: **Grazing**

Soil Type: **Sandy Loam**

"Red potatoes account for 10 per cent of marketable potatoes and can be tricky to grow, so we decided that in a niche market of organics we didn't need to be hamstrung by small turnover of product. Now growing predominantly Nicola, I have to say that the quality surprises even we dyed-in-the-wool red potato fans," Nic said.

Their storage life is exceptional, with zero breakdown for six months or more. They're also moist, sweet and light without being watery, sugary or floury.

"Who would have thought that we could get that many qualities in a regular old table potato? If I were a chef, I'd go nuts for this."

Keeping a close eye from his seaside retirement base, Malcolm Kentish was nervous that Nic and Alexi wouldn't get adequate yields with organic methods, and so far, he's been right. Current potato production levels equate to approximately 300 tonnes off 10 hectares.

"That's not a very good yield, but I'm not entirely dissatisfied with it because the skin quality and potato flavour is outstanding with the Nicolas, and with the Pontiacs, the flavour is awesome and we can greatly improve on the skin...It's only early days, and I know where we went wrong," Nic said.

"I missed a couple of key cultivations – particularly at breakthrough time – and hand-weeding a crop is a very expensive alternative to good timing."

Nic recounts when he had nine people lying on stretchers on a carry-all behind a tractor pulling weeds at the rate of 180 metres per hour, and says the entire experience was a far cry from 'rescue remedy' farming.

"The process of soil husbandry has been homogenised in the twentieth century because we didn't need to fully understand it – the answer mostly came in a drum (with a free drizabone)," he said.

"This is going back to the dark ages – it's really archaic, yet I'm confident that we will eventually get the same yield as conventional methods."

Nic and Alexi believe that organics can be "frustratingly codified" and that biodynamics take organics to a truly sustainable level.

"I never thought I would be using manure buried on a full moon spiced up with some biodynamic preparations – it just didn't fit the conventional model; how could it work? But these fertilisers are going out at incredibly light rates, using just a catalyst amount to fire up our bugs," Nic said.

**"...what and how you farm must excite you... and what you do and change gives you results way into the future – it's not a sprint; it's a marathon."**



"The trick is keeping them in balance, and biology in the soil is like crack SAS troops – the chemistry of the soil is still important, because it's the supply to those troops."

While the war continues between growers and the conglomerates, the Kentish family has officially declared victory.

"Dad took the 'Kentish Potatoes' label as far as he possibly could in his marketing thrust, and I believe that nobody could have done a better job of the company profile than he did, yet it's a bit like whirling your hand in a bucket in that the water soon goes smooth

when you take it out...nobody missed us in the market – nor did they miss the Pontiac potatoes we were growing," Nic reflects.

The new generation of Kentish farmers is more committed to agriculture than ever

before – largely because of that leap of faith and because the results are not as instant as those of rapid input farming.

"In a nutshell, what and how you farm must excite you...the family farm and its workforce can be vibrant and rock solid if you choose to make them that way, and what you do and change gives you results way into the future – it's not a sprint; it's a marathon," Nic said.

"Our real dream is to be able to grow the 'Grange Hermitage' of vegetables, and we know it's possible to do so – it's just that we have to get our timing and our heads in the right space."



## Farmers benefit when city-slickers stay

Primary sector producers have the opportunity to promote modern farming practices to, and make ground-breaking connections with, members of the metropolitan sector at the second annual Farm Day on 25 and 26 May.

The initiative involves farmers hosting metropolitan families at their farming operations over two days enabling mutual learning experiences.

Research results of Farm Day 2007 showed that the event helped form and bolster positive urban perceptions about Australia's primary industry and the challenges it faces. Guest families were able to learn about the technologies used in Australian farming, and appreciate the water resource issues that farmers face. The survey also showed that guests came away with a better understanding of the debilitating effects of the drought on land management.

Primary producers were able to learn more about the lifestyles of their city counter-parts and address some of their concerns about farming practices and other aspects of the primary industry.

In an era in which food miles, carbon foot printing and other issues are becoming important considerations for consumers, Farm Day presents the ideal platform on which farm operators can engage with some of their customers.

Farmers need to register for the program in order to be 'match-made' with potential prospective guest families.

Call 1300 36 70 36 or visit [www.farmday.com.au](http://www.farmday.com.au)

## Generation Next

Australia's youths are aware and concerned about the impact that the exodus of their generation is having on the future of our rural primary industries and communities. The issue came up as one of the high agenda topics at the weekend's Youth Summit in Canberra when around 20 of the nation's brightest and most talented young people voiced their concerns about the challenges facing rural Australia.

Among the thinkers was Felicity Harris, a 24-year old cattle farmer from Queensland, determined to find ways to help young people embrace their rural and regional heritage. Felicity told the ABC "Often people think that living in a rural area is really boring, that there's nothing to do - there are no activities - there's no fun and that's not really true and so I think there needs to be a perception change about what really happens in rural communities and how great it can be."

Recent figures showing that there are less than 10,000 farmers between the ages of 18 and 30 in Australia, and more than 30,000 aged 65 and over, have amplified Felicity's concerns about intergenerational change in the rural sector. However, Felicity and the other youth representatives are keen to find solutions to the growing labour and skills shortage in the primary industries by also focussing on how climate change shapes the area.

The ideas from the Youth Summit will be considered along with other proposals at the 2020 Summit in Canberra, when more representatives from across the nation meet to begin planning how to advance Australia's interests over the next decade.



## Visionary's wide reach remembered

The passing of great thinker and scientist, Professor Peter Cullen on March 13 has brought an outpour of tributes from his peers in the scientific, agricultural, education, political and environmental sectors, and the general public.

Professor Cullen spearheaded several campaigns for better land and water resource management, and was hailed for taking the lead in the push for long-term sustainability practices, particularly in relation to the Murray River.

Peter Cullen is especially remembered for his commitment to establishing beneficial communication avenues between researchers and growers, students, resource agencies and others who used the research findings. For Professor Cullen, good communication was at the heart of finding solutions for climate, land and scarce water challenges. His dedication to issues affecting primary industries was evident at the 2007 National Vegetable Industry Conference held in Sydney, at which Professor Cullen was a key note speaker.

According to the President of the Federation of Australian Scientific and Technological Societies, Ken Baldwin, "He exemplified the connection between good science and community well being."

## AUSVEG Board Update

The Board is responsible for the future direction and operation of AUSVEG for the benefit of the broader vegetable industry

### Office Bearers

<b>Chairman</b>	David Anderson, Potato Growers Association of WA
<b>Vice Chairman</b>	Jeff McSpedden, New South Wales Farmers Association

### Elected Directors

<b>Board Director</b>	Steven Page, South Australian Farmers Federation
<b>Board Director</b>	John Mundy, South Australian Farmers Federation
<b>Board Director</b>	Jim Trandos, vegetablesWA
<b>Board Director</b>	Luis Gazzola, Vegetable Growers Association of Victoria
<b>Board Director</b>	Ian Young, Tasmanian Farmers and Graziers Association
<b>Board Director</b>	Phillip Beswick, Tasmanian Farmers and Graziers Association
<b>Board Director</b>	Des Jennings, Victorian Potato Growers Council
<b>Board Director</b>	Geoff Moar, New South Wales Farmers Association
<b>Board Director</b>	John Bishop, Growcom
<b>Board Director</b>	John Brent, Growcom

## National Plan to open flood gates

The Food Bowl Modernisation Project is set to begin soon in Victoria when the Murray-Darling Basin Plan is formalised in May.

According to Tim Holding, Victoria's Minister for Water, the project is one of the biggest water works ever undertaken in Victoria and will consolidate the area's position as one of Australia's foremost agricultural regions.

The Food Bowl is expected to save an anticipated 800 billion litres of water annually and is estimated to jointly cost the Australian Government, Victorian Government, Melbourne Water and Goulburn-Murray Water around \$2 billion.

The first stage includes the installation of over 1000 water meters and 1000 flume gates across Northern Victoria, to replace the existing manually-operated system. The Food Bowl Modernisation Project should aid the recovery of more than 200 billion litres of water in keeping with the Murray-Darling Basin Plan.

Other aims under the upgrade scheme include Victoria retaining its water management system until 2019, and ongoing consultation between the state and federal governments on the environmental management and structure of the Murray-Darling Basin Authority.

## On the record

Following the Herald Sun's article on a link between staple starches and diseases, AUSVEG responded with a letter published by the newspaper on Tuesday 18 March 2008.

A lack of understanding about the glycemic index has led to mistaken perceptions that starchy vegetables should be restricted in our diets ("Disease fear in GI food", March 11, 2008)

Given the prevalence of obesity in Australia, health and nutrition experts agree that greater attention should be given to consuming foods that are low in calories and high in nutrient density.

GI as a measure of determining food choices does not reflect the nutrient density of a food. Potatoes are a nutrient-rich food, fat and cholesterol-free, low in salt, high in fibre and a good source of Vitamin C.

Many nutrient-poor, high energy foods such as chocolate or croissants are low GI.

Additionally, GI does not include other nutrients added to the meal. Eating a potato with accompanying food often lowers the GI value substantially.

The dietary characteristics most strongly associated with poor health are high fat, particularly saturated fat, and low fibre.

Since potato is a good source of fibre and low in fat, it is perfect for a healthy, balanced diet and assists in the prevention and management of chronic disease.





## Industry Advisory Committees – the deciding factor

**Members of the Fresh and Processed Potatoes Industry Advisory Committees (IAC) met in March to recommend to HAL (Horticulture Australia) where the levy needs to be invested in the 2008-09 financial year. The Fresh IAC consists of growers represented from each state of Australia and the Processed Potato IAC consists of growers and potato processing companies. AUSVEG Communications Coordinator, Toni Davies, reports.**

IACs meet in March and September each year. The meeting in September is to plan what R&D is needed in the potato industry. This plan is the basis for an industry call for project submissions from service providers to meet this need. The March meeting examines project submissions and the IAC recommend to HAL which projects are needed.

As well as planning the levy investment, meetings also provide an opportunity for researchers to showcase their work, and enable two way communications between all parties. This year, the IAC were fortunate to have several guest speakers including George Lazarovits, Plant Pathologist from Agriculture and Agri-food Canada, and Dr Rob Forage, Program Director of the Australian Sheep Genomics program.

Dr Forage presented an interesting overview of the work being done on sheep genomics funded by the Australian Wool Industry, Meat and Livestock Australia and 10 leading research organisations. The research model showed the IAC how funding is sourced and how the program established national and international collaborations to provide support and credibility.

Following on from the success of the Processed Potato Research Program (PPR&D) stage one, planning for stage two has commenced. Pyksis, a specialist service provider has been appointed to conduct a scoping study. Pyksis is seeking input and suggestions from all parties that work in conjunction with the research program. Their findings will be presented to the IAC who will assess how best to establish the framework for stage two, which will be known as the Australian Potato Research Program (APRP).

Fresh IAC member, Clinton Zerella presented a report on his trip to Peru to attend the International Levy Payers meeting that was held to coincide with the International Year of the Potato. Clinton highlighted what other countries are working on and the methods they are using to increase the consumption of potatoes.

South Africa had increased potato consumption, Canada is in the process of introducing a program to market and promote potatoes, the USA is tackling the impending issue of acrylamide, while in the UK, the British Potato Council are currently changing their business model and structure. A feature article on the visit to Peru is included in this edition of *Potatoes Australia*.

## Fresh Potato IAC profiles

**The Fresh Potato IAC Members bring their potato-growing experiences and unique perspectives to their committee roles.**



### Clinton Zerella, SA

Clinton Zerella will always remember his father telling him: "It's good to see they have invented a machine to dig the crop, wash the crop, package the crop. Hopefully they remember to invent the machine that eats the crop as well." That piece of business acumen was passed down from Clinton's grandfather, Ercole, who had established Zerella Holdings in 1936. By the time Clinton had finished Year 11 and joined the family initiative, the company had expanded considerably in South Australia. These days he is the Director and Shareholder of Zerella Holdings Pty Ltd, now a vertically integrated company. However, Clinton has never forgotten the heart of his grandfather's message. "I believe the philosophy is as relevant today as it was in the 1960s when the industry started going through some of its biggest changes."



### Des Jennings, VIC

Des is a seed grower with a 250 hectare property in Thorpedale and he also farms cattle and sheep. Des has grown up with farming in his veins and is actively involved in many aspects of the industry, including being Chairman of the Victorian Potato Council. He was appointed to the AUSVEG Board in 2004, and is also member of a project to return variety trials to Thorpdale. Over the years Des has seen a decline in the level of self-determination within the grower community. He therefore champions a unitary approach to the industry with an emphasis on collaboration and knowledge-sharing practices.



### David Anderson, WA

David lives in Baldivis, Western Australia, where his family has grown potatoes and other vegetables for the last 50 years. He believes the biggest challenges facing the industry are water security, food safety and the current public focus on health and obesity. These issues undermine the foundations of a healthy, sustainable industry and David believes that they can best be addressed with a concerted and co-operative approach. He is also Chairman of vegetablesWA and is on the State Executive of the Potato Growers Association. David was appointed to the AUSVEG Board in 2005 and was recently appointed Chairman of AUSVEG.



### Michael Jess, QLD

Michael started working at age 15 on his family farm in Strathpine, QLD where his father and uncles grew, washed and packed Sebago potatoes. These days he runs a property covering over 5000 acres of land in Elimbah and Esk. He has cattle and also grows corn, potatoes, peanuts and pumpkin. Michael, who was an AUSVEG board member until last year, was delighted when his two sons joined his farming operations recently. "One is 18 and the other 21, and I want them to get to enjoy bright futures in a strong industry," he said.



### Neville Beaumont, NSW

Neville's farming operation, Beaumont's Produce, has been around since the 1980s. The 600 acre property in Dorrigo, NSW produces Sebago, Kipfler and Atlantic potatoes, but Neville's favourite spud is without a doubt, the Kipfler. He's as passionate about the multi-cooking uses of that variety as he is about its taste. Therein is Neville's perspective on fresh potatoes and the challenges facing the industry. "Too many people are trying to grow potatoes for the big crop yields rather than for the flavour. They should be concentrating on the qualities of the potato such as its taste and its goodness over rival crops like rice," he said.



### Kevin Clayton-Greene, TAS

Kevin researches deciduous fruit at the Victorian Department of Primary Industries and is also General Manager, Operations at Harvest Moon where he has worked since 1993. Harvest Moon introduced PBR varieties from Europe resulting in the increase of more varieties in Australia. Kevin is passionate about the vital role of potatoes, and he would like to see people educated about the advantages of spuds as a crop and a nutritional food source. A strategy that focuses on benefit is essential according to Kevin. "Marketing needs to concentrate on fitness for purpose," he said.



# APRP Researchers

## At the front line

Katie Fisher gives an insight into the work of Dr Brendan Rodoni



The enthusiasm and passion Senior Plant Virologist, Dr Brendan Rodoni has for his work is the first thing that strikes you on meeting him.

“The thrill of researching and diagnosing a new virus is great,” Brendan said.

“The challenge is in taking a problem (a virus) that you can't see, following the research through to a solution such as a resistant potato variety, but not knowing where it will lead.

“The results can be groundbreaking and open new doors for the industry, such as new export markets.”

At 43 years of age Brendan, who is based at the Department of Primary Industries (DPI) in Victoria, continues to get that “buzz” after identifying or diagnosing new plant viruses.

His research has assisted many fruit and vegetable sectors and helped in the diagnosis and control of exotic diseases that pose serious threats to viticulture, strawberries, vegetables, summer fruit and apple/pear industries. Such viruses have included Sharka and Potato Spindle Tuber Viroid.

In today's globally competitive market, accurately and properly identifying exotic plant pests is paramount for an industry to remain viable.

In past work, Brendan has been a key leader in developing nationally accepted diagnostic protocols which, according to his peers, have enhanced the development of internationally recognised diagnostic systems for Australia.

But for Brendan, making an accurate and rapid diagnosis of serious pests and diseases is all in a days work. Brendan's latest challenge is in the potato field where he and his fellow researchers, including DPI Potato Plant Breeder, Tony Slater, are working to identify and then breed resistant potato varieties to the devastating Tomato Spotted Wilt Virus (TSWV) and the Potato Virus Y (PVY).

“The TSWV is a massive issue for potato growers in certain areas of south-eastern Australia,” Brendan said.

“To be able to establish resistant varieties would be a great outcome for the industry as the virus is extremely hard to control.”

Brendan said PVY was still in its infancy within the Australian potato industry, which gives scientists a good opportunity to “work hard at containing it and identifying resistant varieties.”

“PVY is... very virulent... and hard to eradicate,” he said. “Its alternate hosts include several common weeds and it is spread by aphids.

“But by working with the Potato Seed Certification Schemes at this early stage of the PVY's life we can hopefully make it a containable problem for the industry.



## Fresh potato marketing development

Market development for the fresh potato industry took another significant step forward when the Marketing Plan was endorsed by the Fresh Potato Industry Advisory Committee (IAC). The wider industry will now have the opportunity to comment as the plan is broadly communicated over the next few months.

Matthew Wickham, Market Development Manager, reports.

## Call to Support Potato Promotion

A Marketing Plan is an interesting document. It takes a measure of the current industry position, sets objectives of where we would like to be and lists strategies of how we're going to get there. It's a document that changes over time and is continuously refined to match the altering market, environment and consumer trends. However, before any alterations are made and the plan gets put into action, the industry still needs to address some key issues: support, fragmentation and another 'f' word, funding.

Industry support for a potato promotional campaign is vital – if growers don't recognise the value in fighting dwindling sales, increased competition and misleading media attention, then a generic marketing campaign won't work. The marketing strategy aims to educate, entertain and inspire. Educate consumers of the nutritional benefits, entertain families and couples by building interest and affinity with potatoes and inspire users to explore new and different applications for fresh potatoes. It is a big step for the industry to take, but we are not the first to do it and there is proof that it works. It is a gap that needs filling that will only be achieved when growers unite and work together.

There is now an opportunity for industry to show support and overcome the fragmentation that is hindering generic fresh potato marketing and promotion. I would like to invite any interested grower to contact the AUSVEG office for a copy of the marketing plan and if you support the plan, register your support. Through public relations, information kits, in-store testing and promotion, modern recipe books, health and food professional endorsement, website development, nutritional analysis, brand creation and consumer research the industry will be able to encourage potato consumption and counteract any negative publicity.

Marketing and promotion is not free. Without proper funding even the best plans are futile. There are several funding mechanisms that could initiate promotional activities, but there is only one that gives the entire industry total control. A statutory promotional levy is the best option. Other funding options such as grants, sponsorships, contribution schemes and corporate partnerships should be part of the overall funding, but to avoid frustrating restrictions, confusion of ownership and unreliable monetary supply, an industry levy presents the most feasible choice. Sharing a levy across the industry means that for a small contribution from each grower, a workable promotional budget can be raised.

To show your support for the generic promotion of potatoes to consumers, please contact the AUSVEG office on (03) 9544 8098, or email [info@ausveg.com.au](mailto:info@ausveg.com.au).

PT06022

### The Bottom Line

- Industry-wide support for the Marketing Plan is crucial for it to work.
- The Marketing Plan will raise the profile of potatoes through strategies that educate, entertain and inspire.
- A statutory promotional levy is the ideal way to fund marketing and promotion.

Further information can be found at [www.ausveg.com.au/levy-payers/login.cfm](http://www.ausveg.com.au/levy-payers/login.cfm)



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James Kirkham  
measures study samples

## The 'N-shock' edge for seeds

### Dan McGuire reports on the progress of research on Nitrogen nutrients in potato seed soil.

Imagine a potato crop that performs like a finely-tuned machine. The seeds germinate precisely on schedule, whole fields emerging at almost the same time as the date marked on your calendar. The plants grow at the same rate and reach maturity together, allowing for quicker and more economical harvesting. Each plant produces a similar number of tubers and the potatoes themselves are roughly the same size so that sorting, storing and processing are straightforward. And the miracle seed responsible for it all is cheaper than what you're currently buying.

It might sound like the stuff of science fiction – and at the moment it still is – but that's the direction some exciting research in Tasmania is heading.

*The Increasing G1 Potato Seed Yields* project, a collaboration between the University of Tasmania and seed company Agronico Technology, aims to boost tuber numbers and consistency in G1 seed crops by applying techniques already successfully used in the production of minitubers – small seed-potato tubers grown hydroponically.

"Our aim is to get seed that is very uniform in the way it responds," said Agronico researcher Dr James Hill. "Uniformity in every generation – it's better for the farmer, better for the factory, better for storage, better for everyone."

Dr Philip Brown, Regional Deputy Director of Agricultural Research at the University of Tasmania, said the project was based on observations about the effect of rapid changes in the supply of nutrients, especially nitrogen, on potatoes. By understanding why potatoes behave the way they do, new strategies can hopefully be developed to manipulate their growth at critical stages of development.

"The concept was to see if some of the techniques used in hydroponic minituber production systems to produce large numbers of tubers per plant could be translated into treatments in a field situation to boost tuber numbers in G1 seed crops," Dr Brown said. "This would significantly increase the multiplication rate in seed production."

Dr Brown said various researchers over the years had reported that a lack of nitrogen in the early stages of crop growth resulted in fewer tubers being produced. However, too much nitrogen in the later stages was even worse, with tuberisation delayed or withheld altogether.

Using hydroponics systems, scientists found they could control the results with some precision. Constantly supplying the young



Young researchers at Nitrogen trials in Moina, Tasmania

potato plants with nitrogen delayed tuberisation but when the nitrogen tap was turned off, tuberisation occurred.

Of course, translating those results into a real-world, on-farm situation posed numerous challenges. Supplying nutrients to soil is easy enough, but how do you suddenly remove them?

"Rapid changes in nutrient supply to plants are harder to impose in soil," said Dr Brown. "We need to understand nutrient movement processes if we are to adapt the hydroponic techniques to the field."

One of Dr Brown's PHD students, James Kirkham, took up the challenge with a commitment to the three-year trial funded by Agronico and Horticulture Australia Limited. Its emphasis was nitrate-leaching behaviour in various soils, particularly the rich Red Ferrosol in which the bulk of Tasmania's potatoes are grown.

James said the trial was conducted on the popular Bintje potato plants, using minitubers because they commonly yielded low tuber numbers per plant.

"Minitubers are grown in the field to produce the first of a number of seed potato generations required to provide sufficient seed quantities economically for commercial production," he said. "A small increase in tuber number, or improvements in tuber uniformity, at the first generation therefore has the potential to significantly increase seed volume and quality by the time seed is sold for commercial potato production."

The study began in the laboratory by examining what application of water was needed to quickly leach nitrates from contrasting soils.

"In all soils tested, nitrate levels could be rapidly reduced by a factor of 10 through various leaching applications to soil columns," James Kirkham said.

Experiments then moved to the glasshouse where tubers grown in potted Red Ferrosol topsoil and washed sand/perlite media were given the "N-shock" irrigation treatment. Within two weeks of beginning the treatment the proportion of larger tubers on each plant in the Red Ferrosol soil had soared.

"Average tuber mass in the leaching treatment was double the mass of tubers receiving constant nitrate application when plants were harvested approximately 14 days after tuberization," James said.

He said the nitrate manipulation appeared to reduce resorption of tubers after tuberisation. There was a dramatic fall in the proportion of tubers less than one gram while at the same time the proportion of bigger tubers increased.

James' theory is that the nitrogen leaving the soil may have changed the carbohydrate-partitioning mechanisms of the plant, resulting in more resources being sent to the tubers rather than the parts of the plant above the ground.

"So reducing nitrate concentration in the soil appears to be a technique that can increase tuber mass in the period after tuberisation, while also potentially reducing the number of tubers that are resorbed by the potato plant closer to maturity," he said.

With the project in its third and final year, James Kirkham said future research probably would involve fine-tuning in the glasshouse and in the field by a new group of student researchers.

Dr Brown says the exciting possibilities emerging from the project "highlight the need for young, smart, well-trained people to be given opportunities to contribute to the industry".

Potato growers, eagerly waiting for that perfect seed, must surely agree.

PT06011

#### The Bottom Line

- Research aims to optimise production by enhancing seed characteristics.
- Adequate levels of nitrogen at early stages of crop is essential to good yields.
- N-shock project shows the benefits of good research program with well-trained people.

Further information can be found at  
[www.ausveg.com.au/levy-payers/login.cfm](http://www.ausveg.com.au/levy-payers/login.cfm)







## The 2008 Seed Potato Conference

The third biennial Seed Potato Conference runs from 21 - 22 July in Marysville. The conference promises to be a bumper opportunity to learn the latest industry news and research findings, form valuable professional connections and pay tribute to the International Year of the Potato.

Participants will hear key notes and presentations from local and international speakers about the future of the industry, Genetic Modification, AUSVEG and the potato levy, PCN studies and much more, in conjunction with celebrating 70 years of the Seed Certification Scheme.

Furthermore, this year, partners of participants have been invited to attend. The partner programme highlights include the Industry Awards and abundant sightseeing and relaxation opportunities.

During seminar breaks and at the end of each day's round of talks, there's a chance for social networking in the fabulous surrounds of the Marysville Country House.

Adie Kriesl, Seed Potato Victoria's Executive Officer, says that places are filling fast and an estimated 200 plus participants with their partners are expected.

For further information and to register for the event, please contact Adie Kriesl, SPV Executive Officer and Conference Secretariat.

Phone: 0409 510 089  
 Fax: (03) 5633 2745  
 Email: spv@dcsi.net.au  
 Website: www.spv.org.au



## Revitalising Australia's primary industries

### It's time to rethink the modernisation of rural Australia with a unitary approach to funding and development, says AUSVEG Economic Policy and Research Manager, Ian James.

Not many people can recall the sense of optimism which accompanied the Snowy River initiative and Murray River irrigation scheme announcements. Those infrastructure projects, along with the development of roads, rail and ports, were transformative and enhancing to Australia's international standing as a progressive competitor. Many of these projects had solid government support and investment and provided the foundation for Australia as a great agriculture nation.

However, throughout the last decade and a half public infrastructure has suffered from insufficient expenditure. Attempts were made to offload some of the traditional responsibilities from government to the private sector. Some of these proved successful, others less so.

This has impacted the vision and planning that had been at the core of Australia's early development. Australians have experienced deprivations with some of the, most basic systems and facilities such as public transport, education, power and health.

For rural Australians, the reduced investment has eroded the stability of Australia's agricultural production sector and its capacity to keep up in the global market. Primary producers have had to cope with outdated irrigation systems, unreliable transport, congested ports, a shortage of skilled labour, and expensive and unreliable energy inputs.

This has come about because the trend in the 1990's and early years of this century has swung toward economic rationalism and infrastructure projects have been subjected to cost-cutting measures. User pays has become the prevalent philosophy. Governments at all levels have sought to prove their credentials by running budget surpluses and eschewing the undertaking of debt especially in relation to the financing of visionary projects.

Fortunately, in the past few years there has been a realisation that without significant investment in infrastructure upgrades, Australia's capacity to keep up in the international market is in jeopardy. Investment has begun to flow back into public capital projects gradually. Federal and state governments have

begun to focus on a number of infrastructure upgrades, often in partnership with the private sector. Even so, Australia is behind the eight ball and it cannot afford to remain there. Incurring debt to undertake infrastructure upgrades can be good policy—providing the investments undertaken lead to long-term benefits for the economy.

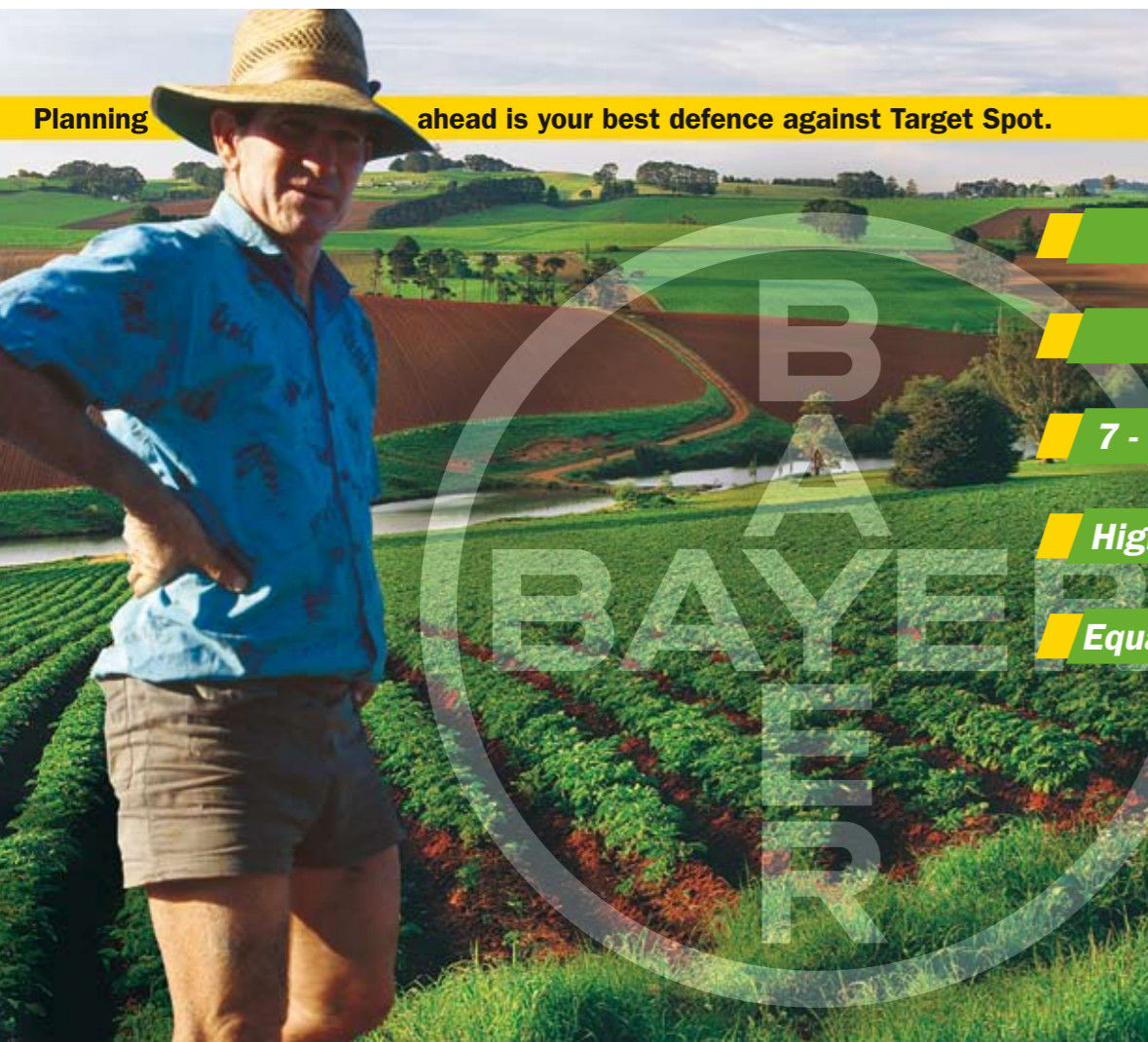
Funding remains a challenge, however, and it is unlikely that we will ever again see governments pick up the majority of costs associated with infrastructure upgrades. Some form of user pay will be incorporated. However, infrastructure projects are now more difficult and more costly to complete, and opponents of these projects are more vocal and willing to use the legal system to either block or delay proceedings. There are risks and costs associated with any infrastructure project, but inactivity can be just as dangerous. For growers, some arguments against infrastructure upgrades are particularly frustrating. Many issues are about self-interest rather than the benefit of the wider community. Everyone seems to oppose one another. There are continuous conflicting approaches at all levels across the nation—governmental, organisational, individual.

Trying to get the balance right so that these essential upgrades are undertaken without promulgating a divisive culture or causing more financial hardship, is key.

How do we solve this problem? We need to plot a course to ensure that infrastructure is maintained. A strategy involving regular expenditure on infrastructure upgrades over a long-time span is required. With clear forward planning and goals, the nation will be able to compete in a globalised world. The initiative also needs to be done as a collaborative, co-operative and consultative process. The Australian Government's 2020 Summit, which will be inclusive of issues impacting Australians from all walks of life, is a major step towards enhancing and progressing this great nation of ours.

### The Bottom Line

- Economic rationalism has all but crippled rural infrastructure projects.
- Australia's agriculture industry has stagnated.
- Investment in major projects is rising, but more needs to be done to reinforce Australia's reputation as a strong player in global agricultural markets.



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## Round about with rotations

By Dr Nigel Crump

Over the years many research projects in Australia and around the world have studied crop rotations in potatoes and how to get the maximum benefit from crop rotation.

Crop rotation is a tool for maximising potato yields and quality while reducing soil borne diseases, weeds and pests of potatoes such as Rhizoctonia, powdery scab, pink rot, Verticillium wilt, nematodes and some insects. However, there are no “hard and fast rules” when it comes to developing a crop rotation for potatoes. Many factors need to be considered, including the economic return of each crop in the sequence and the potential benefits.

Non-host crops in the rotation cycle can reduce the populations of pathogens and pests that attack potatoes. Increasing the rotation length, the period between potato crops, also reduces the severity of several soil borne diseases. A Canadian study clearly showed the benefit of three-year over two-year rotations for potato production.

The two-year rotation soon developed problems with Rhizoctonia and consequently tuber quality. Potato yield differences, between the two and three-year rotation, however were only evident after four years. Similarly research conducted in the USA reported that the incidence and severity of stem and stolon canker and black scurf of tubers, caused by *Rhizoctonia solani*, were reduced for most rotations because of the continuous potato control.

Potato crops following canola, barley, or sweet corn provided the lowest levels of Rhizoctonia disease and best tuber quality, whereas potato crops following red clover or soybean resulted in Rhizoctonia problems in some years. European research showed that the incidence of stem canker caused by *Rhizoctonia solani* was strongly influenced by the cropping frequency of potato and not by crops with which the potato was alternated in the rotation.

Dolf de Boer's Australian analysis has shown that a “break” from potatoes results in better yields than continuously grown potatoes. He concluded that a break period from potatoes was more important than the crop species used as the break crop.

A good crop rotation should provide an opportunity to control volunteer plants, weeds, and pests when the field is not planted to potatoes. The use of herbicides to alter pasture composition can be used to manage weed problems and reduce hosts of soilborne diseases of potatoes. This has been demonstrated in recent trials conducted as part of the Australian Potato Research Program

(APRP) in which selected herbicides applied to pasture were shown to reduce the levels of Rhizoctonia stem canker in the next potato crop. Research in this area is continuing.

When herbicides are used in the crop rotation care should be taken, particularly with the use of imidazoline and sulfonylurea herbicides in cereal crops. These are effective, long lasting herbicides, and some residual carryover can occur. Potatoes are very susceptible even to small residuals. The risk of herbicide carry-over can be reduced by following the label directions, particular in relation to the minimum “plant back period” between application and planting a sensitive crop. Contact your local reseller if you have any questions regarding the use of herbicides in the rotation.

A crop rotation may include a green manure crop. These crops are grown specifically to be incorporated in the soil while the tissue is young and growing. A green manure crop can improve soil physical conditions, increase organic matter, and reduce some soil borne diseases. The factors affecting the success of a green manure crop include the type of crop used, the amount of plant material produced and incorporated, the timing and method of incorporation.

Around the world various green manure crops are used including legumes (such as peas, clover and vetch), brassicas (mustards and rapeseed), and grasses (Sudan grass, rye corn). For best results, green manure crops have to produce high amounts of plant material for incorporation. Incorporation of large amounts (20-40t/ha fresh weight) has been shown to be effective at reducing soil borne pathogens in soil.

Green manure crops should be flailed or mowed then incorporated immediately by discing or ploughing, to thoroughly mix the green manure and accelerate decomposition. This promotes a rapid increase in bioactivity and release of nutrients and chemicals that suppress plant pathogens. Uneven incorporation is a major reason why some green manure crops have failed to deliver results. Another reason is the type of material that is incorporated; allowing green manure crops to become too mature increases the C:N ratio and also increases the amount of time required for breakdown.

An additional benefit of green manures is that they increase the microbial diversity of the soil as they decompose. Research into maximising the benefit of green manure crops is a focus of the APRP, with research being done in Australia and Canada.

### Advantages and Disadvantages of Green manures

(adapted from *Potato Health Management Second Edition, Edited by Dennis Johnson 2008*)

#### Potential advantages of growing a green manure crop in a potato rotation

- Increased supply of nutrients for uptake by subsequent crops
- Improved potato yield and quality
- Improved soil tilth and organic matter content
- Improved water infiltration and water holding capacity
- Suppression of some soil borne pathogens, nematodes and weeds
- Reduced soil erosion

#### Potential disadvantages of growing a green manure crop in a potato rotation

- Reduced income if the green manure crop replaces a “cash” rotation crop
- Additional seed, tillage and irrigation costs
- Creation of a potential weed problem if the green manure crop produces seed
- Increased pest populations if an inappropriate green manure crop is chosen

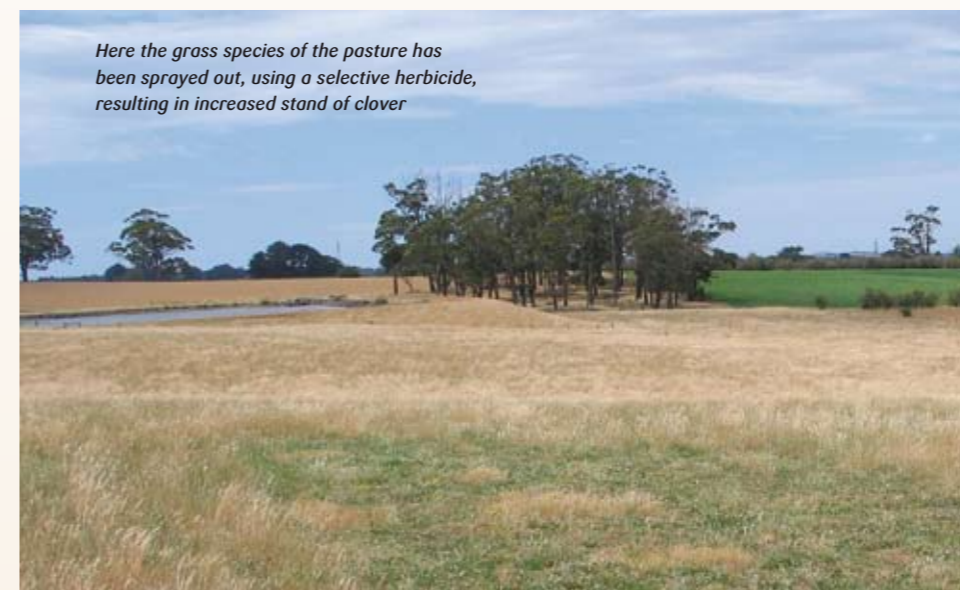
#### Factors to consider in selecting a green manure crop

- Ability of the crop to quickly produce substantial foliar growth
- Ability of the crop to fix nitrogen or take up nitrogen and other nutrients that would otherwise be lost as a result of leaching
- Compatibility with the growing environment during the period when the green manure crop will be grown (for example frost tolerance and the ability to grow in cool weather or without irrigation)
- Availability of registered pesticides (herbicides/insecticides) for the management of weeds and other pests
- Availability of seed
- Tendency to produce and shed seeds that develop into volunteer plants causing problems in a subsequent crop

A good crop rotation can help prevent or reduce soil erosion. Stubble and crop residues should be managed to improve and maintain the organic matter, soil aeration, and water filtration and retention. However, residues from previous crops can affect the availability of plant nutrients, especially nitrogen. Large amounts of crop residues high in carbon and low in nitrogen such as cereal stubble can lock up nitrogen so that it is not available to the potato crop until the residues decompose. Conversely, crop residues with a low carbon to nitrogen ration, such as green manure crops,

may release large amounts of nitrogen into the soil that are then available for the potato crop. Therefore, the management of crop residues within the rotation can have an impact on fertiliser management. The impact of crop residues on nitrogen can be overcome by incorporating residues early before planting and banding fertiliser in the row at planting.

At the end of the day, a good rotation is one that works for you and that fits your whole farm.



Here the grass species of the pasture has been sprayed out, using a selective herbicide, resulting in increased stand of clover








# Vegetable Industry Awards 08



## Finalists for the 2008 Australian Vegetable Industry Awards

Following an extensive nomination and selection process, the Australian vegetable industry has named its finalists for the 2008 awards. The potato industry has made its mark on this year's shortlist, with renowned DPI Victoria potato researcher Nigel Crump, and Victorian potato growers David and Yvonne Pike in the running.



Winners will be announced at the vegetablesWA 60th Birthday Anniversary Dinner at Burswood Entertainment Complex, Perth, on 31 May 2008. More than

450 growers and industry personnel are set to attend the gala dinner, sponsored by Landmark, which promises to be a fantastic evening.

For more information about the awards visit [www.vegetableindustryawards.com.au](http://www.vegetableindustryawards.com.au) or call AUSVEG on 03 9544 8098.

For more information about vegetablesWA's celebrations or to purchase tickets to the dinner, contact [pga-vga@vegetableswa.com.au](mailto:pga-vga@vegetableswa.com.au) or call vegetablesWA on 08 9481 0834.

### AUSVEG is pleased to announce the 2008 award sponsors:

- AUSVEG Chairman's Award
- Bayer CropScience Researcher of the Year
- Landini Grower of the Year
- Landmark Young Grower of the Year
- Brisbane Produce Market Innovative Marketing Award



### vegetablesWA and AUSVEG are pleased to acknowledge and would like to thank the following dinner sponsors:



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## AUSVEG Chairman's Award

The AUSVEG Chairman's Award recognises consistent individual contributions and commitment to the 'greater good' of the industry. These short-listed finalists have exemplified their dedication to achieving positive outcomes for the vegetable industry.



### Peter Cochrane

The Executive Member of the Vegetable Growers Association of Victoria and President of the VFF Horticulture Group has been growing vegetables for over 30 years in Devon Hills, Victoria in partnership with his wife.

Peter has given many years of continued service to the vegetable and horticulture sectors and has always been very active in a wide range of issues in order to help maintain a viable vegetable industry.

He is deeply interested in the impact of chemicals in the industry and environment and regularly attends information sessions about chemical use.



### Yvonne Fahl

Yvonne has been in the industry since 1965 and lives with her husband in Carnarvon, WA.

Many years of voluntary work led to her appointment as Executive Officer of the Carnarvon Growers Association in 2001. She is highly respected in the Vietnamese community and is committed to helping disadvantaged growers achieve acceptable standards of good management practices and quality control.

Despite retiring in late 2007, Yvonne continues to assist with grower education development and, as an APC commissioner, also runs the fruit fly baiting programme in Carnarvon.



### Jeff McSpedden

Jeff has over 35 years experience in the vegetable industry and lives south of Bathurst where he grows Brassica vegetables and sweet corn for both fresh market and processing.

As an AUSVEG Board director, AUSVEG National Environmental Committee Chair

and a NSW Farmers Association Horticultural Committee Western Rivers representative, Jeff is involved in several Agripolitical roles.

He is passionate about research and development (R&D) and environmental areas. Jeff also hosts regular field days on his property to promote the Enviroveg program and believes all growers should be involved in implementing R&D project outcomes.

## Brisbane Produce Market Innovative Marketing Award

The Innovative Marketing Award recognises individuals or businesses who, in the past three years, have created new market opportunities for vegetables or vegetable products through innovative marketing concepts. Short-listed finalists have challenged traditional perceptions of marketing and had a significant impact on the broader industry.



### Matilda Fresh Foods

In 2006, Phillip and Dianne Jauncey released a new product aimed at the gourmet niche market—consumers seeking quality and

convenience. 'Matilda Tops', pre-cut, fresh-packed broccoli and cauliflower heads, was launched with the 'Grab a Pack' campaign.

The product helped the company, Matilda Farms, expand its export business. As Australian vegetables cannot compete in overseas markets on price, Matilda Farms focuses on producing quality through best practice. Now, 60 per cent of Matilda Farms' produce is exported.

Matilda Farms implements marketing research, extensive training and consumer studies to ensure products meet or exceed customer needs. The farm is expanding into NSW to extend its growing season.

Web: [www.matildafresh.com.au](http://www.matildafresh.com.au)



### Odeum Produce Pty Ltd

Odeum Produce has worked closely with growers and major retail organisations over

the past seven years to develop innovative marketing solutions. Odeum Produce sets benchmarks for future market trends that have been followed nationwide.

In 2001, Odeum Produce introduced the peeled onion to help boost consumer confidence in a falling market. Since then, many other businesses have incorporated this processing technique into their operations.

In 2004, Odeum Produce introduced Western Australia to pre-cut pumpkins, allowing the vibrant pumpkin flesh to be displayed on-shelf. Specially developed shrink-wrap film provided sufficient breathability to extend the shelf life of the finished product to more than seven days.

Web: [www.odeum.com.au](http://www.odeum.com.au)





## Finalists for the 2008 Australian Vegetable Industry Awards

### Bayer CropScience Researcher of the Year



#### Dr Sandra McDougall

Sandra has been contributing her knowledge to the vegetable industry for over 10 years focusing on Integrated Pest Management (IPM) systems. Her research outcomes in IPM have been widely used by growers, especially in the sweet corn and lettuce industries.

She has been involved with the National Vegetable Levy funded projects since 1997 and is committed to helping growers integrate R&D outcomes in their crop operations.

Sandra's contribution to the on-farm uptake of R&D results have been exemplified in the personal assistance she has often extended to growers, her high standing among the grower community and in the demand for her knowledge at conferences nationally and internationally.

The Bayer CropScience Researcher of the Year Award acknowledges scientists with extensive portfolios in research and development (R&D), their dedication to promoting knowledge and understanding in the vegetable industry and their contribution to the reputation of Australian science internationally.



#### Dr Nigel Crump

The Plant Pathologist has a large and successful record of research projects and approaches to integrating the outcomes of these projects in the grower community. His track record can be put down to his dogged determination to make a difference to the vegetable industry.

Nigel's passion for communicating the benefits of R&D for optimising crop performance are evident in the extensive papers he has written, and in the number of industry conferences, national and international tours, discussion groups, and expos in which he is continuously involved.

His large network of contacts across all levels of industry in Australia and overseas are indicative of his enthusiasm for his work and of his ambassadorship of Australian science globally.

New Zealand vegetable industries. In particular, the collaboration has spawned the Vital Vegetables™ program, a value-added initiative that brought the benefits of high health vegetables into focus.

The team also developed the Modified Atmosphere Packaging system among other innovative projects. In addition, their work has successfully been integrated in the areas of food safety, production and postharvest practices.

Bruce and Ross's work has been published extensively and their initiatives have also attracted widespread support resulting in extended industry interest for the Vital Vegetables™ project.

#### Dr Bruce Tomkins & Dr Ross Lill

Bruce is based at DPI, Victoria, while Ross works out of CFR, North Palmerston in New Zealand and together they have achieved significant milestones for the Australian and



### Landini Grower of the Year Finalists

The Landini Grower of the Year award recognises outstanding practices across many aspects of vegetable production, including growing, environmental and staff management, and product quality. Finalists are innovators and active contributors to the broader industry.



#### Geoff & Bev Buckley

Geoff and Bev Buckley demonstrate their passion for high quality, chemical-free food by using organic methods of production on their farm on Mount Tamborine, Queensland.

Seven years ago they established the not-for-profit 'Green Shed', which provides a market for local growers and they are also heavily involved with the local producers' association.

As part of their dedication to educate growers on reducing chemical reliance, Geoff and Bev run a training program, 'Growing Healthy', teaching soil, plant and human health. They also plan to open an organic training centre and farm stay facility and write a book on healthy, sustainable growing.



#### David & Yvonne Pike

David and Yvonne Pike's company, Neerim Hi-Plains Growers, produces about 1,360 tonnes of certified seed potatoes annually. In order to maintain these high yields, they continually invest in the infrastructure

and development of their property and implement high levels of hygiene and crop management strategies.

Employees are valued and kept actively involved in all aspects of the farm. David and Yvonne delegate important roles to well-trained staff and have a quality manual in place for each aspect of the production chain.



#### Matt Hood

Matt manages over 7000 acres of vegetables across New South Wales and Queensland. His company, Rugby Farm, has been pre-packing produce for over 10 years and recently introduced pre-packaged green beans into the Australian market. As part of his research, Matt explored packaging and packing equipment internationally and continues to search for better methods.

Matt is committed to the environment and uses cover crops and crop rotation to ensure soil is protected. In August 2006, Matt conducted a tour to Europe to study new trends in marketing, production, post harvest and new product development.



#### Peter Schreurs

Peter has been in the vegetable industry for over 20 years and his company, Royston Park Vegetable Farm, is one of Australia's largest leek growers. He has adopted environmental and sustainability initiatives such as soil biology, water conservation, Integrated Pest Management, biodiversity and energy conservation.

Peter strongly encourages the use of recycled water in agriculture and was a key organiser of the successful lobby for State Government support of the recycled water project at Cranbourne, Victoria. He is also active in efficient on-farm water conservation and carbon emission reduction practices.







## Finalists for the 2008 Australian Vegetable Industry Awards

### The Landmark Young Grower of the Year



#### Rick Butler

A water-conscious outlook spurred Victorian grower Rick Butler to help design, construct and implement a water-saving commercial washing process for soft vegetables. The design received a grant from the Victorian State Government and Rick has since been invited to discuss the washer at an international conference of Salanova growers in Spain.

He has also undertaken a project to introduce new workers to the horticulture industry via a summer work program that educates selected Melbourne students about horticulture.

Rick is committed to fostering industry development and is a member of Vegetable (IAC) Production Advisory Group.

The Young Grower of the Year Award recognises excellence in business acumen and innovation in vegetable production of growers under the age of 35. Short-listed finalists have shown a high level of initiative and commitment in their approach to the vegetable industry.



#### Chris Millis

With technology increasingly driving the protected cropping industry, it pays to be an early adopter. Chris Millis, Project Manager at Flavorite Tomatoes in Victoria believes in leading by example. The company, once a father-son operation, now employs more than 100 people.

Chris's business advances include a carbon dioxide enrichment program, specialist management trolleys for high-wire crops, and a dedicated, developing on-site IPM program.

A member of the Greenhouse Advisory Board, Chris regularly commits to further education. In addition to his Bachelor of Agriculture Science, Chris has attended courses at the PTC+ in the Netherlands and Monash University. He hosts industry open days, regularly exhibits his initiatives and communicates the benefits of best practice by organising grower meetings around the state.



#### Tally Matthews

Tally Matthews runs a successful vegetable and turf production business in NSW. He is a leader in globe artichoke production for the fresh market in the Sydney basin area and has contributed to a project to develop and locally produce value-added marinated artichokes.

Tally organises local, national and overseas grower study tours, also spending time establishing the Sydney Vegetable

Demonstration Farm. Tally's enthusiasm for on-farm and hands on training sees him coordinating chemical user training and IPM workshops.

To ensure his own professional development, Tally participates in young grower tours and in a number of associations including NSW Farmers' Association and the Western Districts Royal Agricultural Society of NSW.

Tally is dedicated to promoting local produce, and is involved in exhibiting and sourcing produce and judging for a number of local shows including the Royal Agricultural Society of NSW Camden Show.



## Plant Protection Districts - Warragul makes three

**Warragul potato growers will become the third group in Victoria to operate in a declared Plant Protection District, with the introduction of biosecurity controls to protect the area's certified seed and ware potatoes against potato cyst nematode (PCN). By Andrew Henderson of the Victorian Department of Primary Industries Plant Standards Branch.**

The Warragul Plant Protection District (PPD) will come into effect during April 2008. It follows the establishment of similar districts at Portland in 2005 and Colac-Otway in 2007.

Paul Myers, President of the Gippsland seedgrowers' group, said the legislative controls were requested by the Warragul growers to protect their industry, customers and suppliers against the threat of PCN.

"The PPDs set an industry standard for maintaining pest freedom and will play an important role in providing export market access," he said.



Awareness signs will remind operators when they are entering the PPD

"It's becoming more and more important to demonstrate to trading partners that we're doing all we can to keep pests out of our production areas."

The movement of seed potatoes and equipment into the PPDs is regulated by the Victorian Department of Primary Industries' Plant Standards Branch.

David Beardsell, Principal Plant Standards Policy Officer, said the Portland and Colac-Otway PPDs had proved to be very successful to date and that Warragul is well placed to follow suit.

"The Warragul control measures will reflect those already in place for the other two PPDs and ensure the pest does not enter the district.

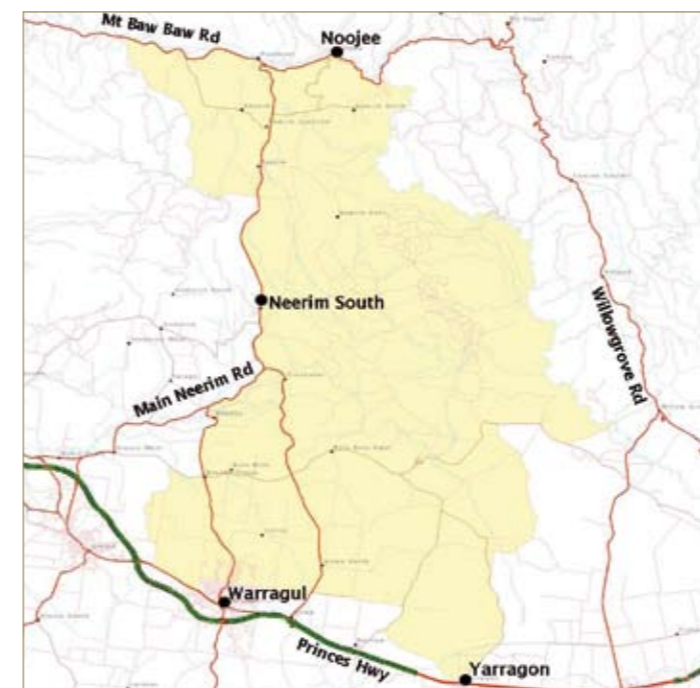
"We have conducted some evaluation and auditing of the other PPDs and so far they are operating both efficiently and beneficially," said David.

The conditions which will apply for movement into the Warragul PPD are:

1. Prior to entry into the District, all potatoes to be used as seed in the District will require PCN testing and a Plant Health Certificate issued by an authorised inspector, if not part of a State-recognised certification scheme.
2. Prior to entry into the District, used machinery associated with the cultivation of potato crops in other Districts will require a Plant Health Certificate issued by an authorised inspector certifying that the equipment has been cleaned so as to be practically free of soil and organic matter.
3. Prior to entry into the District, all used bins and bulk bags will require a Plant Health Declaration issued by the owner of the bins, to indicate that they have been cleaned so as to be practically free of soil and organic matter.

or

If a business has farmed within 10km of a PCN detection, a Plant Health Certificate issued by a DPI inspector will need to accompany each bin or bulk bag movement into the District.



The Warragul Plant Protection District

The Warragul PPD is distant from PCN-affected areas and has been tested for PCN over many years, with no detections of the pest recorded.





INTERNATIONAL YEAR OF THE POTATO 2008 • INTERNATIONAL YEAR OF THE POTATO 2008 • INTERNATIONAL YEAR OF THE POTATO 2008

# Thinking global, acting local

With careful strategies, Spudbar has re-set the standard for Victorian fast food operations, and along the way has thrown itself headlong into supporting the goals of the International Year of the Potato. Melanie Ward reports on how the successful chain is doing it.



potatoesaustralia . April 08

# acting local

As part of International Year of the Potato celebrations, baked potato specialist Spudbar is encouraging customers to get their hands dirty for a good cause. The take away business recently built a giant potato patch at Federation Square in Melbourne for a 'Dig Off' which in turn became the springboard for another Spudbar initiative, 'Buy a Spud for your Bud' day on Friday 18 April.

The intention is to promote and encourage consumption of potatoes and help growers. 'Buy a Spud for your Bud' day encourages consumers to buy baked potatoes from Spudbar, with two dollars from each spud going to help growers in the northern highlands of Vietnam.

Spudbar founder, Clay Thompson, is dedicated to supporting the potato industry and says that this event will increase the profile of the potato and assist growers. "The money raised will go towards funding the planting and management of several potato fields in Vietnam, feeding hungry people and establishing a regular stream of income for struggling growers," he said. Spudbar will supply 15 tonnes of Atlantic seed to Vietnam as well as an agronomist to assist growers that need further education to develop their business.

The idea for Spudbar began when Clay and his wife Laura decided to open a business that provided good quality and nutritious take away food in Melbourne. The first store opened in 2000 and since then the business has grown to include seven franchises. Spudbar stores attract over 1000 customers per week, use more than 35,000 spuds every month and give customers a choice of over 36 hot and cold toppings for their potatoes.

Clay credits the success of Spudbar to the "high customer loyalty due to the unprocessed, good, flavoursome and terrific value food". The customers must agree, with recent research conducted by Spudbar showing that half of their customers eat a spud at least once a week, with another 80 per cent eating at the stores at least once a month. Clay attributes this affinity to the nutritional benefits of the spuds, their contribution to five serves of vegetables per day and the unique concept of Spudbar. "We are committed to providing an honest and transparent approach to food - what you see is what you get," Clay said.

With the demand for spuds continuing to grow, Clay now receives his potatoes and other ingredients (such as corn and spring onions) from Frankie's Fresh produce. The potatoes come direct from Harvest Moon in Tasmania, with the effectiveness of this operation due to the "exceptional service and checking of produce to make sure it is of acceptable quality". The type of potato supplied varies according to season and availability but Spudbar uses a range of potatoes including Innovator, Royal Blue and Nicola.



Protecting the environment is a key factor in the design and operation of all Spudbar stores, with most of them part of the Origin green program. "Spudbar is carbon neutral, uses energy efficiently, offsets carbon emissions and uses bio-degradable packaging," said Clay, who is dedicated to environmental and sustainability practices and their integration with the Spudbar concept. The company's branding, the slogan, "Respect, Reduce, Reuse, Recycle" is not only a strong reminder for Spudbar customers to care for the environment, but also reflects the wider potato industry's commitment to these issues.

Spudbar is somewhat of a rarity in the fast food business, providing consumers with their daily intake of vegetables all in one meal. In that respect, the company is facing the food cynics front on. The nutrition vision doesn't stop there, though, as Clay hopes to add salads and smoothies to the menu as well as expand across Australia and internationally. He has started an agreement with Western Potatoes and is also excited about working alongside the organisation to open stores in Perth. It is a venture from which Clay believes the potato industry will benefit because "Western Potatoes have an incredible passion for the consumption of spuds".

Spudbar also offers a unique opportunity for people to develop their own business through franchising. "The fresh quality and nature of the food we sell means that people contact us to be part of the Spudbar extended family," Clay said.

Franchisees run their own store and use Spudbar's intellectual property and guidance by paying a royalty and marketing levy. Clay believes the Spudbar franchise is popular because it is an innovative concept, yet relatively easy to operate in terms of investment cost and cooking, with no prior food experience necessary. "The simplicity of Spudbar appeals to people and the potential for the store to grow is unlimited," he said.







## SPOTLIGHT ON:

# Potato Virus Y (PVY)

### INTERNATIONAL YEAR OF THE POTATO 2008 • INTERNATIONAL YEAR

## Why potatoes are healthy

Potatoes are fat free and low in calories, making them an ideal addition to any dieter's menu.

Potatoes are high in fibre, with fibre aiding in digestion and believed to help build resistance to diseases such as diabetes, colon cancer and heart disease.

Potatoes are cholesterol free, offering an excellent health alternative for those with high levels of cholesterol.

Potatoes are low in salt (a major factor in increased blood pressure).

Potatoes are a good source of Vitamin C, which in addition to providing valuable nutrients for the skin and healing processes, can also act as an anti-oxidant.

Potatoes are high in iron and potassium, which helps boost the body's energy and immunity levels, maintain blood pressure and transmit nerve impulses.

## IYP World Photography Contest

The Food and Agriculture Organisation (FAO) has launched Focus on Global Food, the IYP world photography contest to help boost awareness of the significance of the potato's role in developing countries and industrialized nations.

*Focus on a global food* is a collaboration of the FAO and Nikon to document, illuminate and stimulate the current issues that are central to potato growers, consumers, traders and researchers world-wide.

Photography as a powerful tool of social reform has been around for more than 130 years. It was used to capture and advance solutions for rural economic struggle occurring across America in the 1800s and during the Depression era.

Keen amateur and professional photographers around the world can submit images that best reflect themes including cultivation, biodiversity, consumption, marketing and post harvest practices. With a prize pool starting at US\$2,000 the judging panel consists of IYP experts and photography professionals from organisations such as Time Asia.



### Common name

Potato Virus Y

### Scientific name

PVY

### Background

Potato Virus Y (PVY) has been detected in potato and other solanaceous crops including tobacco and capsicum in Australia over many years. It occurs rarely in potato crops largely because of potato seed certification schemes and crop rotations.

### Strains

The most common strain in Australia is the 'O' strain, which generally does not produce disease symptoms.

Overseas experience, however, shows that all strains of PVY are capable of causing disease symptoms including mottling of leaves and Potato Tuber Necrotic Ring Spot Disease. Potato Tuber Necrotic Ring Spot virus is characterised by raised superficial irregular rings. These rings are slightly pink and can become necrotic, turning brown before sinking into the tuber and cracking the skin. There is usually a necrotic region surrounded by a brown layer beneath the affected area. The first tuber symptoms appear at harvest and develop during storage, however, whether or not the symptoms are expressed depends on the strain, the variety of potato and environmental conditions, especially high temperatures during post-harvest storage.

A new strain of PVY designated PVY<sup>NTN</sup>, was first described in Europe in 1980 and has since been found in the USA, the Middle East and Japan. It was first detected in potatoes in Victoria in May 2003.

The closely related strain, PVY<sup>N</sup> has been the subject of eradication campaigns in New Zealand and Canada. PVY<sup>N</sup> is also not known to occur in potatoes in Australia, although surveys have only recently been initiated.

The characteristics of a potato canopy infected with PVY<sup>NTN</sup> and PVY<sup>N</sup> strain are necrotic or chlorotic rings or spots. Leaves can

show a green to yellow mottling between veins and leaves are smaller. Symptoms are variable between cultivars, with some cultivars appearing to be symptomless carriers. The severity of the leaf symptoms is also determined by environmental conditions.

### Spread

PVY strains are transmitted to daughter tubers, and if these are used for seed, the resulting crop will be infected. The virus is also spread by aphids in the field and during storage, but transmission is not persistent in a wide range of aphid species. There have been unconfirmed reports of mechanical transmission, however, Canadian experiments determined that this does not occur in the field.

Infection can occur in the absence of control measures as alternate hosts and self-sown potatoes are common in potato production areas and the aphid vectors are widespread.

### Potential Impact

So far there are no indications of yield loss in potato infected with PVY. However, reports suggest that tuber size may be reduced by 50 per cent during storage, and tubers with severe necrotic lesions can have reduced market appeal. The degree of symptom development on tubers is dependent on environmental conditions and cultivar, as some cultivars are symptomless.

### Industry Measures

Although PVY strains generally do not produce severe symptoms, their spread in the Australian potato industry should be minimised by using seed only from accredited certification schemes and by controlling aphids, solanaceous weeds and self sown potatoes in crop rotations.

Crops should also be watched for leaf symptoms, and potatoes showing Potato Tuber Necrotic Ring Spot Disease should be tested, and if positive for the disease the line should not be used for seed.

Information Supplied by Brendan Rodoni,  
Victorian Department of Primary Industries



## Great spiralling spuds!

Overseas, Tornado Potatoes have taken over the taste buds of people who crave savoury over sweet stimulation, and the imagination of marketers from Korea to South Africa. The snack consists of swirls of deep fried potato on a skewer, usually seasoned with a liberal amount of cheese. In the USA where Tornado Potatoes seem to

have been around for years, the flavourings have diversified to include sprinkles of chilli (Mexican Tornadoes), garlic and so on. If the number of Google summaries about Tornado Potatoes are any indicator, the fries are considered a visual feast as well as a hit for the snack food market.

For more information on the image and snack go to :  
[www.flickr.com/photos/unsureshot/1550953055/](http://www.flickr.com/photos/unsureshot/1550953055/)



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# Chips a look at what's new in potato information and technology



## FEATURE - NITROGEN FERTILISER AND POTATO PRODUCTION

In the first of two papers examining the use of organic N sources, Rosen & Allan reviewed the scientific literature. Although it is difficult to directly compare organic and conventional fertilisers, because of the confounding effect of other factors within organic production systems, the article concluded that soil quality may be improved, but care must be taken to avoid nitrate leaching from organic fertilisers. With organic nitrogen sources there is sometimes a lack of synchrony with plant nitrogen demands, but under situations of equal nutrient supply, organic fertilisers do not appear to compromise crop yields relative to conventional fertilisers.

In the second paper (Nyiraneza & Snapp), potatoes were grown in soil that was amended with cover crops (fallow or winter rye), poultry manure (0 or 5.6 t/ha) or both, and compared with potatoes grown with conventional N fertiliser and management. Conventional N fertiliser was used to adjust treatments to ensure they all received 224 kg N/ha. Amended treatments had increased tuber yield and N uptake efficiency compared with conventional treatments. In these experiments the organic nitrogen was in apparent synchrony with plant demand, and subsoil measurements of nitrate indicated lower levels in manured than unmanured treatments.

Cambouris et al. describe a very detailed series of trials using different N rates (0-240 kg N/ha) and timing (100, 75, 50, 25 or 0% of N applied at planting with the remainder at hilling). The trials were conducted over three years at two sites, which differed in the depth to the clayey substratum. Optimal economic returns from tubers were received from rates of 167 to 239 kg N/ha.

Split applications of N gave better tuber yields than full applications at either planting or hilling, with best returns from around 50% applied at planting. Optimal N rate and timing were similar at the two sites, but there were differences in quality parameters, such as specific gravity and tuber size (e.g. more large tubers in the deeper soil), which may justify different management practices (e.g. seed piece spacing) on these soils.

In a review of the effects of nutrient management practices on tuber-specific gravity, Laboski & Kelling found that excessive rates of N and potassium, along with excessive soil levels of either nutrient, may reduce tuber solids. Also, there were decreased tuber solids if soil phosphorus levels are low and if there was a high level of salt in the fertilisers.

Shahnazari et al. examined the effects of different irrigation strategies on N in potato crops. Potato crops subjected to partial root-zone drying, had lower soil residual N content at harvest than the full irrigation treatment in both years of the trial. Compared with the full irrigation treatment, in the first year, leaf N concentration was higher under partial root-zone drying, while in the second, measurements of vegetative growth were higher for the partial root-zone drying treatments. However, yield was only maintained if the partial root-zone drying treatment was applied in the second half of the growing season.

**Exploring the benefits of organic nutrient sources for crop production and soil quality.** Rosen & Allan (2007) *Horttechnology* 17: 422-430.

**Integrated management of inorganic and organic nitrogen and efficiency in potato systems.** Nyiraneza & Snapp (2007) *Soil Science Society of America Journal* 71: 1508-1515.

**Response to added nitrogen of a continuous potato sequence as related to sand thickness over clay.** Cambouris et al. (2007) *Canadian J. Plant Science* 87: 829-839.

**Influence of fertilizer management and soil fertility on tuber specific gravity: a review.** Laboski & Kelling (2007) *American Journal of Potato Research* 84: 283-290.

**Nitrogen dynamics in the soil-plant system under deficit and partial root-zone drying irrigation strategies in potatoes.** Shahnazari et al. (2008) *European Journal of Agronomy* 28: 65-73.

## Research summaries

### LATE BLIGHT

**Impact and interaction of nitrogen and *Phytophthora infestans* as yield-limiting and yield-reducing factors in organic potato crops.** Continuing the nitrogen fertiliser theme, this paper summarises results from field trials and on-farm surveys of organic potato producers over a period of three years. Model data revealed that only 25% of the variation in yield could be explained by the influence of late blight and 48% by nitrogen availability. It was concluded that the effects of late blight on potato yield in organic farms are often over-estimated but there are interactions with N availability, which affects the growing period and the yield potential. Thus, yields of crops under high N status are more limited due to late blight. Moeller et al. (2006) *Potato Research* 49: 281-301.

**Microclimate and potential for late blight development in irrigated potato.** A model of late blight was developed for Russet Burbank potatoes over three growing seasons in central Maine, USA. A range of irrigation treatments was investigated, including sprinkler and surface drip, but these did not consistently affect microclimatic parameters associated with late blight development. It was concluded that macroclimatic conditions, such as air temperature and rainfall, were more important factors contributing to late blight. Olanya et al. (2007) *Crop Protection* 26: 1412-1421.

**Late blight - Eucablight - collating and analysing pathogenicity and resistance data on a European scale.** This paper describes the concerted European approach to collecting and analysing research data on host resistance to late blight and characterisation of *Phytophthora infestans* populations. The database currently holds information on over 15,000 isolates from 20 countries. Hansen et al. (2007) *Bulletin OEPP/EPPO Bulletin* 37: 383-390.

## STORAGE AND PROCESSING

**Temperature-induced changes in potato processing quality during storage are modulated by tuber maturity.** This trial used three conditioning temperatures and three storage temperatures on 'Russet Burbank', 'Ranger Russet' and 'Umatilla Russet' from early and late-planted crops. Fry colour darkened as conditioning temperature decreased. Conditioning at higher temperatures increased the tolerance of tubers to lower storage temperatures. Potato processing quality was reduced for early-planted compared with late-planted crops, and late-planted crops had greater tolerance of lower temperatures. There were also differences between cultivars, indicating that the strategies for storing tubers destined for processing must be carefully selected. Driskill et al. (2007) *American Journal of Potato Research* 84: 367-383.

**Effect of planting and vine-kill timing on sugars, specific gravity and skin set in processing potato cultivars.** In this research, tubers were collected from different regimes of planting and vine-kill dates over two years. Greater sugar contents, which result in undesirable fry colour, were found in tubers harvested from later vine-kill dates. The effects of planting date were variable, although earlier dates tended to give lower sugar content. While immature tubers appear to give better processing characteristics, there are other problems with these tubers, such as poor skin set and susceptibility to mechanical damage, dehydration and pathogen infection. Sabba et al. (2007) *American Journal of Potato Research* 84: 205-215.

**Low temperature post-harvest storage of New Zealand Taewa (Māori potato): Effects on starch physico-chemical and functional characteristics.** The changes in starch during a six-month storage period (4°C and 80-90% relative humidity) varied considerably between the five cultivars tested (four traditional Māori cultivars and one modern cultivar, Nadine). The types of changes measured during storage included decreases in starch swelling power, solubility and light transmittance, and a shift to smaller starch granule size. Degradation and pitting in the surface of starch granules and changes in gelatinisation properties occurred. Singh et al. (2008) *Food Chemistry* 106: 583-596.

## THE 91ST ANNUAL MEETING OF THE POTATO ASSOCIATION OF AMERICA AUGUST 2007

**Antioxidant properties of potato cultivars.** Pigmented potatoes contain high levels of phenolic compounds and anthocyanins that are associated with anticarcinogenic properties. This research studied two potato selections that contained pigmented and non-pigmented areas in the same tuber. It was shown that the purple areas contained 3-5 times more total phenolics and higher vitamin C than adjoining non-pigmented sections. Another cultivar, Rio Grande Russet, contained high (but not undesirable) glycoalkaloid levels, and extracts from that cultivar showed inhibition of some human breast cancer cell lines. These results have encouraged further research with other cell culture lines. Stushnoff et al. #002.

**Breeding for potato nutrition enhancement.** The concentrations of anthocyanins and carotenoids tend to be much higher in coloured sweet potato and wild potato varieties than in standard white potatoes, indicating that cross-breeding and selecting may result in increased levels of these important phytonutrients. Two xanthophylls, lutein and zeaxanthin, are known to be protective components of the human retina and are found in significant amounts in potatoes. Cooking potatoes may alter the levels of anthocyanins and carotenoids, but it does not destroy them. Brown #005.

**Effect of seed-borne Potato Virus Y on performance of Russet Burbank, Russet Norkotah and Shepody potatoes.** By combining healthy and infected seed tubers from the same source in various proportions, seed lots with 0, 2, 10, 20 and 50% infection were created. In three seasons, for three varieties, the negative impact of virus infection level was proportionally the same. Below 10% infection, it is expected that there will be no measurable effect of virus on tuber yield.

Nolte et al. #029.

**Variation in *Solanum* species' tuber potassium accumulation and its implications for human nutrition.** High levels of dietary sodium are linked with heart disease in humans. Dietary potassium is regarded as the "sodium antidote" and potatoes are unique in their naturally high potassium levels. Tuber potassium levels were measured in three populations of 25 potato species, and highly significant differences were found. Breeding from species with high potassium levels could have an important effect on human health. Bamberg et al. #043.

**Effect of hairy nightshade in the epidemiology of potato viruses and the biology of aphid vectors.** Hairy nightshade is a very prevalent weed in Idaho, and, being in the Solanaceae family like potatoes, it is susceptible to the same viruses and aphids that infect potatoes. Green peach aphid and potato aphid prefer nightshade over potatoes and they have a 50% higher reproduction rate on the weed. Higher Potato leafroll virus and Potato virus Y levels are found on potatoes grown in paddocks infested with hairy nightshade. Control of this weed is therefore essential, especially in seed potatoes. Alvarez et al. #080.

**Folate in potato tubers: effects of genotype, location, storage, and development.** Folates are essential micronutrients, deficiencies of which have been linked to birth defects. This study showed that folate concentrations ranged from 521 to 1373 ng/g tuber DM, and were found in highest levels in coloured-fleshed potatoes. In addition, skin contained higher concentrations than flesh, folate levels varied with location, and folate content increased during a 7 month storage period. Goyer et al. #099.

**Effect of powdery scab on yield of Umatilla and Shepody potatoes.** Two pot trials used potato seed planted into soil that was inoculated or not with dried, macerated peels from tubers infected with *Spongospora subterranea*. For both cultivars tested, inoculation of soil reduced root weight and increased root necrosis. For Umatilla, inoculation reduced progeny tiller numbers and, in one trial, reduced yield. Nitzan & Brown #111.



## Popular articles

### BOOK: "POTATO HEALTH MANAGEMENT", EDITION TWO

This is a comprehensive book, comprising 23 chapters that cover how to manage potato health, from seed to storage. Included is information about enhancing potato health by managing the soil microflora; cultivar selection; planting protocols; agronomic information; maintaining tuber health during harvest, storage and post-storage handling; and managing pests and diseases to avoid pesticide resistance. This book is intended for anyone interested in growing potatoes, from commercial growers and consultants to agriculture teachers, students and home gardeners. *Johnson (2008) American Phytopathological Society (APS Press), St. Paul, USA. 261 pp.*

### Snippets from [www.potatonews.com](http://www.potatonews.com)

Listed below is a small selection of the articles that are posted on the Global Potato News website. Please visit the site for further details or follow the links.

#### DECEMBER 2007: NEWS HEADLINES

**United States: New class of compostable containers to be made from potato starch.** The company New Ice Inc., based in Durango, Colorado, has recently been granted patents that cover an improved method and materials for manufacturing biodegradable or compostable containers from potato starch. Corresponding patents have also been granted in a number of Eastern European and Asian countries and New Zealand, and further patents are expected in 2008. Initially, the containers will be designed for packaging fruit and vegetables, followed by meats and poultry, and they will be able to hold the products in dry, damp or wet conditions.



#### JANUARY 2008: NEWS HEADLINES

**United Kingdom: Handful of dedicated growers key to Anya variety's success.** Anya, a cross between a red-skinned roasting potato (Desirée) and an old variety (Pink Fir Apple), was bred 15 years ago at the Scottish Crop Research Institute. It is grown by only seven growers and sold on a specialist contract to Sainsbury's, with extended supply being guaranteed by plantings that stretch from Spain to Yorkshire. The variety was recently awarded a silver award in the 'Taste of Britain' seasonal food category, which is judged on a range of criteria, including flavour and quality, innovation, business acumen, environmental record and 'Britishness'.

**United Kingdom: Storing potatoes and onions using Restrain System.** Starting in 1999, a group of growers in England developed a new storage technique using ethylene gas for anti-sprouting control. The patented Restrain Generator® produces the ethylene gas from pure ethanol (alcohol) using a heated catalyst. Over 130,000 tonnes of potatoes are stored this way.

#### JANUARY 2008: POTATO TRENDS

**US microwave fries send retail sales soaring in Japan.** The United States Potato Board describes how the market for microwaveable potato products in Japan has grown 60-70% since the introduction of "Range Potatoes" in December 2006. These frozen crinkle cut potatoes are sold in special boxes designed for use in a microwave. They can be prepared in 3 minutes and have a low oil content.

#### JANUARY 2008: FEATURE ARTICLE

**Trends in potato storage.** This comprehensive article by potato storage specialist Michael D. Lewis that can be downloaded from <http://www.colostate.edu/Depts/SLVRC/disease/2007SRMACLewis.pdf>. It examines the physiological potato defect known as internal sprouts. The article explains why the sprouts occur, including possible physical and chemical interactions, and discusses possible solutions. A series of informative photographs is also presented.



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# The world's best potato harvesters keep getting better.



**New ideas, high quality work.** Through continuous ongoing product development Grimme has become a leader in potato and vegetable harvesting technology in the world market today. A thorough understanding of markets and their machinery requirements, is achieved by building and maintaining a close relationship with our customers, wherever they are in the world.

**Research and development.** Fast and efficient product development is one of Grimme's greatest strengths. First ideas often come from customers. Involving customers in the development process helps to ensure that the finished product fulfills the initial customer need.

**Our trademark: Quality.** Perfection in all areas – this is

the common aim of Grimme. Ongoing investment in modern technology means we are always able to produce the highest possible quality – this ensures we have the competitive advantage.

**Perfect preparation for the field.** Every step of the production process is carefully planned to ensure the end product is of the highest possible quality – for your success. Every Grimme machine is built to a specific customer order. Although Grimme produce 'standard' machines, most are tailored to suit customer crop, soil type, and local environment. For more information on all areas of Grimme sales, service and spare parts phone Craig on 0418 501 647, or 1800 POTATO (768286) or visit [www.landpower.com.au](http://www.landpower.com.au)

