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## Louis Wolthers

McCain boss seeks growth through cooperation

Ben Warner Young seed grower

Potato Extension Program Sowing the seeds of potato R&D



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# Your badge of protection from Late Blight and Sclerotinia

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#### AUSVEG Chairman and CEO messages



#### *Geoff Moar* AUSVEG Chairman

What happens on the farm is clearly vitally important to the success, or otherwise, of a grower's business. Just as important is the role government policy plays in our industry's fortunes.

AUSVEG, as the Peak Industry Body representing the interests of Australia's potato growers, is committed to maintaining a strong and visible presence in Canberra. Activities held in recent weeks are testament to this.

In early March, AUSVEG's Board travelled to the nation's capital, for its first formal meeting of 2014. Along with the full-day Board meeting at Parliament House, AUSVEG held nine individual briefings with politicians and strategists.

Potato industry concerns, including the threat of Zebra chip disease, Country of Origin Labelling laws, and exports, were discussed during meetings with the likes of Senator John Madigan (DLP), The Hon. Cathy McGowan AO, MP (Ind), and Mr Tony Pasin MP (Lib).

The Board also met with Agriculture Minister, the Hon. Barnaby Joyce MP, Leader of the Greens, Senator Christine Milne, Greens Senator Peter Whish-Wilson, Democratic Labour Party Senator John Madigan, Independent Senator Nick Xenophon and Liberal MP Mr Scott Buchholz.

Later in March, AUSVEG was again represented in Canberra, when Director, John Brent, and Public Affairs Manager, William Churchill, appeared before the Senate Finance and Public Administration Committee Inquiry on Australian Government Procurement. AUSVEG welcomed this opportunity and in its formal submission encouraged the Australian Government to consider ways to improve the efficiency of its procurement policies and to support Australian goods and services that will secure long-term strategic capabilities of supply.

By maintaining these strong connections in Canberra, AUSVEG continues providing a strong voice for potato growers.

Excitement is also building ahead of the 2014 AUSVEG National Convention, Trade Show and Awards for Excellence, to be held at the Cairns Convention and Exhibition Centre from June 19 to 21. While the event program features an impressive array of speakers and trade displays, I would also like to draw potato growers' attention to an event of particular interest to them, immediately following the Convention.

On Sunday 22 June, AUSVEG's Potato Field Day will provide growers with the opportunity to get a behind-thescenes look at three significant potato growing operations on the Atherton Tablelands.

Industry experts – including Yara Australia's Stephen Ziebarth, and Haifa Australia CEO, Trevor Dennis – will be on hand to answer attendees' questions. The tour is looming as the perfect bookend to a dynamic Convention program. For more information, or to register for the Convention, go to www.ausveg.com.au/convention or phone AUSVEG on (03) 9882 0277.

Moar

Geoff Moar Chairman AUSVEG



#### **Richard Mulcahy** AUSVEG Chief Executive Officer

t is disappointing to note recent misleading and misinformed public comments about the processes underpinning the National Potato and National Vegetable Levies. Despite significant efforts by AUSVEG to clearly explain the levy processes for the potato and vegetable industries - with support from Horticulture Australia Limited (HAL) and the Industry Advisory Committees (IACs) - the message isn't getting through in some quarters.

The largest single misconception is that AUSVEG is in charge of the collection of levies, and determining how that money is invested. That is simply wrong.

The National Vegetable and National Potato Levies were introduced by the Federal Government, at the request of industry, almost 20 years ago. The Federal Department of Agriculture collects the levies from vegetable and potato growers and potato processors. Collected funds are then matched by the Australian Government, and that money is made available for R&D projects within the respective industries.

AUSVEG does not make decisions relating to the investment of the grower's money.

Rather, the IACs, comprising members with a wealth of experience within the vegetable and potato sectors, make recommendations to HAL on investment in R&D programs. HAL then makes the final decision on which projects are funded. These decisions are based on IAC recommendations, as well as other important factors, including priority investment areas, previously identified by each industry via their Strategic Investment Plans. It is also disgraceful that some individuals in recent weeks have questioned the independence of the Vegetable and Potato IACs, which adhere to strict corporate governance guidelines, particularly in relation to conflicts of interest.

As the National Peak Industry Body for both of these industries, AUSVEG consults extensively with levy-paying growers to ensure their needs are reflected in R&D outcomes.

AUSVEG also has a role as a service provider to the potato and vegetable industries, communicating R&D activities and outcomes to growers. Recent well-attended Potato Industry Extension Program Workshops held in South Australia are a prime example of this.

On the topic of industry events, it is now just a matter of weeks before the 2014 AUSVEG National Convention, Trade Show and Awards for Excellence is held at the Cairns Convention and Exhibition Centre from 19-21 June. With early bird rates expiring on April 25, time is running out for levy-paying growers to save up to \$200 on the standard full delegate rate.

In recent years, the AUSVEG Convention has secured a reputation as Australia's premier horticultural event. I would urge you to be in Cairns in 2014, to experience the Convention first hand, and to support the future of your industry.

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FRONT COVER:

Photograph by Luka Kauzlaric



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This month we are proud to unveil the first themed edition of the year. This edition of *Potatoes Australia* is a 'seed' edition, with a focus on all aspects of seed potato production – from storage and certification, to biosecurity and pest and disease management.

As part of this important edition, we are also excited to profile two established seed potato growers. Lameroo-based young-gun Ben Warner speaks to *Potatoes Australia* about his involvement in the industry (page 16), and we also chat to seasoned grower Kim Weir, who proudly reflects on his ability to produce clean, quality and disease-free seed potatoes in the Crookwell region (page 24).

In another profile article, McCain Foods Regional President Australia/New Zealand, and South Africa, Louis Wolthers, gives his take on the Australian potato industry (page The regular Potato Industry Extension Program column relays news of a visit to seed potato growing operations in Crookwell (page 18), and of the two successful workshops recently held in Mount Barker and Pinnaroo (page 20). The workshops hosted key members of the potato industry, who presented on issues such as new knowledge about Potato virus Y, crop nutrition practices to achieve quality potato skins,

and irrigation efficiencies. In R&D updates, we take a look at an important new resource – the Potato virus Y wall chart, which has recently become available for all potato growers in order to assist them with disease management (page 21). This is complemented by a look across the APRP2 program, with a focus on elements of the project that have particular relevance to seed potatoes (page 26). We also examine research into the existing Australian seed potato certification process, by Dr Doris Blaesing (page 30). In International R&D updates, we discuss the comprehensive seed potato storage and handling guide released by the UK Potato Council (page 28), as well as highlighting a novel way of growing potatoes – in the air (page 32).

Our new regular biosecurity column – The Front Line –

begins in this edition, focusing specifically on pre-emptive biosecurity measures used on Kangaroo Island, a designated disease-free quarantine area (page 14).

And finally, we bring news of the annual Crookwell Potato Festival (page 11), and an update on the Potato Field Day, a not-to-be-missed event being held in conjunction with this year's AUSVEG National Convention (page 8).



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#### News in brief

#### Potato Field Day puts far-north Queensland growers on display

With the 2014 AUSVEG National Convention (June 19 to 21) now only weeks away, potato levy payers are encouraged to register for the Potato Field Day taking place on Sunday 22 June.

Preparations are ramping up for the inaugural event which will provide potato growers the opportunity to tour the properties of some of the Atherton Tablelands' most prominent growers. At each property, delegates will hear from the growers as well as leaders in the areas of potato nutrition, fertigation and research. Victorian seed potato grower, Dean Bone, will chair the sessions on the day.

Stephen Ziebarth from Yara Australia will speak to growers about potato nutrition. Those who attended one of the Potato Industry Extension Program workshops held in Western Australia and South Australia in recent months will recall a similar presentation given by Mr Ziebarth's colleague, Matthew Wetherall, who discussed the importance of effective nutrition application, to achieve highquality tubers. Mr Ziebarth's presentation at the Potato Field Day will complement an address to be given by Yara

International's Agronomic Competence and Training Director, Barry Bull, during the Convention's speakers program.

AUSVEG is also pleased to announce that Haifa Australia CEO, Trevor Dennis, will present to growers as part of the Field Day. Haifa Australia is a leading supplier of water soluble nutrients and works closely with growers to provide tailored nutrient solutions. Growers will have the opportunity to speak to Mr Dennis directly on the day.

The coordinator of the Potato Industry Extension Program, Luke Raggatt, will also be present to speak with growers

Frank Cuda's farm will be just one of three growing operations visited during the Potato Field Day.

about some of the latest research and development activities taking place within the industry, and how growers can utilise the practical outcomes of these to benefit their operations.

Atherton Tablelands growers David Nix, Frank Cuda and Peter Pensini will each open their properties for the Potato Field Day, inviting growers to take a look at their operations. A barbeque lunch will be provided for all attendees.

Held in conjunction with the 2014 AUSVEG National Convention, the Potato Field Day is free for Potato Levy payers who are registered for the main Convention program. Early bird rates for the 2014 AUSVEG National Convention end on 25 April, so growers are encouraged to register now to take advantage of the discounts, which can result in savings of up to \$200 on the standard full delegate cost. With limited places for the Potato Field Day available, and such significant savings on offer, anyone interested in attending this valuable event is urged to register now to avoid disappointment.





**AUSVEG** 2014 National Convention

Trade Show and Awards for Excellence

Reef TOULIP Explore the Great Barrier Reef! Sunday 22 June

## Limited places!

Transport will depart from Pullman Cairns International 9:45am and return to Cairns Convention Centre at 5:45pm. Contact AUSVEG to register (03) 9882 0277 or convention@ausveg.com.au

AUSVEG

2014 National Convention Trade Show and Awards for Excellence

REEF TOUR WITH SNORKELLING ONLY **\$195** 

REEF TOUR WITH **SCUBA** (training and a 30 minute dive) ONLY **\$325** 

# Potato Field Day

Sunday 22 June 2014 Free for Potato Levy payers



This is your chance to get up close and personal with innovative technology and ideas on a number of properties in the Atherton Tablelands region. Hear from industry experts on a range of issues relevant to the sector and have your questions addressed.

Transport will depart Pullman Cairns International at 9.30am sharp and return at 5.00pm.

Contact AUSVEG to register (03) 9882 0277 or convention@ausveg.com.au

This event is not included in full delegate registration and must be registered for separately. Attendees must be registered for a Convention event.



#### SYNGENTA'S TECHNICAL SERVICES LEAD, SCOTT MATHEW, LOOKS AT POTATO SEED TREATMENT.

Potato seed is a significant investment for commercial potato growers, and the benefits of potato seed treatments should not be underestimated. Whether seed treatments are directly applied to the seed piece, or as an in-furrow application, it will be one of the most important decisions to be made by growers for the early management of their commercial potato crop.

Because disease pressures differ from one growing region to another, both seed and commercial growers should carefully select the seed and/or in-furrow treatment that best meets their needs.

Table 1 (right) indicates the estimated importance of the source of disease inoculum.

As can be seen, both the seed and soil are a source of disease inoculum for Black scurf (*Rhizoctonia solani*), with the level of importance considered to be high. As a grower, you therefore may consider using a seed treatment as well as applying an infurrow fungicide for Black scurf control.

#### Table 2:

For Silver scurf (*Helminthosporium solani*), seed is considered of high importance as a source of disease and you may therefore choose a seed treatment for its control.

To protect seed from disease, a variety of fungicides are available to growers that provide effective control of multiple diseases, as demonstrated in Table 2.

These fungicides can be applied either to seed pieces prior to planting, at planting, or as in-furrow treatments. It is also important that growers take care when handling and storing seed to ensure they can maximise the returns from the subsequent crop.



For more information or to ask a question, please contact your local Syngenta Territory Manager, the Syngenta Advice Line on 1800 067 108, visit www.syngenta.com.au or email *Potatoes Australia*: info@ ausveg.com.au. Please note that your questions may be published.

#### Table 1:

	Source of disease inoculum (seed or soil); level of importance (nil to high)				
	Seed	Soil			
Black scurf (Rhizoctonia solani)	High	High			
Silver scurf (Helminthosporium solani)	High	Possibly			
Black Dot (Colletotrichum coccodes)	Possibly	High			
Common scab (Streptomyces spp)	Possibly	High			
Powdery Scab (Spongospora subterranea)	High	High			
Fusarium Dry Rot (Fusarium spp)	High	Low			
Gangrene ( <i>Phoma exigua</i> )	High	Nil			

Product	Seed treatments prior to storage			At planting				In Furrow		
Disease	Fludioxonil (MAXIM)	Thiabendazole (TECTO)	Imazalil	Fludioxonil (MAXIM)	Pencycuron	Flutolanil	Tolclofos- Methyl	Iprodione	Azoxystrobin (AMISTAR)	Tolclofos- Methyl
Black scurf ( <i>Rhizoctonia solani</i> )	Y			Y	Y	Y	Y	Y	Y	Y
Silver scurf ( <i>Helminthosporium</i> <i>solani</i> )	Y	Y	Y	Y					Y (suppression)	
Common scab ( <i>Streptomyces spp</i> )	Y (suppression)			Y (suppression)						
Fusarium Dry Rot ( <i>Fusarium spp</i> )	Y	Y	Y	Y						
Seed borne Black Dot ( <i>Colletotrichum</i> <i>coccodes</i> )	Y			Y						
Gangrene ( <i>Phoma exigua</i> )		Y	Y							

#### News in brief

## Spud lovers descend for annual potato fest

Some might say the potato isn't celebrated enough. That certainly wasn't the case in Crookwell during the first weekend of March, when hundreds of people descended on the tiny New South Wales hamlet to participate in the annual Crookwell Potato Festival.

Held each year in the Southern Tablelands town to celebrate more than 150 years of potato growing in the region, the festival features everything from potato-themed produce displays to food tastings to performances to competitions, and farm demonstrations.

Not even cool, drizzly

conditions could stop the crowds flocking into town to soak up the atmosphere at the main day of this year's event on Saturday 1 March.

The Crookwell Potato Association's stand, which featured a range of potato produce including potato bread, potato soup, and even potato ice cream, proved a particular hit.

Visitors were also able to pick up a bag of famous Crookwell potatoes, for a gold coin donation, with all proceeds donated to charity. Crookwell Potato Association

STOOKWEIT POLALO ASSOCIALIOIT

President Matthew Gay said the festival was an important means of spreading the message about Crookwell's clean potatoes.

"On a local level, a lot of people know who we are and what we do but it's the people who come from far away that really get a lot of information out of it, and we get a lot of information and feedback from them as to what varieties they like, that sort of thing," he said

"We had some potatoes you could get for a gold coin donation, and, gee, that was popular."

"Within a couple of hours they



were totally gone, and on a pretty inhospitable day."

"We got a real kick out of that."

**Captions:** Kerry Smith (top right) gets into the festival spirit at the Crookwell Potato Association stand, while punters flock to sample potato produce, in spite of the wet.





## Industry represented as Coles notches up a ton

The Australian vegetable and potato industries were recently present at a Canberra celebration marking the centenary of Australian supermarket giant Coles.

AUSVEG Chairman, Geoff Moar, and Public Affairs Manager, William Churchill, represented the Peak Industry Body at the function, attended by Prime Minister, Tony Abbott, and Coles Managing Director, lan McLeod, among others. Successful growers Matt Hood, John Said and Carlo Pippo were also on hand during the function at the National Portrait Gallery, on Wednesday 5 March

The event was one of a series of celebrations put on by the retailer to mark its centenary this year. The first of what would ultimately become one of the country's most well-known chain stores was opened in 1914, when GJ Coles and his brother James established their first shop in Collingwood, Melbourne.

Mr Moar congratulated the retailer's management on reaching the 100-year mark, noting it was a significant milestone. "Given the strong links between our industry and the supermarket sector, we look forward to building on strong professional relationships with Coles during the years ahead," he said.

Attendees at the Canberra event were also presented with commemorative coffee table books, detailing the history of Coles.



# From 'farm to fork': McCain boss seeks growth through cooperation

AS REGIONAL PRESIDENT AUSTRALIA/NEW ZEALAND AND SOUTH AFRICA AT GLOBAL FOOD GIANT MCCAIN, LOUIS WOLTHERS IS HEAVILY INVOLVED IN THE AUSTRALIAN POTATO INDUSTRY. MR WOLTHERS RECENTLY TOOK THE TIME TO GIVE HIS VIEWS ON THE SECTOR TO *POTATOES AUSTRALIA*.

## What is your current role at McCain and what does it involve?

As Regional President Australia/ New Zealand and South Africa, I am responsible for McCain's profitable growth in the region.

## What experiences do you bring to your current role?

I am a Chartered Accountant (South Africa) and have over 26 years of experience in general management in FMCG manufacturing, mostly in the poultry and milling industries in South Africa, and in the last three years with McCain Foods in frozen potato fries and vegetables in South Africa, and now in Australia/New Zealand as well.

## What do you see as your greatest professional achievement to date?

While I have had numerous successes in turning around a number of businesses, I count as my biggest successes businesses I have managed over an extended period with exceptional compound growth rates, like the animal feed business, which I managed over a period of eight years with a compound earnings growth rate of 22 per cent. I would rather be known for providing sustainable long-term success and leaving behind a strong independent business, than for being good at business turnarounds.

#### You hail from South Africa originally. What do you see as some of the key differences between the Australian and South African potato industries?

The largely sub-tropical growing conditions in South Africa are difficult with inclement

weather and diseases providing a challenge to potato growers. Secondly, there are two seasons in South Africa, so processing is mostly done fresh, from field rather than from stored potatoes, which makes the supply chain extremely difficult.

#### What is it that you enjoy most about your role and your involvement in the Australian potato industry?

Having had to deal with the challenges of ensuring the potato processing industry in South Africa responds to competitive forces from the increase in, especially European, imports into South Africa, I was very keen to share my experience in Australia, to ensure a similar successful response. I have found an openness and willingness to respond to the challenge, in the natural competitive spirit in Australia and New Zealand.

The Australian processing potato industry has been beset by some welldocumented challenges in recent years. What do you see as the key issues facing the sector?

The increase in European imports is well-covered as

well as the high ex-farm costs of potatoes. Between the processors, growers and government, we need to work together to enable the industry as a whole to remain competitive and sustainable. This includes work on farming practices, genetics and policy and infrastructure investment that affect input costs for fuel, fertiliser and water.

What steps need to be taken by those in the Australian potato industry, in order for the sector to remain viable in to the future?

While processors and growers do work together on genetics



and farming practices, this needs to be improved. But importantly, we need to form a common approach to the investments in infrastructure we require from government, for example, to ensure reliable and sustainable water supply, as well as policy that delivers a level playing field, whether that be in the factors that affect fuel and fertiliser costs or the effects of unfair competition, if it is a factor.

To date, the Australian potato industry has remained free of the Tomato-potato psyllid (TPP) and Zebra chip disease. How significant is the threat of Zebra chip to domestic producers?

This is a significant issue for potato growers, and McCain Foods, and will remain that way until more is known on the science. In 2012, McCain Foods and other food processors through the Peak Industry Body, Potato Processors Association of Australia (PPAA), wrote to the Biosecurity division of the Federal Department of Agriculture, Fisheries and Forestry expressing its opposition to the import of fresh potatoes from New Zealand because of the threat of the Zebra chip disease. Australia to date, and the Australian potato industry, has managed to remain free of the TPP and Zebra chip disease. There is always a risk of TPP arriving in Australia, as there is for any potential new pest or disease incursion, but by utilising the Australian research and science community, and New Zealand researchers, there has been active research and learning arising from New Zealand, which includes lessons learnt from the US experience with this pest. McCain Foods believe the

The health of McCain in Australia is tied to the health of the potato industry, from farm to fork. My hope is for a sustainable, competitive and healthy industry... effects of TPP can be minimised should it arrive in Australia.

What steps should be taken to ensure that Australia remains free of the TPP and Zebra chip disease?

Pro-active monitoring of our growing regions to ensure we remain TPP free, maintain an active research program in New Zealand and Australia, so we are in a ready-state should an outbreak occur. And maintain an active biosecurity presence at our borders.

Given your role in a significant global company such as McCain, how do you strike the balance between sourcing local and imported produce?

McCain Foods has a number of factories and considerable investment in Australia – i.e. Ballarat in Victoria and Smithton in Tasmania – where we require locally-grown potatoes, and would only source processed raw materials from other states or New Zealand if there were shortages such as during the severe drought in 2008-9.

With the investment McCain has made in local production, it will always be our preference to source local for the local market.

What are your hopes for the future of McCain in Australia, and the Australian potato industry?

McCain Foods is committed to Australia and has been a part of the local food industry for over four decades. But it's imperative that the local industry understands that we are part of a global market, and that we must return to being competitive and import-resistant, as we were earlier this decade.

The health of McCain in Australia is tied to the health of the potato industry, from farm to fork. My hope is for a sustainable, competitive and healthy industry, and I hope to make a valuable contribution towards that goal.



# Keen to be clean: Biosecurity pays off for island industry



IN THIS INSTALMENT OF **THE FRONT LINE**, WE DISCUSS PRE-EMPTIVE STRATEGIES THAT SEED POTATO GROWERS ARE USING TO MINIMISE AND LIMIT POTATO DISEASES ON KANGAROO ISLAND - A DESIGNATED DISEASE-FREE QUARANTINE AREA FOR POTATOES, LOCATED APPROXIMATELY 112 KM SOUTH-WEST OF ADELAIDE.

Kangaroo Island Seed Potatoes, operated by Circle T Farms, has grown seed potatoes on Kangaroo Island for nine years. Located in high-rainfall country near Parndana, the farm has an annual production of roughly 1200 tonnes of fresh seed potato. Growing primarily Coliban, Desiree and Ruby Lou varieties, the farm supplies the bulk of their produce to potato growers in South Australia and Queensland, as well as some growers in Victoria.

Farm Manager Damien Trethewey believes the strength of Kangaroo Island's seed potato industry begins with virgin soil.

"The land we farm wasn't originally used for potato production, so the soils haven't been exposed to potato diseases in the first place," he says.

#### Prevention beats cure

To prevent soil-borne potato diseases spreading to Kangaroo

Island, the South Australian Government prohibits carrying potatoes or potato products on to the island unless they are first washed, brushed free of soil and placed in new packaging. These protocols limit the risk of soil-borne potato diseases being introduced to the island within contaminated soil

Damien matches these quarantine protocols with a variety of basic on-farm hygiene measures which promote biosecurity. "We have boot washing stations to prevent soil matter from entering the property and we periodically wash down machinery with high pressure hoses to prevent the movement of soil throughout the property," he says.

#### Remaining vigilant

All sectors of the Australian potato industry have a long history of valuing disease-free potato seed.

Seed potato certification

schemes were first introduced more than a half century ago to control the spread of pests and diseases in seed. However, even disease-free seed stock does not provide complete security from disease issues. The practice of implementing good on-farm hygiene is also critical to further minimise or limit the impact of these issues on production.

Many potato diseases can lay dormant and accumulate in soil structures, prolonging their damaging elements. Damien follows a strict crop rotation program in order to avoid the build-up of disease pressure in the soil. "As an added level of protection, we have a five year rotation between crops and market all seed, at or before it reaches, its fifth generation," he says.

#### One way traffic

Kangaroo Island Seed Potatoes exclusively uses new bags and bins when supplying seed potatoes to the Australian mainland. Once this material has left the property, none of it is permitted to return. This is an added level of protection Damien considers crucial to limit the risk of contracting potato diseases from foreign soil. "Using new bags and bins ensures we don't import any soil and that's one less risk to worry about," he says.

#### Regular testing

In addition to good hygiene practices, the farm operates under a system of periodic field inspections and laboratory analyses, testing for Potato cyst nematode (PCN) prior to planting, and Potato virus Y (PVY) plus other virus and disease issues prior to sale. This practice gives producers who purchase the seed an assurance that the potatoes are free from potato pests and diseases, and provides an early warning system should any potential issues be identified.



# 

The propagation and spread of potato diseases can be unpredictable. Traceability through the value chain is critical to help identify the source of disease incursions, and Damien expects traceability

#### On-farm hygiene tips for potato growers

Many pests and diseases are carried in plant and soil material moved from place to place by people, equipment and machinery. To limit this risk, you can:

- Maintain a Visitor Register which facilitates trace-back in the event of an incursion, aiding the identification of potential sources.
- Install farm-gate biosecurity signage identifying your property as having a biosecurity management plan in place, reminding visitors to be aware of biosecurity risks.
- Brief workers, contractors and visitors of your biosecurity measures, ensuring people entering
  your farm are well aware of biosecurity threats and increasing the likelihood of early plant-pest or
  disease identification.
- Ensure employee and visitor footwear and clothing is free from soil and plant material before entering or leaving your farm. Provide scrubbing brushes, footbaths, boot covers and protective clothing to prevent the dispersal of foreign soil and plant material.

If you suspect a new pest - report it to the Exotic Plant Pest Hotline 1800 084 881.



when purchasing stock. He only imports mini-tubers from accredited, traceable sources. "Our mini-tuber suppliers

follow strict hygiene protocols. Each batch is inspected for biosecurity and the leaves of the mini-tuber plants are sampled and tested for viruses," he says.

#### Unique to Australia

The movement of soil and plant material is primarily to blame for the spread of potato diseases in Australia. Kangaroo Island's unique biosecurity situation results from its physical isolation and the strict quarantine protocols that are in place. However, Kangaroo Island seed potato growers are also acutely aware of the dangers of becoming complacent. A proactive approach to on-farm biosecurity therefore supplements Kangaroo Island's quarantine protocols and safeguards its unique seed potato industry.



Further information on farm biosecurity can also be found at www. farmbiosecurity.com.au.

# Q&A Young grower profile

Name: Ben Warner Age: 36 Location: Lameroo, South Australia Works: Grower Grows: Two crops of seed potatoes. One harvested in early winter, the other harvested in early summer

> Lameroo, <u>Sou</u>th Australia

#### How did you first become involved in the potato industry?

My parents started growing seed potatoes on Kangaroo Island about 10 years ago. I used to visit the farm to help prepare the harvester and help out in the grading shed occasionally.

## What is your role in the business?

I am involved in all areas, from planning and planting the potatoes, irrigating the crop, fertilising, spraying, and then harvesting and grading the seed to be loaded onto trucks.

How would you describe your average day at work?

Machinery maintenance and repairs, spraying potatoes, spreading fertiliser, running irrigators and pumps, and inspecting growing crops for trouble. During harvest, I spend weeks in the grading shed.

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

Meeting the people along the way who have been so helpful with advice and sharing their knowledge. I really enjoy seeing a good, clean crop growing quickly, knowing all the crop inputs are in on time. There's also the satisfaction I get when a limiting part of the operation is improved, and the difference it makes.

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

Finding good staff who are prepared to work the hours when needed. Disease risk is also always a concern, either from aphids and thrips carrying diseases in, or from issues in the seed to be planted.

#### This edition of the magazine is focusing specifically on seed potatoes. What are some of the keys to producing the best possible seed potatoes?

Attention to detail, seed preparation, soil preparation, crop care, timing of spray-off, the harvesting and grading process. Every stage of the process is important. If I plant poor seed it's more than likely going to struggle to yield. If I have a good yield and then skin it at harvest, it's also stuffed.

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

Cheap imported produce replacing Australian grown potatoes, and the risk of new hard-to-control pests and diseases.

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

More marketing of potatoes as a healthy food option, instead of an unhealthy choice, locally, may help. Exporting fresh and processed spuds to the Asian countries nearby would also certainly expose us to more people.

#### What role does research and development play in the efficient operation of your business?

Any research that improves the disease resistance of the plants, and quality of the seed I produce all helps the efficiency of the operation.

#### How do you think more young people could become encouraged to take up jobs in the potato industry?

I think it has to start in early school years. I think the vast majority of the population have got very little idea what goes on in the farming industry to produce our food. If young children could be shown some of the machinery, technology and activity that goes on, it may help change people's perception that farmers drive open-cab tractors while chewing on a piece of straw.

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

Probably working in the mining industry, in broadacre farming, or working on a fishing boat.

#### Where do you see yourself in five years time?

Fair chance in debt up to my neck.









## Sowing the seed: Crookwell on the radar as PIEP touches down

A RECENT **POTATO INDUSTRY EXTENSION** 

**PROGRAM** VISIT TO CROOKWELL, IN NEW SOUTH WALES, HAS SHED LIGHT ON THE PRACTICES EMPLOYED, AND ISSUES FACED, BY SEED GROWERS IN THIS ISOLATED POCKET OF THE SOUTHERN TABLELANDS.

ver the past two years, AUSVEG has sought to engage potato growers right across the country in the valuable activities undertaken for the Potato Industry Extension Program. With the primary aim of extending the reach of practical R&D information that could benefit growers' businesses, AUSVEG personnel have travelled to almost every key potato growing area of the country, to speak with producers directly about the production issues they are facing, and to communicate important information on the latest potato R&D findings that are emerging both within Australia and abroad

Recently, Potato Industry Extension Program initiatives included a visit to the seed potato growing 'pocket' of Crookwell, located at the base of the Great Dividing Ranges in the Southern Tablelands of New South Wales.

#### Welcome to Crookwell

With the town situated more than 800 metres above sea

level. Crookwell's high altitude and mostly-cool climate prevents the survival of some of the major potato pests and diseases, including the green peach aphid. It is little wonder then that growers in the area have earned a solid reputation for producing high-quality seed potatoes. Crookwell's geographical isolation from any other commercial growing operations is another important contributor to the 'clean factor' of the potatoes produced there. This is further strengthened by the NSW Government's Quarantine Proclamation of the area that declares Crookwell free from Potato cyst nematode (PCN) and Bacterial wilt.

Potatoes have been grown in Crookwell for 150 years, and while the number of growers has sharply declined in recent decades, the half dozen who remain in the Crookwell Potato Association are as committed to the industry as ever, and remain generally positive about the future, despite the challenges.

President of the Crookwell Potato Association, Mr Matthew Gay, warmly welcomed AUSVEG



representatives to the area, introducing each of the local seed producers and leading a tour of their farms. This included a visit to a local minituber operation, which produces approximately 12 varieties of mini-tubers that are then supplied to both the local and interstate growers.

"I think the best part about it was that [AUSVEG] came to us and had a look at a region that maybe not too many people are very familiar with," he said of the visit.

"We're off the beaten track and we're very secluded... and it was good for us to show [AUSVEG], even with our isolation, what we've got and the sort of product that we produce."

#### The tour

The tour of Crookwell commenced with a visit to the property of grower, Kim Weir, who showcased a very healthy looking fourth generation seed potato crop of the Sebago variety. Mr Weir explained how Crookwell's unique weather conditions – which generally flow through the area in a predictable 'north-south' direction, thanks to the nearby Ranges – can be highly favourable. Mr Weir is the subject of the grower feature in this issue of *Potatoes Australia*, found on page 24.

A short drive away is third generation grower, Garry Kadwell's property, which sits more than 1,000 metres above sea level. Originally established by Garry's grandfather as an orchard, the main focus of this picturesque farm is now the production of high quality seed potatoes. Garry supplies more than 1,000 tonnes of seed each year, growing approximately 15 different varieties, including Atlantic, Maranca, Sebago, Ruby Lou and Carisma.

Garry Kadwell's commitment to implementing sound land management practices and sustainable farming, however, is by far the most unique feature of this impressive operation. Garry has been an active and passionate participant in a range of environmentally-focused projects, some supported by Landcare Australia, which has





seen him plant a large number of native trees, shrubs and grasses along 'linked vegetation corridors', which separate many of the paddocks on his property. More than 32 per cent of Garry's property is now part of these native conservation zones, with the vegetation corridors encouraging natural bio-diversity, such as beneficial insects. Garry will also soon

start work on a new project with funding support from Greening Australia, to develop a series of wetlands around the property's dams to attract native birds.

According to Garry, this process of sustainable farming has not only been rewarding personally, but is also paying dividends for his business. He believes the operation has achieved a significant increase in productivity thanks to the native vegetation corridors, which act as a wind-break for his crops. They have also almost completely removed the need for pesticide application, and have reduced the impact of frost, which can be a significant issue in Crookwell.

#### Spreading the R&D message

AUSVEG's tour of Crookwell was an important opportunity to discuss key R&D information that has been shared through the Potato Industry Extension Program. Discussions with the Crookwell growers focused on a raft of R&D activities relating to the seed potato industry. including new knowledge on potato virus identification and monitoring, as well as current industry consultations regarding the various seed certification schemes operating in Australia,



SEED POTATO SPECIAL service for soil-borne pathogens developed in the Australian Potato Research Program Phase 2 (APRP2).

The tour also allowed AUSVEG representatives to gain firsthand understanding of the key issues facing the potato growers operating in the unique conditions around Crookwell. Restricted access to water for irrigation was consistently identified as an ongoing challenge. Growers are mindful of the need to keep the potato virus issues that have heavily impacted on growers elsewhere, out of their own area. Matthew Gay believes while Crookwell will likely remain free from destructive potato viruses, the growers there will need to stay vigilant.

"We still have to be watchful... because at this point in time we are virus free, including PVY. What I would be wary of is that viruses could come in to our clean area. That is a concern for me... At this point in time we are virus free, but the challenge is to stay that way," he says.

AUSVEG would like to thank Matthew Gay and all of the growers in the Crookwell Potato Association for facilitating these valuable meetings. These kinds of activities are an important aspect of the Potato Industry Extension Program's broader aims, and AUSVEG looks forward to engaging with more regional potato grower groups throughout 2014.

#### Web-links:

Crookwell Potato Association: www.seedpotatoes.com.au Crookwell Potato Festival: www. crookwellpotatofestival.com.au Landcare Australia: www. landcareonline.com.au Greening Australia: www. greeningaustralia.org.au



Potato Extension Program

## South Australian growers embrace potato R&D

RECENT **POTATO INDUSTRY EXTENSION PROGRAM** WORKSHOPS PULLED STRONG CROWDS IN SOUTH AUSTRALIA.

Couth Australian potato  $\mathbf{J}_{\mathsf{growers}}$  showed strong support for a series of R&D workshops held across the state in March, with almost 70 industry members taking part in workshops held in Mount Barker and Pinnaroo. The workshops were arranged by AUSVEG as part of the Potato Industry Extension Program and provided attendees with a valuable opportunity to engage directly with some of Australia's leading potato experts. Each of the workshops was supplemented by onfarm meetings with growers in the Murraylands and Mallee regions.

Summaries of the presentations given at the workshops are provided below.

#### New knowledge on Potato virus Y

Ms Brenda Coutts, from DAFWA, outlined new knowledge on Potato virus Y, which can cause yield losses and tuber quality defects in potato crops. Ms Coutts explained how the virus can spread between plants and discussed key virus symptoms that growers should be aware of, such as mild to severe leaf mosaic. She stressed that the aphid-borne virus can spread when infected leaves rub against healthy plants, and can even be transmitted via clothing and farming equipment.

## Seed potato quality issues: Beyond the farm-gate

Dr Doris Blaesing, from RMCG, led a valuable discussion on seed quality issues, highlighting some of the major challenges associated with maintaining quality seed potatoes throughout the supply chain. Dr Blaesing said that the quality of seed potatoes can be affected by factors after the product has left the farm-gate, including poor handling and storage of seed potatoes (including



transportation), and other stresses incurred.

#### Crop nutrition practices to achieve quality potato skins

Agronomists Mr Paul Wellington, from Elders, and Mr Matthew Wetherall, from Yara, each addressed attendees on aspects of implementing good nutrition practices in potato crops. Both experts stressed that calcium is an essential nutrient in potato plants, and is vital in the development phase of a crop. It was explained that calcium improves the tuber skin finish by promoting strong cell walls, and helps to increase a crop's tolerance to stress, including heat. The presentations outlined the role of specific nutrients in relation to yield, tuber size, skin finish, and bruising and handling resistance, and provided some key information on the uptake process of critical nutrients by a potato plant.

#### Irrigation efficiency and soil salinity management in potato crops

Research Scientist, Mr Mark Skewes, from SARDI, presented on irrigation efficiency and soil salinity management, which are pertinent issues to growers in the Mallee. Mr Skewes has extensive experience investigating crop water requirements across the climatic regions of South Australia. In his presentation, Mr Skewes outlined best management practices for irrigation, the importance of designing and maintaining effective irrigation systems, soil water monitoring and variable rate irrigation. He also explained salinity tolerance and discussed ways to monitor for leaching.

#### Controlling Target spot (Early blight) in potatoes

Mr Scott Mathew, from Syngenta, discussed effective management strategies for controlling Target spot, or Early blight disease. Early blight attacks the leaves and stems of potatoes and can lead to reduced yields of tubers. Mr Mathew outlined the disease cycle of Early blight and provided several management recommendations. These included: planting later maturing varieties that are more resistant to the disease, maintaining a regular protective spray program, particularly after flowering, minimising stress on the plant wherever possible, and maintaining regular crop monitoring during favourable weather conditions.

For more information about the Potato Industry Extension Program contact AUSVEG. Phone: (03) 9882 0277 Email: info@ausveg.com.au Project Number: PT11004



## Charting a course towards effective PVY management

A NEW WALL CHART HAS BEEN CREATED TO GIVE GROWERS THE INFORMATION THEY NEED TO UNDERSTAND AND MANAGE POTATO VIRUS Y.

t's one of the most significant threats facing Australian potato growers – particularly those dealing in seed.

The difficult-to-eradicate Potato virus Y can lead to the downgrading of seed stocks, and severe tuber yield and quality losses in ware crops. The virus also has the potential to negatively affect burgeoning seed export markets.

Though there is plenty to be learned, research todate has resulted in a better understanding of PVY, and strategies to manage the threat.

To present growers with the latest available information about PVY, an easy-tounderstand wall chart, outlining symptoms, strains, transmission and management tips has been prepared.

Images and information contained in the chart were provided by the Department of Agriculture and Food Western Australia. The communication of this important information was funded by Horticulture Australia Limited using the National Potato Levies and matched funds from the Australian Government.

A summary of key points outlined in the PVY wall chart is contained in the article below.

#### Strains

It is important for those contending with PVY to understand that there are several different strains. These include:

- Y 0 common.
- Y N tobacco veinal necrosis.
- Y C stipple streak.
- Y NTN associated with potato tuber necrotic ringspot.

Resistance to one form of the virus does not necessarily equate to resistance to others.

#### Symptoms

Not all potato varieties show visual symptoms. It is, therefore, important to have crops properly tested.

Nevertheless, there are a number of tell-tale signs growers should keep an eye out for. While these symptoms can vary depending on cultivar, plant age, environmental conditions and strain, they can include:

• Mild to severe mosaic and/or

SYMPTOMS

TRANSMISSION

mottling.

- Leaf death and drop.
- Stunted growth.
- Undersized tubers.Necrotic rings on tuber skin.
- Necrotic migs on tuber skin.

#### Transmission

Infected green peach and potato aphids, as well as other species, can transmit PVY within seconds of feeding on previously healthy plants. Sources of PVY can include:

- Infected seed potato tubers.
- Old potato crops.

TIPS AND MANAGEMENT

AUSVEG PAA

Other crops such as capsicum, tomato and tobacco.

STRAINS

• Weeds, including nightshade or cape gooseberry.

Tune-in to Episode #2 of the Potato Extension Program

Spudcast series to listen to PVY expert, Brenda Coutts (DAFWA), discussing important new knowledge on the virus. www.ausveg.com.au/potatoes/multimedia.

Machinery can also help spread PVY if it damages infected leaves and spreads sap on to healthy plants.

#### Tips and management

With insecticides proving ineffective in controlling PVY because they do not act quickly enough to prevent aphids feeding and spreading the virus, an integrated pest management (IPM) approach is needed to minimise spread. While the use of seed with a PVY level of 'zero' is the prime management practice, a number of other steps can be taken to minimise the PVY-associated risks. These include:

- Employing good hygiene practices with machinery.
- Using PVY-resistant varieties where available.
- Planting a non-host border crop, such as wheat, oats or sorghum, around the potato crop about four weeks before planting.
- Planting new crops upwind of older crops.
- Removing potato plants demonstrating virus symptoms and old crops immediately after final harvest.
- Avoiding moving machinery, equipment and workers from old crops to new ones.
- Destroying volunteer potato plants and weeds before planting.



To obtain a free copy of the PVY wall chart, contact AUSVEG

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



## Healthy crops spell growth for Yara

YARA AUSTRALIA COUNTRY MANAGER, BILL TERRY, DISCUSSES FERTILISER SOLUTIONS AND THE AUSTRALIAN POTATO INDUSTRY WITH *POTATOES AUSTRALIA*, AHEAD OF THE COMPANY'S INVOLVEMENT IN THE 2014 AUSVEG NATIONAL CONVENTION, TRADE SHOW AND AWARDS FOR EXCELLENCE. Much like the nourishment provided to crops by Yara products, the global plant nutrition and industrial company's Australian Country Manager, Bill Terry, has played an integral part in the business' growth.

Charged with overseeing everything from sales and marketing, bulk liquid production, importing, logistics and distribution, health, environment, safety and quality, and financial aspects of the business, the Agricultural Economics graduate turned fertiliser industry veteran is upbeat about the future.

While his main aim is to ensure Yara Australia's ongoing growth, Mr Terry knows this can't be achieved without a healthy local potato industry.

"The potato industry is a very important industry to Yara globally, and here in Australia potato growers are major users of our products," he says.

"So we want to see the potato

industry in Australia grow and prosper. We also want to be seen as a company that provides real value to potato growers so that growers think of our products, our services, and Yara as a whole, as the company of choice when they come to making decisions regarding their crops' nutritional requirements."

#### On the job experience

Mr Terry explains how his early years spent on farming properties in rural New South Wales, coupled with extensive professional experience, position him well to deal with the challenges facing Yara and the Australian potato industry.

Leading in to his current role, he completed stints at Australian Fertilisers Limited (later Incitec Fertilisers, now Incitec Pivot Limited) before joining Norsk Hydro (now Yara) in 1997.

Having helped grow Yara Australia from a start-up to the point where it employs 45 permanent staff and operates three local bulk liquid fertiliser manufacturing plants, while also importing Yara products from overseas, he lists the feat as among his proudest professional achievements.

"When you do something like

We want to see the potato industry in Australia grow and prosper.

- Bill Terry.



that you have to do much of the ground work yourself, from working out in the paddocks, selling and giving advice to growers, through to high level negotiations and discussions with international suppliers and manufacturing plants. It's a great way to really learn the business and learn the industry."

#### Solutions for growers

With potato growers making up a significant proportion of Yara's customers in Australia, Mr Terry says sharing the company's vast array of nutritional information with industry is among the most enjoyable aspects of his job.

He adds while fertiliser issues vary from crop to crop, generally, efficient product use is key.

"By this I mean product, placement, timing and the rate of application," he says. "So, use of the correct product, applied at the right time, in the right place and at the correct application rate to meet the plant's demand at the time, or growth stage, is important. Use of the correct product at the correct time, can help improve uptake of the nutrient, reduce disease, reduce nutritional deficiencies and improve produce quality and storability."

Mr Terry says he is also keen to ensure growers minimise errors when searching for fertiliser solutions. Growers simply looking at the price per tonne rather than asking whether a product is the right fertiliser for the job at hand is a common mistake he notices.

"A fertiliser may be lower cost per tonne, but it may not give the results the grower requires," he says.

#### Active communication and the AUSVEG National Convention

Mr Terry says effective communication with growers is an important part of promoting best practice. To achieve this, Yara actively engages with customers through face-toface farm visits and grower meetings, while conventions and conferences are also effective means of spreading the message.

With Yara's Agronomic Competence and Training Director, Barry Bull, set to speak at this year's AUSVEG National Convention, Trade Show and Awards for Excellence in Cairns in June, Mr Terry says attendees stand to benefit from his vast knowledge of nutrition.

"For many years he worked in senior agronomy positions in Australia and for the last 15 years Barry has worked with Yara in many different countries. He has the unique ability to deliver a complicated message in easy-tounderstand terms that everyone can understand."

Yara Australia's Steve Ziebarth will also be presenting during AUSVEG's Potato Field Day in North Queensland, which will visit three major potato growing operations in the Atherton Tablelands, the day after the Convention on June 22.

Mr Terry says the event will give growers the opportunity to discuss potato nutrition in practice, while also providing insight in to significant potato growing operations in the region.

"It's one thing to talk about plant nutrition in a lecture theatre or conference room, however, it is out in the field, where you can really see what is happening."



## Weir in it for the long haul

THE CLIMATE AND RELATIVE ISOLATION OF CROOKWELL ALLOW THIRD-GENERATION FARMER KIM WEIR TO PRODUCE TOP-QUALITY SEED POTATOES.

Quality over quantity. It's a concept many of Crookwell's seed potato growers must regularly consider, given the region's climate allows just a limited growing window each year. It's no different for Kim Weir, whose approach to farming has been honed over three generations of his family working the elevated terrain of the NSW Southern Tablelands.

It's probably just as well then that a combination of factors blessing the growing lands surrounding the township – famed for its annual Potato Festival – encourage the growth of healthy and robust seed potatoes.

While the number of growers working the region has fallen in recent years, Kim and his fellow members of the Crookwell Potato Association remain as committed as ever to producing the best possible seed for their buyers.

#### The product

As a third generation farmer, Kim remains dedicated to the production of seed potatoes. Running a mixed farm across 1000 acres around Crookwell also means the grower is spoilt for choice when it comes to choosing the best location for crops. Kim says variable climactic factors in the nooks and crannies around Crookwell are important considerations, when deciding where to plant.

"We grow between 10 to 15 hectares of certified seed annually, mainly Sebago which mostly go to Queensland," says Kim. "We also grow some Carisma."

"We plant in mid-December and take the crop through until the end of March. Then the crop is usually terminated and then left to mature in the ground for about a month and then we harvest." "After that it starts to get a bit cold."

#### Ensuring quality

Though climactic conditions limit the window Crookwell growers have to plant and harvest, the environment isn't without its benefits. Kim maintains the cool mountain winters and clean air are significant contributors to helping the soil and seed potatoes produced around Crookwell remain free of diseases.

Kim is also proud of the fact his product has so far remained free of Potato virus Y. He seeks to keep it that way by carrying out regular testing. Along with the climate, he says factors, including the relatively-low concentration of growers in the area, also contribute to the cleanliness of the product.

"The risk of disease is always

at the forefront. We are fortunate in Crookwell that we have been able to avoid those major diseases," says Kim.

"It's probably a combination of our isolation along with the range of climactic factors. We also don't have the pressures associated with having commercial growers in close vicinity either. We do have a little bit of breathing room, which is good."

#### Maintaining standards

Clean, quality product may be the hallmarks of Kim's operation and those of his fellow Crookwell growers, but it's a hard earned-reputation. It's also one which could slip away with the slightest lapse in concentration. Kim explains that maintaining standards is not just linked to pride in his work, but to business sense as well.

"It is most important because

unless we supply good product, the market may not be there for us the following year," says Kim. "So we try to do everything to the best of our ability and it then usually flows on year in, year out. You would like to think that being disease free, our clients do have a better yield, and a better result from sourcing seed of that nature."

#### Battling bureaucracy

The growing conditions around Crookwell may seem idyllic

but that's not to say growers aren't dealing with similar issues facing their counterparts nationwide. Kim says issues around irrigation and water supply in recent years have proven increasingly challenging.

"Some of the other pressures are probably linked to decisions by governments, in regards to some of the regulations that are put in place," says Kim

"Water is a major one for us and often it seems that we don't seem to have the incentive to increase production in the



## It is a passion to grow a good crop.





district because of some of the rules and regulations that state water have in place."

"Within the last 12 to 18 months they have probably become more onerous and it can be a barrier to business growth."

#### Forging on

Regardless of the difficulties, Kim says he is committed to ensuring seed potatoes remain a viable part of his farming business. Underpinning this is the desire to continue producing the best quality and most disease-free seed possible.

"It is a passion to grow a good crop," he says. "You get a lot of enjoyment out of it and then to sell that seed on and to get feedback that they have performed well, that's the bottom line."

"It means you've done a good job and it gives you the incentive, year in year out, to keep growing seed potatoes." 26 R&D

## Practical research outcomes for the Australian seed potato industry

WITH THE AUSTRALIAN POTATO RESEARCH PROGRAM 2 (APRP2) SET TO CONCLUDE LATER THIS YEAR, WE EXAMINE ELEMENTS OF THE PROJECT WITH PARTICULAR RELEVANCE TO SEED POTATOES.

Reducing the impact of major soil-borne potato diseases including Powdery scab, Common scab and Rhizoctonia has been a key focus of the Australian Potato Research Program (APRP2). APRP2 has involved researchers working to develop new tools and know-how, with a view to allowing seed and commercial growers to reduce their exposure to the costs of these diseases. It is hoped as a result of the research, growers will increasingly be able to manage these diseases using a variety of approaches - based on soil diagnostics, paddock, seed and variety selection, and the adoption of appropriate management practices.

Information and tools that could provide new and, in some instances, more sustainable approaches to disease management are being developed during ongoing research.

The project has been funded by HAL using the processed potato industry levy, voluntary contributions from industry and matched funds from the Australian Government. It has involved research agencies from around Australia and abroad. Below is a snapshot of some APRP2 activities relevant to seed potato production.

## New soil tests to determine the risk of soil-borne diseases

PreDicta Pt is a DNA-based pre-plant soil testing service that provides growers with an estimated risk of Powdery scab, Black dot and Root knot nematode to their crop. PreDicta Pt was developed over phases 1 and 2 of APRP and launched by the South Australian Research and Development Institute (SARDI) in mid-2013. It is already being used by many certified seed growers, who access the service via accredited agronomists or service providers, to assess the risk of disease prior to planting. Growers can also gain accreditation to deliver the PreDicta Pt service by completing a one-day training course offered by SARDI.

Dr Kathy Ophel Keller from SARDI said it is expected that the service will be expanded to include Common scab, *Verticillium* and potentially Rhizoctonia. The results of DNA tests are currently provided for these pathogens/diseases, but without risk ratings, as more work is needed to relate the DNA levels to actual risk of disease in key potato growing regions.



#### Better understanding of seed potato pathogen load and impact on progeny crop

Research conducted at the Tasmanian Institute of Agriculture (TIA) has shown that the current visual ratings of disease, as used by seed certification authorities, correlate well with DNA levels found using the PreDicta Pt test on tuber peel. Regardless of the assessment method used, the presence of pathogen on seed is generally associated with increased risk of disease. These studies emphasise the importance of using the highesthealth certified seed, particularly when planting into soil without a history of disease.

The TIA team is also examining the effect of grading out diseased tubers, both on DNA levels on the seed and on disease levels in the subsequent crop. The team hopes to identify threshold levels of inoculum at which a seed treatment is needed.

"It's testing visually clean material from a seed crop that had some disease in it, and the characteristics there," said Dr Calum Wilson, a senior researcher on the project. Dr Wilson said while some data had been returned, the project was due to be completed later this year.

#### Identifying soil health indicators that can be used to suppress diseases of potatoes

Research is aiming to harness the ability of some soils which appear to have an inherent ability to suppress diseases. This ability is believed to be due to microbes in the soil that either prevent or reduce the impact of some soil pathogens, such as Streptomyces spp that causes Common scab. This work is being done by the Canada-based A&L Laboratories, together with the Victorian Department of

Environment and Primary Industries (DEPI). This research could ultimately result in growers being able to determine if their soils have the potential to naturally limit disease onset in potatoes, and what practices they could use to favour or maintain soil conditions that suppress disease.

Other research is looking at whether some naturallyoccurring, beneficial microbes that live inside potato plants could be harnessed as seed/ soil treatments to enhance potato growth through improved nitrogen and phosphorous nutrition. Work at Flinders University in South Australia is studying how some microbes that actually live inside the potato roots (endophytes) can be used to suppress or reduce root diseases.





#### Building knowledge about crop rotations used in potato production

The impact of crop rotation on reducing or increasing soil pathogen levels is being studied by another team from TIA. This work will help to inform growers about which rotations should be adopted – or avoided - depending on the disease risk. It will provide insight into fluctuations of pathogen populations over time and will further demonstrate the value in using the PreDicta Pt soil-testing service.

Dr Leigh Sparrow from TIA, who is involved in the research said to-date researchers had monitored sites in Tasmania and South Australia from 2005 to 2013.

"So we've taken the soil sample from the same place in each of the 43 fields and measured the pathogen concentration and looked at the crops that were grown in each of the fields each year," he said.

"Then we looked at how the concentrations changed from year to year and took steps to see if we could explain the changes by virtue of what particular crops were grown."

"One of the main indications is that the presence of potatoes is a major influence on

pathogen level, particularly for Powdery scab.'

Dr Sparrow said, though the research was being finalised, it was likely the project would reinforce the importance of resting land between potato crop plantings, among other things.

#### Understanding soil nutrient interactions and their impact on soil-borne diseases

Work carried out by the Victorian DEPI suggests treating soils with sulphur before planting or adjusting zinc levels may help reduce the incidence and/or severity of Powdery scab. Similarly, potassium to magnesium ratios may be manipulated to suppress Common scab. Understanding the critical nutrient thresholds that are associated with the increased risk of disease is the goal of this research, which can be incorporated into recommendations to better manage soil-borne diseases of potato.



International R&D Update

## Handling and storage focus for potato guide

THE UK POTATO COUNCIL HAS RECENTLY RELEASED A GUIDE TO AID POTATO GROWERS WITH THE HANDLING AND STORAGE OF SEED POTATOES, ADDING TO A WELL-ESTABLISHED BODY OF WORK ON THE TOPIC.

t's no secret that quality seed leads to a quality product, and the reverse is equally true. It is also the case that quality of seed depends on a lot more than just what happens in the ground.

Seed potatoes should be handled appropriately in the vital time after delivery and before planting, in order to ensure the best possible, highquality crop.

With this in mind, the UK Potato Council has recently released a helpful document designed to give potato growers a better chance of producing potatoes of the highest standard.

The guide, titled 'Best Practice for Seed Handling and Storage', was authored by Claire Hodge, Technical Executive at the UK Potato Council, and Adrian Cunnington, Head of Sutton Bridge Crop Storage Research.

#### Delivery

To ensure all seed matches order documents and that it is of the quality expected, growers are urged to examine all seed on delivery. If seed is not up to standard, the supplier should be contacted immediately. Growers should check the delivered seed matches the variety, grade and size ordered.

#### Seed handling

The important window after delivery and leading up to planting should be a predetermined amount of time that is monitored carefully. With differing storage time calling for specific maintenance, the guide offers the following advice:

#### Immediate use (few days-1 week)

Bags containing seed potatoes should not be stacked close together – a 15-30 centimetre gap should be left around each bag for air circulation. This can be provided by natural breeze or roof fan assistance. This is important because seed bags, when they are used as storage vessels, do not easily allow air movement.

#### Short-term storage (1-2 weeks)

It is ideal if seed is moved from bags to boxes, but leaving the seed in bags is acceptable if it is well-managed, with due care and attention. It is important that there is adequate airflow around either the bags or boxes





to ensure the seed stays free of condensation. It is possible for condensation to build up in the middle of the bag, out of sight. A good idea is to stand seed bags on pallets to aid circulation.

#### Long-term storage (2+ weeks)

Seed should be moved from bags to boxes. Once moved, the seed should be cured and

ideally placed in a seed store where it should be cooled to approximately 3°C. If a seed store is not available, using temporary ventilation will suffice, but be sure to regularly inspect seed condition and temperature. Temporary ventilation can be done by running a fan at appropriate times. This will minimise condensation, and variable sprouting can be reduced.

## Checklist for seed storage

The guide offers a simple checklist for growers to consider when dealing with storage and handling of seed. It touches on treatment of potato boxes, contamination and hygiene, inspection, and ventilation, to name a few issues to look out for.

#### Managers' Guide

Also available is a 'Store Managers' Guide', which includes a comprehensive store self-assessment table for those working closely with seed, as well as processing and fresh potatoes.

The guide includes a table in which mangers can consider the operation of their own storage facilities, and mark them on a scale in comparison with the suggested best practice. For example, 'hygiene', which includes cleaning frequency and the main method of cleaning used, can be assigned a score of 1 – poor practice, where there is 'no cleaning', to the best practice score of 4, where 'store [is] cleaned daily and disinfectant applied'.

This scale can be used to measure and summarise all practices and features within a seed storage facility, ranging from structure, insulation and ventilation, to fan systems, box stacking, and monitoring. The scale can be used to identify the areas where improvements need to be made. Some problems may be easy to solve, employing only a small change, and will quickly produce significant benefits; others may need longer-term planning to rectify.



To see the Seed Storage and Handling Guide, go to: http://www.potato.org.uk/ publications/best-practiceseed-handling-and-storage

To see the Store Managers' Guide, go to: http://www. potato.org.uk/publications/ store-managers-guide

## Planting the seeds of a worldclass product

#### NEW RESEARCH IS SEEKING TO UNDERSTAND SEED POTATO SYSTEMS IN AUSTRALIA.

Seed certification can play an Simportant role in ensuring buyers end up with the most commercially-viable crops possible. The point of such schemes, which exist both in Australia, and internationally, is to ensure seed purchasers receive a premium-quality product that has been examined by certified laboratories and field inspectors. This process is set up to ensure the seed potatoes supplied to commercial growers remain free from potentiallydestructive pests and diseases, and result in high-yielding crops.

To that end, the Australian National Standard for Certification of Seed Potatoes (ANSCSP) was established in 2007, following consultation with growers, researchers and others involved in the seed, ware and processing potato sectors.

While the national standard is at least equal to others in the world, it may not always fully cater to the distinct and unique needs of all sectors of the diverse industry, challenging the 'bodies' tasked with providing seed certification services.

Therefore potato growers identified a need to investigate how the National Standard may be best interpreted or employed by various certification bodies in each state to provide the highest benefit to the seed buyers. Stakeholders are also eager to ensure that the National Standard in place draws on the most cutting-edge technology currently available, such as recent developments in diagnostic testing. Some Australian growers have remained reluctant to use certified seed for reasons ranging from cost, to scepticism about the benefits. However, many growers who have regularly used good quality certified seed remain convinced of its worth and the positive effect it has on individual businesses, and the wider Australian potato industry. They believe certified seed to be a cornerstone of a thriving industry.

In order to better understand all facets of the current seed certification systems in place, as well as some of the broader issues relating to maintaining high seed quality as it moves through the supply chain, a new project entitled Seed Potato Certification Review is underway.

The project, headed by Dr Doris Blaesing from RMCG, will result in the completion of a report detailing relevant information. This project is funded by HAL using the National Potato Levies with matched funds from the Australian Government.

#### To start

Dr Blaesing says she is currently focused on gathering as much information as possible relating to seed certification and the chain of custody for seed potatoes in Australia. This is stage one of the project. Once the stage one report is completed, a decision can be made on whether further work is required.

"It is important to realise



that the current work is a fact finding process which involves consultation with all industry sectors – from mini-tuber [producers] to seed growers, merchants and processing and table potato growers – to understand issues around seed, and the challenges different industry sectors are experiencing, as well as opportunities for continuous improvement for the benefit of all involved," says Dr Blaesing.

"It really is about understanding what people experience when they grow, store and use seed and what they think the future might look like."

#### The point

Dr Blaesing says the reasoning behind seeking to describe Australian seed certification and management processes is based on the recognised need for all good systems to strive for continuous improvement, and to adapt to changing needs and new technical developments.

"This approach is the hallmark of robust, credible management systems. All accredited systems such as [the National Association of Testing Authorities] NATA, [the International Organisation for Standardisation] ISO or food safety systems rely on regular reviews to ensure they remain

relevant and fit for purpose," she says.

"It is really important to explain that at the moment we are essentially looking at how we can have good quality seed systems that are reliable into the future. So if someone orders seed, it is going to be disease free, true-to-type and well looked after."

Dr Blaesing says the aim of the research is not to dismantle existing processes.

"We're certainly not talking about scrapping the [ANSCSP] standard which is comparable to others internationally," she says. "It's also not about reviewing the different certification bodies... we are just looking at how the systems work."

She adds showing that the entire industry is behind assuring the high-standard of certified seed, via an independent, continuous improvement process could benefit exporting growers, by demonstrating that the

Australian seed industry is committed to providing ongoing certainty about product quality.

"If you buy a brand new car, say a Mercedes, you expect that you are getting a reliable, high-performance car. You don't expect the wheels to fall off," she says. "Like with a premium brand, you want to make sure, if it's an Australian seed potato, you know what you are getting, and it's good."

"To stick with the example, the Merc you bought in 2007 is not the same one you are buying today. The industry needs to take a similar approach to development."

#### Early impressions

Though it's early days for the work, Dr Blaesing says taking a holistic approach, which will likely include elements of the supply chain, is desirable.

"One thing that has been raised by a lot of people ... is that you can have a certified

Like with a premium brand, you want to make sure, if it's an Australian seed potato, you know what you are getting, and it's good.

SEED POTATO SPECIAL then something might go wrong in storage or transport. Then the commercial grower has a bad result, which has nothing to do with the initial quality of the seed," she says. "You may have a situation where maybe seed is being put on the back of a truck in bulk bags, moved long distances and then left in the bags until it is needed. For example, if it rains.'

"There can be a lot of stuff happening in the supply chain after certification."

Dr Blaesing says that's not to say good storage and transportation practice isn't being employed in the industry. She adds, nobody wants to do the wrong thing.

"Of course you have all variations in the middle. Some people have wonderful systems and some people may not, but if you buy seed, at times, you're just not really sure of its history, and you can be at the mercy of external factors."

"There are also a whole range of cost factors, so, whatever might have to be improved or changed must be cost effective. It must be a major consideration.'



For more information: AUSVEG Phone: (03) 9882 0277 Email info@ausveg.com.au Project Number: PT13010

#### 32 R&D

International R&D Update

## Potato propagation's future is up in the air – in a good way

A PROJECT BASED IN THE UNITED STATES AND INSPIRED BY RESEARCH FROM THE INTERNATIONAL POTATO CENTRE IN PERU HAS TRIED OUT A NOVEL WAY OF GROWING POTATOES, WITH THE POTENTIAL TO FREE UP SPACE, INCREASE EFFICIENCY AND BOOST PRODUCTION.

A eroponics – the process of growing plants in the air or in a misty environment without the use of soil – could well be the way of the future for potato growers with limited space. A project being undertaken by Cornell University is using the aeroponic method to grow potatoes in a new and novel fashion.

For the past three years, Keith Perry, Associate Professor of plant pathology and plantmicrobe biology, and Director of the New York State Foundation Seed Potato Program, has been working on an aeroponicbased system, which is showing promise for enhancing potato propagation in New York.

The system has the benefit of speeding up introduction of new disease-resistant varieties for the region. New York State has been riddled with problems relating to one of the world's most destructive plant pests, Golden nematode, which first appeared in the region's soils in 1941. To prevent disease, potatoes from New York are all grown from mini-tubers.

#### The current process

The production process begins with sprouts grown in test tube cultures. Tiny plantlets are transferred to greenhouses once they are tested and found to be free of pathogens. The minitubers are then transplanted and grown in fields at Cornell University's Uihlein Farm. This is done for two successive years before being passed on to seed potato growers, who cultivate them for another two to three years before selling them to commercial potato producers as per the usual process.

These initial steps are very specialised and expensive, with limited capacity due to space constraints in the Uihlein Farm greenhouses. When Mr Perry learned about an aeroponic system developed by researchers at the International Potato Centre in Peru, he immediately saw the potential, so he and farm manager Chris Nobles set out to build their own prototype.

Mini-tubers growing along suspended stems as part of an experiment in aeroponic potato production at Cornell University's Uihlein Farm.

## Creating an aeroponics system

An aeroponics system can be built using basic and inexpensive materials: a large slab of wood, a container to hold solution, piping, a pump, timers and a piece of plastic to create a dark, enclosed chamber. Potato plants grow with their tuberproducing stems suspended in the chamber. They are misted regularly with a recycled nutrient solution.

In the first year, they are raised in pots of peat moss to produce 'mini-tubers'. If the potato plants have thrived, they should produce several minitubers over the course of 70 to 90 days. These mini-tubers are handpicked once they grow to the size of a 20 cent piece. Upon reflection of the process, Mr Perry says time is the key. "We will be able to get growers more of what growers want, in a shorter turnaround time. We will be able to get new varieties into the marketplace faster."

A recent \$US47,260 grant from the U.S. Department of Agriculture Specialty Crops Program will enable the researchers to install another aeroponic chamber next year, then another five the following year. In addition to gains in production, the system will produce savings in materials and labour, Mr Perry says.

"This will allow us to do what we do more efficiently, and help the farm to remain selfsustaining," he says.





2014 National Convention Trade Show and Awards for Excellence



Kahaki Luau

6-9pm Friday 20 June

The Esplanade, Cairns.

Literally translating as 'Beach Party', join in the celebration at the Kahaki Luau. Delegates are invited to kick back and relax with friends and colleagues while enjoying a buffet meal and exciting entertainment. With the ocean in your sights and sand beneath your toes, come and say "*Aloha*" and experience Hawaii without leaving the shore.

## QU POND.

This event is included as part of the full Delegate pass or individual tickets can be purchased though AUSVEG. Email: convention@ausveg.com Website: www.ausveg.com.au



## CALENDAR of events

#### 19-21 June 2014

#### AUSVEG National Convention, Trade Show and Awards for Excellence

Where: Cairns Convention Centre, QLD

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

#### Further information:

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

#### 21 June 2014

1100

**Annual Potato Levy Payers' Meeting** 

Where: Cairns Convention Centre, QLD

**What:** This is an important opportunity for potato levy payers to hear about the collection of the National Potato Levy, strategic priorities for the industry, and updates on current industry issues. It also allows growers to provide feedback on the levy process and R&D levy investment.

**When:** Saturday 21 June 2014, 2:00pm – 2:30pm

#### **Further information:**

To RSVP, please email AUSVEG: info@ausveg. com.au







G<sup>idday</sup> again.

Depending on where you are, it's been hot and dry, wet and windy, or just right. With autumn now here, I hope that the season comes good for you - or stays good, as the case may be!

It's great to see a focus on seed potatoes in this issue of the magazine and I know I will be reading the articles with

interest. It's a smart move to get to know the growers of our seed, how they work and the amount of effort that they put in to growing a good seed crop. While our commercial crops take one season to grow, as much as five years' work goes in to good quality seed crops before planting material can be delivered to us.

Recently I've been lucky enough, along with fellow YPP members, to be asked by Farmoz to contribute to the creation of what we hope will be a really useful app for Australian potato growers. It's really pleasing to see a local company, now with a global presence, keen to collaborate with growers in this way. Watch this space for news of the launch in the months ahead.

As you will recall, we have been running a photo competition, for all YPP Facebook Group members. We are pleased to announce that we have chosen three winners. They are: Dan Parker, Kerry and Bernie Marson, and Daniel Dickson. Congratulations to these YPPs!

An RM Williams bag from Farmoz is on its way to you. Thanks to everyone who shared their images. It's a great way of seeing what you are all up to, and generating conversation. We will run another comp over the coming months, and photos that have been received since the close of this series will all be eligible, so keep them coming in.

Don't forget to join us on Facebook or Twitter to stay in touch. All the best.



Kerry 'n' Bernie Marson - near Euston



Dan Parker - A good day for spraying

Stu

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