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February/March 2013



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Seed certification systems in Australia: are they still meeting industry needs?



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With you from discovery to delivery in potatoes



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AUSVEG Chairman and CEO message



John Brent

AUSVEG Chairman

The past few months have brought with them some of the hottest days on record for rural and regional areas across the country. With bush fires having ravaged areas across several states on the eastern coast of Australia, it is relieving to hear that at this stage, Australian vegetable and potato producers have largely avoided the brunt of the damage caused by these infernos. Others in the agriculture sector, including many in the livestock industry, have not been as lucky, and certainly all growers in regions affected by the fires will be continuing to keep a watchful eye on the weather forecasts and messages from emergency services. Our thoughts are also with those growers who were affected by the catastrophic floods, including in the Bundaberg, Lockyer Valley and Fassifern Valley areas.

With the Australian potato industry's Strategic Investment Plan (SIP) having been finalised and released in late 2012, the year ahead marks the beginning of an exciting new direction for the industry. The new SIP will guide investment of the National Potato Levy into appropriate R&D projects and initiatives, and aims to anticipate the challenges and opportunities on the horizon for the industry.

The importance of the Australian potato industry investing in innovative R&D is proportionate to the future sustainability and competitiveness of both the fresh and processed sectors. Ensuring then that the industry has a clear direction and plan for not only the foreseeable future, but into the years ahead, is a key part of this process.

The SIPs for both the fresh and processed potato sectors seek to increase the communication and collaboration between the sectors, whilst also bolstering the importance of R&D. Details on the development process and objectives of both SIPs can be seen on page 14. I strongly encourage all potato levy payers to become actively involved in the industry's R&D initiatives - whether it be field day events, workshops or on-farm trials - and to take advantage of the benefits stemming from your levy funds.

The broader Australian horticulture industry has long understood the necessity of being adaptable and applying innovative approaches into their operations. Rightly, our industry continues to invest heavily in a range of R&D programs and activities, which if properly utilised, will undoubtedly lead to increased efficiency, yields and profitability. Pest and disease management, new approaches to crop protection, irrigation efficiency and mechanisation are just some of the areas that are currently being investigated in our industry's R&D program.

We must continue to support relevant and innovative R&D projects, which will be crucial to enhancing the industry and moving it in a more positive and profitable direction.

John Brent
Chairman
AUSVEG



Richard Mulcahy

AUSVEG Chief Executive Officer

In early 2011, industry consultation on the Draft Potato Cyst Nematode (PCN) National Management Plan took place in major potato production regions across Australia. The plan aimed to collate regulations throughout each state and territory to ensure a standardised and uniform approach to the eradication of PCN for the Australian potato sectors. Industry representatives, growers, packing and processed figures and state representatives were involved with the consultation process. The plan had been finalised by mid-2012 and was planned to be presented by industry in March 2013 to the national Plant Health Committee.

However, the Victorian Government has recently developed its own PCN Management Plan which ignores the industry consulted and approved national approach and has ignored due process. The Victorian PCN plan is to be legislated in early February, 2013. Industry and AUSVEG have contacted relevant state agricultural ministers to convey the consequences which this new Victorian plan will inflict on the national potato sectors.

Industry met with the Victorian Department of Primary Industries (VIC DPI) in late January, 2013, to express concerns over the deviation from the National PCN Plan,

which had been approved by industry. As the national Peak Industry Body representing the interests of Australian potato growers, AUSVEG's primary concerns surround the time frames and implementation of the procedure set out in the document. If legislated and followed, the period of time will provide insufficient notice for industry members to implement the new requirements prior to harvesting this season.

Obviously if this initiative were to be introduced, it would undoubtedly cause undue stress and complications for growers and their operations in what are already difficult times. AUSVEG has asked VIC DPI to continue in discussions regarding the best management strategy for the control of PCN in Australia at the national Plant Health Committee, with their interstate counterparts and importantly with industry.

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www.ausveg.com.autwitter.com/ausveg

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**FRONT COVER:**

Matt, Lawrence
and Brendan Gallagher

Photograph by Simon Linge

Editorial

The second edition of *Potatoes Australia* for 2013 presents readers with a collection of fascinating grower features, industry columns and R&D investigations. Our cover feature for the February/March 2013 edition of the magazine is Lawrence Gallagher and his sons, Matt and Brendan. The processed potato growers based in Waubra, Victoria, detail their passion for growing and the key to succession in the industry (page 16).

Elsewhere, seed potato grower Colin Ayres talks about his

experiences in the industry in Western Australia (WA). A third generation grower and Chair of the WA Seed Potato Producers, Colin shares his opinions on the supermarket duopoly, seed growing and the importance of his team (page 20).

R&D coverage in this edition includes an analysis of the new Strategic Investment Plans (SIPs) for the fresh and processed potato industries. The article details the process for developing these important plans and what they aim to achieve for the industry - which

includes guiding future levy investment and placing an emphasis on innovative R&D (page 14). Seed certification schemes are investigated for their efficiency and reliability and whether the national standards need to be revisited (page 25). And a project examining integrated strategies for managing Bacterial wilt in potatoes is covered (page 23).

The young grower section of this edition features Stephen Rockley of Atherton, in Far North Queensland. Stephen describes his background in the

industry and his thoughts on its future (page 12).

Industry columns Soil solutions, Ask the industry and the Pests & diseases profile all return for on-farm management techniques and advice. A special insight into irrigation also appears in this edition (page 11). And carrying on the importance of R&D in irrigation, the Potato Industry Extension Program column details projects which hold relevance for potato growers and investigates management of water efficacy (page 30).

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Stephen Rockley



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Soil solutions: Which test is best?





Bungaree, VIC

Upcoming potato R&D Field Day

- Bungaree, Victoria

Following a successful first year in 2012, the Potato Industry Extension Program will kick off its 2013 series of events later this month with a potato R&D Field Day. The event will be held on the property of a local potato grower in Bungaree, Victoria - just a few kilometres from Ballarat.

Leading interstate-based researchers will join the event to present to growers, processors, agronomists and other members of the industry on several important R&D projects, and to discuss how the outcomes of these can be used on-farm.

Dr Kathy Ophel Keller, from the South Australian Research and Development Institute (SARDI), will discuss the development of a DNA

testing service for soil-borne pathogens. Part of the broader Australian Potato Research Program Phase 2 (APRP2), this research project (PT09023) has been widely praised for the significant benefits the testing service will deliver to the industry, by helping to manage and reduce the risk of soil-borne diseases in potato plants. Dr Ophel Keller will also discuss the commercial roll-out phase of the testing service, which is due to occur this year.

Also joining the event is Dr Paul Walker, from the Tasmanian Institute of Agriculture (TIA), who will present on two R&D projects he's currently involved with: Improving the management of white-fringed weevils in

potatoes; and Monitoring for incursions of the Tomato-potato psyllid in Australian potato fields.

Attendees will then hear from Bannockburn-based Senior Agronomist at Landmark, Alistair Tippett, who will discuss the results from recent field trials of controlled-release nitrogen fertilisers, to meet total nitrogen requirements. Undertaken on potato crops in the Ballarat area, the trials have produced some strong results, of which recently featured in a prominent article in *The Weekly Times* newspaper (January 23).

And capping off the diverse program of potato R&D topics being covered at the Field Day will be a presentation by Victorian based HORTUS

Agronomist, Tom Farmer, who will speak about the importance of crop management, and monitoring plant and soil health in potatoes.

Attendees will have the opportunity to partake in a Question & Answer session with all of the speakers presenting, and will then embark on a field walk, to discuss the research topics amongst the crops.

The Field Day will finish up with a free BBQ lunch.



For more information on the event and to RSVP, please contact:
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Phone: (03) 9822 0388
Email: info@ausveg.com.au
Project: PT11004

Eat ugly fruit & veg says UN



'Think, eat, and save' is the slogan of a new joint campaign between the United Nations Environment Program (UNEP) and the Food and Agriculture Organisation (FAO) to change shopping attitudes that see losses of 1.3 billion tonnes of food each year.

Targeted at consumers, food retailers and the hotel and restaurant industries, the global initiative prompts buyers to consider the fruit and vegetables that do not meet familiar standards. 'Buy funny fruit and vegetables' the campaign urges

- referring to the produce that would otherwise be thrown out because of their size, shape or colour.

In a statement, UN Under-Secretary-General and UNEP Executive Director, Achim Steiner, said the attitudes of consumers and the wasting of food needs to be addressed.

"In a world of seven billion people, set to grow to nine billion by 2050, wasting food makes no sense - economically, environmentally and ethically."

According to the campaign, planning meals, making

shopping lists and avoiding impulse buying will assist in avoiding unnecessary food waste. The campaign also urges consumers to be mindful and conscious of marketing tricks that lead buyers to purchase more food than they need.

Director General of the FAO, Jose Graziano da Silva, said that approximately 300 million tonnes of food is wasted each year in industrialised nations: "because producers, retailers and consumers discard food that is still fit for consumption." The Director General

continued on to say that the gargantuan amounts of wasted food is more than what is currently produced in sub-Saharan Africa, and is enough to feed the estimated 830 million people who now go hungry worldwide.

Source: freshplaza.com



For more information visit:
thinkeatsave.org

Notice of Annual Potato Levy Payers Meeting 2013

This is an official notice to all levy paying potato growers advising that the Annual Levy Payers Meeting for 2013 will be held in June on the Gold Coast, Queensland.

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.

Where: Jupiters Gold Coast, Surfers Paradise, Queensland **When:** Saturday 1 June, 2013 2.00-2.30pm



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



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An insight into irrigation

AS ONE OF THE KEY INPUT COSTS FOR GROWERS, IRRIGATION IS A VITAL ELEMENT OF CROP PRODUCTION. VICTORIAN-BASED AGRONOMIST, SAM BIRRELL, WITH IRRIGATION LEADER NETAFIM, DETAILS SOME OF THE DOS AND DON'TS OF EFFICIENT IRRIGATION.

What are some of the most common challenges that growers face in regards to irrigation?

"The nexus between water saving, precision and energy use. Furrow irrigation can use less energy but is wasteful of water and fertiliser. Sprinklers and drip irrigation are precise and efficient but use energy."

How can these challenges be addressed?

"Growers can overcome these issues by maximising yield and minimising inputs, such as water, fertiliser and energy. In many situations lower energy drip irrigation is the best compromise of all of these factors."

How can growers effectively manage their irrigation/water applications?

"Automation is important. If the grower has the system automatically changing over after a specific run time, and fertiliser injections automated within these irrigation events, the likelihood of waste is reduced. It also gives growers time to focus on other facets of the business."

"Also, understanding the science of irrigation scheduling - evapotranspiration and crop co-efficients. There are many tools, such as weather station data and soil moisture monitoring that can be used to add precision to irrigation schedules."

What new irrigation technologies are available to growers to increase their water use efficiency?

"Drip irrigation, particularly of potatoes, had been complicated because of having to put a fitting in to lay flat hose and then attach the drip line. This fitting only lasted a few years. One of the most significant systems is FlatNet™. The system has a pre-welded fitting that lasts over 10 years - it has been a game changer in terms of the viability of drip irrigation in crops where the system must be laid out and recoiled each season."

What are some of the benefits for growers who convert to drip irrigation in potato crops?

"When water was in short supply in the early 2000s, many potato growers used drip irrigation with success. Water was saved, but also fertiliser due to the precise injection of nutrient. Because the drip



“Efficient irrigation is not just about saving water, it should be an integrated strategy to minimise costs per hectare and maximise marketable yield.”

irrigation systems run at around 200 Kpa (even less with new low energy filters) compared to overheads, which run at pressures of 300 - 400 Kpa, the energy cost of drip is less. The energy required to run travelling gun irrigators is even more, at approximately 700 Kpa. Now we are in 2013 and water is not in such short supply, but fertiliser and fuel are more expensive than ever. Growers should calculate the savings of fertiliser and fuel that drip irrigation could achieve over high pressure overhead and travelling gun irrigation methods."

What are some of the aspects that growers need to think about/

plan for when wanting to put in a new irrigation system?

"Hydraulic design is essential. Sprinklers and drippers work within a certain pressure window. If the pressure is outside this, the uniformity of the system will be lost. Good design can also save money by smart placement of sub mains, for example."



To watch an informative video of drip irrigation systems in action in the United Kingdom visit: www.youtube.com/watch?v=hVRJl6Q-VrM



Q&A Young grower profile



Name: Stephen Rockley

Age: 36

Location of farm: Atherton, Far North Queensland

Work/Title: Manager/Farmer

Grows: Potatoes, Beef Cattle, Hay and Corn



How did you first get involved in the industry?

I was born and raised around the farming industry, having grown up on the family farm. It has been passed down over three generations.

What is your role on the farm?

Just like my father and his father before him, I have taken on the role of farm manager.

What does your average day on the farm involve?

Early starts for one (laughs). General duties such as laying out feed for the cattle and various other animals we have looming around the property, machine maintenance, loading produce onto transport trucks and also onto customers' vehicles.

What do you enjoy most about working in the industry?

The satisfaction of growing a good crop is one of the most enjoyable parts - which hopefully equates to positive feedback from our buyers. And also being your own boss and seeing the rewards for all the long hours.

What are the biggest challenges you face as a grower?

Firstly, the weather is one of the biggest challenges. The market is also forever changing and is so uncertain. Where we are is a significant distance from the market itself as well. The sad

thing is, for us to have a good return for our produce there really needs to be a supply shortfall in the south.

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

This is a very tough question to answer. In my opinion, most young people are either one of two things: born into the industry with the birth intent to continue the farm, or they inherit the farm through family. Also a lot of the younger generation don't see a reliable future in the industry and can have a more secure income working off-farm like mining or other jobs, which gives them a life of not being tied down with jobs that need to be taken care of seven days a week.

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

One of our biggest threats would be the unbelievable numbers of foreign produce being brought into Australia. Also the standards we have to have for accreditations to be able to supply the markets. And the large supermarkets have way too much control over pricing in the market place.

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

I would be working a nine-to-five job, or possibly have taken up a trade as a builder or boilermaker or something like that.





Strategic Investment Plans

for the fresh and processed potato sectors

GUIDING FUTURE LEVY INVESTMENT AND INVESTIGATING AREAS OF OPPORTUNITY IS VITAL TO ENSURING A SUSTAINABLE FUTURE FOR THE AUSTRALIAN POTATO INDUSTRY.

In 2012 Strategic Investment Plans (SIPs) were developed for the Australian fresh and processed potato sectors. These plans aim to ensure the future success of the industry by steering the investment of the National Potato Levy into priority R&D areas over the next five years (2012-17). The SIPs were developed to reflect the industry's needs, incorporating the Australian Government's rural R&D priorities.

With several key challenges affecting the competitiveness of the Australian potato industry - including high labour costs, increasing imports, the high Australian dollar and rising input costs - increasing on-farm efficiency and continuing to effectively manage plant and soil health issues, will be vital for the future prosperity of both the fresh and processed potato sectors. Adopting innovative R&D into on-farm practices will

therefore play a pivotal role in addressing these issues, and will help ensure that the industry can stay viable for many years to come.

Many producers recognise that growing is not simply an occupation, but also a science - with consideration given to soil, nutrition and variable climate conditions. R&D activities and outcomes therefore have become increasingly important in helping

growers to achieve disease-free, high yielding and superior quality crops. This is reflected in the new SIPs. Increased communication between both sectors and industry members is another area which has been identified, with the SIPs determining that each sector will significantly benefit from, and be strengthened by, a greater collaboration between each other.



Why were new SIPs for both the fresh and processed potato sectors prepared?

Strategic Investment Plans are developed to ensure there is direction and appropriate funding of R&D priority areas in the industry. The plans are re-evaluated intermittently to ensure that focus is relevant to the demands and issues affecting the industry, both currently and in the near future. This includes an emphasis on innovative R&D, the effective communication of R&D amongst industry members and opportunities that will generate increased profitability and sustainability.

What did the process involve?

AUSVEG engaged an external consultancy firm, Stride Consulting, to develop the plans. Led by Dr Denis White, the process involved reviewing the current state of both the fresh and processed industries and developing a situational analysis, identifying the desired direction and goals of the sectors through input from a broad range of industry members, devising strategies that will help the sectors to achieve these goals, and finally producing a series of recommendations - or an 'Action Plan' - moving forward.

Who was consulted?

Consultations were conducted with several dozen members of

the Australian potato industry both face-to-face and via telephone - including visits to key potato growing regions of South Australia, Tasmania and regional Victoria. Meetings were also held with members of the Industry Advisory Committees (IACs) for both the fresh and processed sectors, with feedback and suggestions from the IACs incorporated into the developed plans. Draft versions of both plans were submitted to both IACs in mid-2012 for review, with suggestions made by IAC members incorporated into the final versions of each plan. The SIPs for both sectors were formally submitted to HAL in June 2012.

The SIPs will be reviewed on an annual basis and as such, there will be ongoing opportunities for broader industry feedback and input into the 2012-17 SIPs at regional industry extension events, as well as the Annual Potato Levy Payers Meetings.

What do the Plans aim to achieve?

The SIPs for both the fresh and processed potato sectors have two key purposes. The first is to provide guidance for decisions relating to the future investment of the National Potato Levy into relevant R&D initiatives. The second purpose is to analyse the industry's challenges and identify future areas of opportunity to increase competitiveness and sustainability.



The Strategic Investment Plans for the fresh and processed potato sectors for the 2012-17 period focus on several key objectives to achieve growth, profit and development across the industry.

1. To increase innovativeness and competitiveness.
2. To increase usage of practical research findings.
3. To enhance communication and well-founded understanding of the market.
4. To effectively enhance the cause of the Australian potato industry.



Australian potato levy payers can obtain an official copy of the SIP relevant to their sector. If you would like a hard-copy of either the Fresh or Processed Potato SIP mailed to you, please contact AUSVEG on (03) 9822 0388 or info@ausveg.com.au.



Gallaghers in succession

A PASSION FOR GROWING AND A HUNGER FOR SUCCESS SEE THE GALLAGHER SONS, MATT AND BRENDAN, WORKING ALONGSIDE THEIR FATHER TO CONTINUE ON THE FAMILY LEGACY, WRITES CAITLIN RODÉ.

A half hour drive out of Ballarat, one of Victoria's key potato growing regions, finds processed potato producing family, the Gallaghers. Driving up the dry dirt road to the family property, you can't help but look out at the gargantuan white wind turbines that are speckled across the hilly area. Pivot irrigators can be seen in the distance drenching the lush

green potato crops and much like any other rural property, a pageant of small and large barking dogs greets the car as it turns into the drive way. On this hot and humid day, the three Gallaghers that grow the spuds - Lawrence, Matt and Brendan - ensure that the pivot irrigators are in full swing across their 3,300 acres of land.

"The spuds have been

praying for a drink - so we are just making sure all the irrigators are running smoothly," says Brendan. It's a warm and windy afternoon, and heavy rain clouds can be seen in the distance, which hopefully means the crops will have a good shower on the way. As the jovial and mild mannered young growers trudge over the golden straw which encircles the crops

on each of their properties, it's easy to see the passion and enjoyment they have for the job.

Some might remember eldest son Matt from Channel Nine's ratings winner, *Farmer Wants a Wife*. While he concedes that unfortunately he didn't find wedded bliss on national television, the charismatic grower still shows optimism for the future - be it in love or



“ They have always been keen to be involved with the business - I’ve always said to them right from when they were young that the farm would be going to them. ”

- Lawrence Gallagher.



Matt and Brendan Gallagher and left with their father Lawrence.



expanding the operations on the farm.

Sharing the on-farm responsibilities come hand-in-hand with the family operations he says: “We all take care of different areas on the farm, but if there’s something that needs to be addressed we will all manage and help each other

out and work towards the same goal.”

“I used to get off from primary school and come home and be out on the tractor. I wanted to get involved as early as I could - I just loved it. I absolutely live for it - it’s all I’ve ever done.” Most growers say that succession has been, and

continues to be, one of the most important aspects to the success and sustainability of the industry. With young people bringing in fresh ideas, new approaches and a renewed passion for the job, training and educating the next generation of producers is an act which father, Lawrence, has been

demonstrating with his sons for over a decade.

“The boys started getting involved straight after school,” says Lawrence. “They have always been keen to be involved with the business - I’ve always said to them right

continued over page ▶



“ I used to get off from primary school and come home and be out on the tractor - I wanted to get involved as early as I could - I just loved it. ”

- Matt Gallagher.



from when they were young that the farm would be going to them, and that it was up to them how hard they work and whether they wanted to buy more land or sell it up. They just love it.”

The property which the family grow on today has been in the family since the 1950s, and it's always been spud growing. Producing for the processed industry, Lawrence says the way forward in the sector may very well depend on the Australian dollar and how the next generation of growers handle the challenges on the horizon.

“Potatoes can be a risky

crop to grow now. There are rising fertiliser bills, water bills and the cost of buying good seed potatoes, it can get to a point where you wonder if it will be worth doing it down the track,” he says with an air of discontent.

“The family farms are doing it tougher from the cost/price squeeze. In Waubra, I'd say every thirty years there are half the farmers on the land. It's the same all over Victoria and Australia though,” he says.

Recent figures released by the Australian Bureau of Statistics reveal that the number of farmers in Australia has been

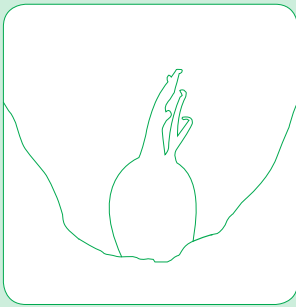
declining for decades as small farmers sell up to large-scale farming operations, and fewer young people take over family farms. The statistics state that there were 19,700 fewer farmers in Australia in 2011 than in 2006, a fall of 11% over five years. It was also reported that Australia's farmers tend to be considerably older than other workers - in 2011 the average age of farmers was 53 years, compared with 40 years for people in other occupations. This is a trend which many in the sector, including leading agribusinesses, hope to combat by attracting and training more young bloods in the industry through scholarship programs and new training initiatives.

While succession is an avenue which most growers believe is the best way forward, should we really only be prompting people already in the industry to take hold of the reigns, or can more of the right people be found

beyond the confines of the family paddocks? The difficulties facing 'outsiders' to get started in the industry, including the costs of leasing land and setting up infrastructure, have been flagged by many as a barrier to attracting a younger workforce. With this in mind, perhaps the way forward for the industry will include both the succession of family growers and bringing in new members with skills that can be applied from outside of the industry.

Matt and Brendan Gallagher are a positive reminder that the love and enjoyment for growing is still very much alive amongst many of the young members of the industry today. And encouraging and supporting them as the winds of generational change blow through the sector in the years to come will undoubtedly be vital in ensuring that potato growing in Australia can remain sustainable long into the future.

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“ One bloke by himself is useless. It is the team that makes it. ”

- Colin Ayres.

Growing is in the Ayres

PRODUCING QUALITY SEED POTATOES IS NO MEAN FEAT. WESTERN AUSTRALIAN BASED GROWER, COLIN AYRES, BELIEVES IT'S NOT THE MAN THAT MAKES THE SPUD - BUT THE TEAM.

‘Home of the stud spud’ is what reads on the labels of GP Ayres and Sons’ seed potatoes from Albany, Western Australia (WA). Based in one of the most southern regions of WA, third generation grower and vocal advocate for the Western Australian seed potato sector, Colin Ayres, manages the family business and the dozen employees who make up his diligent team. Supplying WA growers and also growers on the eastern sea board, Colin, alongside wife Janine, son Chris and their team, grow on the very property that has been in the family for the past century.

“My father and uncle were farming and growing seed potatoes in Albany on the same property we’re on today - it’s been in the family for about 100 years actually,” says Colin proudly.

“My grandfather came over from England in 1912, and worked for the Postmaster-General’s department and farmed on weekends. The family began vegetable growing and that evolved into seed potato production in the 1950s. We’ve been growing seed potatoes since the sixties.”

With son Chris working alongside, Colin says that

succession planning has and will continue to be vital in ensuring the success of the sector into the future.

“Succession planning in the industry is very important - it always has been. If you have people that are working in the industry for 10, 20 or 30 years, you need to have some security of tenure about what’s going on. You don’t just want to be working in agriculture for thirty years, have the old man fall off the perch and it all turns to mud,” he says.

Tasks on the farm each morning for Colin depend on the season, whether it be planting,

harvesting or having a meeting with the team. Listening to Colin describe the operations on-farm, the appreciation for the people he works with is evident through his praise for their efforts.

“We have about 12 people working in the team here on the property - I really do lead a great team. Inevitably in these sorts of operations it’s not one bloke that does everything, it’s with a team.”

With harvest from February to May, it’s a busy time for the close-knit crew. Colin describes some of the obstacles they face in the industry today: “Growing seed potatoes has different



Photographs by Sheridan Powell.



Colin Ayres.



[L-R] Royce Meade, Mark Newbey, Jake Langdon, Lisa Boegheim, Matthew Rowe, Raymond Attwell, Chris Ayres, Colin Ayres, Janine Ayres, Albert Manoni, Sandra Manoni, Graham Constable, Jack Stallard, Rosie Ayres, Axel Chaux and Josepha Lucbernet.



continued over page ►

challenges than growing a fresh market or processing potato crop. But economics are the most challenging thing - increasing input costs and reasonably static returns.”

“The biggest threat to the industry today in terms of the fresh market in WA would be the retail sector being controlled by two companies, Woolworths and Wesfarmers. The second threat running close on the heels of that would be biosecurity issues and the risks of pests coming into Australia,” says Colin.

The supermarket duopoly is a facet of the industry which prompts a passionate response from most growers.

“In terms of the control by retailers, not just for horticulture but more broadly, Australia’s retail sector should be modelled similar to that of the US, where any particular company can only have 20% share of the market,” says Colin.

With a sense of frustration in his voice, Colin explains: “Woolies and Wesfarmers have taken over not just groceries but

liquor, fuel, nurseries, everything. Both are extremely polished retail outfits, it’s good for the consumer now, but in the future the consumer will have the choice of only what the supermarkets will stock or they go without. And that’s a great pity - you see that happening on the shelves now.”

No stranger to grower organisations and advocating for the industry, Colin is the Chair of the WA Seed Potato Producers. He says with a chuckle that they call themselves ‘WASPP’.

“We’re a fairly new organisation, we’ve only been around for about two or three years. Our main charter is to look after issues relating to seed potatoes in Western Australia.”

“We have had a good deal of success - we’ve managed and continue to manage the Potato virus Y issue in WA, which has resulted in an R&D project. We also put together a field day event at Busselton - one of the main points of that was to show how viruses transpire in the fields to young growers and also to refresh the skills of some

“ You don’t just want to be working in agriculture for thirty years, have the old man fall off the perch and it all turns to mud. ”

- Colin Ayres.

of the older growers. We had nearly 70 growers in attendance so that was really good to see them come out and take part,” he says.

When asked of who he thought would benefit most from venturing out to spend a day on the farm with a grower, Colin leans towards the consumers.

“I think consumers and chefs that complain about the lack

of choice when it comes to potato varieties should come out on-farm and see what growers are doing. There are so many varieties being produced now, the options are always increasing. The most rewarding thing I think for a grower is to see a crop that’s planted well, harvested well and performs well for the customer.”



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Bacterial wilt (*Ralstonia solanacearum*).

Controlling the wilt

MANAGING BACTERIAL WILT IN SOLANACEOUS CROPS IN TROPICAL REGIONS OF AUSTRALIA AND THE PHILIPPINES IS THE MAIN OBJECTIVE OF A COLLABORATIVE R&D PROJECT.

A soil-borne disease of vegetable crops, including potato, tomato, capsicum and eggplant, Bacterial wilt (*Ralstonia solanacearum*) has multiple strains and can cause significant crop losses.

The disease causes 70% of crop losses in potatoes and tomatoes in North Queensland from hot and wet conditions.

Generally introduced through infected planting material, the disease can survive in the soil on alternate hosts and can be spread in the field through irrigation and also on-farm equipment.

Communicating R&D

A collaborative research project is investigating improved management strategies for the

identification and control of Bacterial wilt in solanaceous crops in Australia and the Philippines. Plant Pathologist, Nandita Pathania, with the Department of Agriculture, Fisheries and Forestry in Queensland, is leading the Australian branch of the research and has made efforts to communicate information to growers about the disease in the affected regions.

“Symptoms show the partial wilting of the plant, during hot and humid temperature conditions. The whole plant itself might look ok, but if you see the partial wilting of the leaves and foliage start to fall off it could be an indication of infection,” says Ms Pathania.

“Bacterial wilt more so affects tropical regions as the weather

conditions are more favourable, with the heat and moisture - tomatoes, capsicum and eggplant can be affected.”

Identifying the disease

Through the project work, researchers identified that there are currently two strains of the disease present in Australia.

One of which is a common tropical strain, capable of infecting solanaceous crops including weeds, and the other a cool climate strain which is not as common, though potato specific and only found in the Atherton Tablelands, Queensland. As the disease is quarantined in Australia, trials were carried out in pots under contained environment conditions.

“When the weather conditions are quite hot and humid, sometimes the pathogen can survive in the tubers. So if the tubers are then exported or transferred to another location, sometimes it will spread the virus with the infected potatoes,” says Ms Pathania.

“Seed potato growers can use good soils, perform crop rotations and use healthy seed to protect the crops from the virus.”

Infected seed is a key avenue of spreading the disease. It is more so the slightly infected seed which can cause the most damage as heavily infected seed will generally rot prior to planting. It can be difficult as the seed which shows no visible symptoms can pose a serious threat of spreading to

Some of the best prevention and management strategies for Bacterial wilt present in northern Queensland include:

- Use clean/healthy seed.
- Grow in the dry times of the year to avoid moisture.
- If an infection is identified, isolating those infected fields/plots.
- Perform crop rotations with non-solanaceous crops.

new areas. If a plot is infected, the disease may remain in it for several years after the initial outbreak.

Generally, most potato varieties do not exhibit a resistance to Bacterial wilt, any expresses of resistance to the disease are largely temperature and pathovar specific. Results from the trials showed that biofumigation and soil amendment with organic and inorganic manures were effective in reducing levels of Bacterial wilt in soils and delayed the onset and

establishment of the disease.

“From the project work we now know that there are different races of this Bacterial wilt and the other strains affect a number of other crops like banana and tobacco and all solanaceous crops. So we know what races are present in the growing regions here, what the distribution is and in what areas it is more prevalent,” says Ms Pathania.

“We can speak to growers now and tell them what the problems are in specific areas and what they can do to

manage it. We know now that the disease is also present in the soils - it's not always coming from the seed.”

Soil-borne diseases and viruses constitute the major threats for growing potatoes in tropical regions. According to the project work, there is a requirement for cost-effective quality seed that can be accessed by smaller grower operations. Future research into soilless technology, or aeroponics, of potato seed production is to be analysed as part of a linked project with the Australian Centre of International Agricultural Research (ACIAR). Aeroponics are increasingly becoming incorporated into potato seed growing operations and systems across various countries. The establishment of a cost effective aeroponics system could provide the private sector with the ability to provide quality seed at a faster rate and supply at an affordable cost.

Photographs courtesy of Nandita Pathania, DAFF and Plant Protection Service Archive.

THE BOTTOM LINE

- A collaborative project is investigating improved management strategies for identification and control of Bacterial wilt in solanaceous crops in Australia and the Philippines.
- Bacterial wilt affects tropical regions as the weather conditions are more favourable, with the heat and moisture.
- Through the project work, researchers have identified that there are currently two strains of the disease present in Australia which affect different crops.



For more information please contact:

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Fisheries and Forestry QLD
Phone: (07) 34046999
Email: Nandita.Pathania@daff.qld.gov.au

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Seed certification systems in Australia:

are they still meeting industry needs?

DISEASE-FREE AND HIGH QUALITY SEED POTATOES ARE INVALUABLE TO A SUCCESSFUL CROP. CERTIFICATION SCHEMES IN AUSTRALIA AIM TO PROVIDE BUYERS WITH THE BEST SEED POSSIBLE - BUT COULD WE BE DOING IT BETTER?

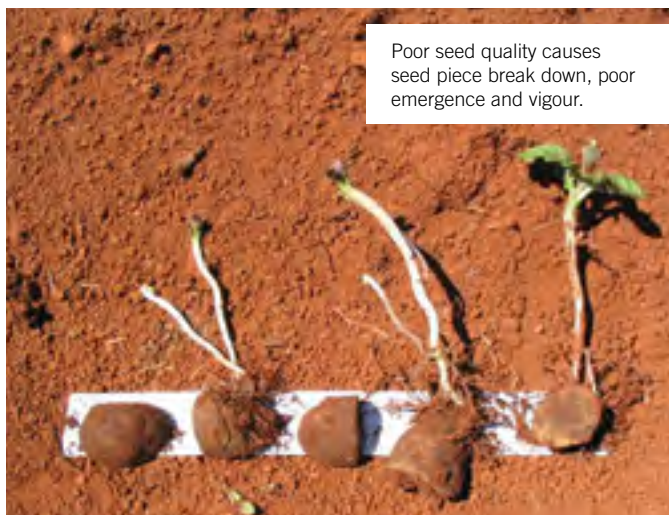
Seed certification schemes are an initiative established across potato industries - domestic and international - to ensure growers are using only the most superior seed potatoes, grown, handled and stored with care, and free from pests, diseases and viruses, to produce high yielding and high quality crops. Interestingly, it is estimated that only around 40% of all potatoes planted

for commercial production in Australia originate from certified seed - with a majority of the remaining producers using seed potatoes which have been grown on-farm. Reasons for this vary, with some growers stating that the costs of using certified seed are too high, while others simply remain sceptical about the benefits of using it. Yet, many growers who use good quality certified seed, say it has

enhanced their returns through improved marketable yields.

In 2007, the Australian National Standard for Certification of Seed Potatoes (NSCSP) was released, prepared in consultation with seed growers, researchers and members across both potato sectors. While the initiative attempted to unify the state based standards with a single set of minimum

field and tuber production criteria, the reality is that the standards are progressively being implemented with state variations. Consequently, differing levels of grading and quality control of seed potatoes appears to be clouding the system. Concerns have been raised by prominent industry members about the lack of a unified approach to certification schemes in Australia. The



Poor seed quality causes seed piece break down, poor emergence and vigour.



Poor seed quality leads to gaps in crops and yield loss.

confidence in quality assurance for seed has been said to be fading, where some seed potatoes are making it through the inspection system with objectionable levels of virus infection.

President of Seed Potatoes Victoria, Charles Exton, says the current seed certification scheme has got problems, relative to each state.

"Each state is varying with the standards and approach [of the National Standard Certification of Seed Potatoes]. I don't think we are all working on the same level. Each state has different problems."

"In Victoria, they've just introduced a blue label to cater for Potato virus Y, which I personally don't think is a good

idea because the tolerance rate has gone out to 4% - instead of 2%. I don't think that is the answer to solve the problem. I know it was brought in to help growers market their seed but it is still spreading the disease. If we want to have a top quality potato, or seed potato, we can't go around giving tolerances away like that," he says.

Mr Exton whole heartedly acknowledges that the industry needs to move towards a more unified standard or scheme to make sure that buyers will get the same quality no matter where they have bought their seed from.

"In regards to quality issues, there are complaints all the time. There are places selling certified seed which need to lift

their game and stop these lines getting through that are over the tolerance rate. How they are getting certified and getting past the [inspection] scheme is disappointing. We have expert growers in this country and I think we should all be under the same umbrella throughout Australia - that's what the national standards were set up for I thought."

Absent of a truly unified and structured national scheme, ambiguity over the quality of certified seed has also now become an area of concern for export opportunities. Seed customers and importers want assurances about the quality of the seed potatoes they purchase. At present, it could be said that there is a level of despondency amongst some industry members about the lack of commitment to national standards. Industry needs to ensure that no matter what state the seed potatoes originate from, buyers (domestic or international) will receive product which has met an agreed standard.

How should this issue be addressed? Certain production regions are buying seed potatoes from interstate and with no body to standardise the seed being grown, do buyers simply take the assurances from the seller?

Tasmanian potato grower, David Addison, says the industry needs to come to a solid agreement on how seed certification needs to be managed.

"With the various state governments in recent times declining to oversee the certification of seed potatoes, the industry now needs to look at how certification should be managed."

"All participants with an interest in seed potato production, especially the commercial growers being the customer, should combine to decide suitable management, processes and procedures to allow adequate supply of seed, but also ensure quality, health and value to the seed buyer," he says.

Utilising the most innovative technology to ensure seed potatoes are virus and disease free is another area where researchers and industry members are shining the light of attention.

"It is now increasingly possible to use new scientifically sound methods to reinforce the visual

inspections in support of the certification standards and this aspect should be included in discussions. Maybe a review of the national standards established in 2007 to include science based methods, or at least allow for inclusion of science based evaluation as it is developed," says Mr Addison.

Does the industry need renewed leadership in this area? Growers across Australia are being encouraged to give their opinion and feedback on the current state of certification schemes. What are the benefits of the current schemes? What are the downfalls? Would a national unified approach based on the latest science be valued amongst members of the industry and their operations - or simply be attempting to fix something that isn't broken?

Despite the fact that there are varying views on the efficacy and value of seed certification schemes, it is clear that industry needs to come together to forge a new way forward in this important area. Ensuring the spread of virus and diseases in potato crops is controlled, will be proportional to the future successes of our sectors.

The question for the industry is: How to proceed?

FEEDBACK

AUSVEG is requesting feedback from all growers in the industry who have had involvement with a seed potato certification scheme, whether it be producing for or buying from it. What have the benefits been to your growing operations? Are there areas which need to be improved?

THE BOTTOM LINE

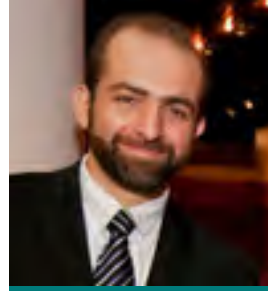
- Members of the industry are raising questions about the efficacy of the current national scheme for certified seed potatoes.
- There is concern that the national standards are being increasingly applied with state variations.
- AUSVEG is requesting feedback from industry on whether a new unified national approach is needed.



For more information:
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Telephone: (03) 9822 0388
Email: info@ausveg.com.au

Stellar speakers

at this year's Convention



Professor of Robotics
and Intelligent Systems,
Salah Sukkarieh



Merchandise
Director Coles,
John Durkan

Presenting a new program and an impressive line-up of prominent speakers, the 2013 AUSVEG National Convention, Trade Show and Awards for Excellence is set to entertain and educate members across all areas of the Australian horticulture industry. Two of the guest speakers include an esteemed expert in robotics and a well-known Merchandising Director with one of Australia's leading retail chains.

Professor of Robotics and Intelligent Systems, Salah Sukkarieh, with the Australian centre for Field Robotics at

the University of Sydney, will address delegates with a speech on 'Field Robotics for the Farm of the Future.' Having led numerous research and commercial automation projects, Professor Sukkarieh will present examples of how field robotics have transformed various Australian industries and how systems are being developed to support the vision of an autonomous farm of the future. An insightful and educational speaker session, the address will no doubt prove to be a highlight for those in the industry investigating innovative

technology and how it could benefit farming operations. Merchandise Director, John Durkan, with leading Australian retailer Coles, is set to give a speech to delegates about its commitment to 'Helping Australia Grow.' Mr Durkan has been with Coles since July 2008. He boasts a wealth of retail knowledge and extensive buying and product development experience, having worked for 17 years with UK retailer Safeway Stores, which at the time boasted a 500-store network spanning convenience stores and supermarkets. The

address will look at how Coles has fundamentally changed how it sources fresh produce under its 'Australia First' policy and how it hopes to work closely with individual farmers to improve quality, drive innovation and fund value campaigns to grow sales across the category.



For more information:
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Email: convention@ausveg.com.au



Racing into the next generation of growers

With the date for the Convention fast approaching, the young bloods of the industry may want to practice their manoeuvring skills for the newest young grower event: the NextGen Grand Prix. Registered attendees will be taken from Jupiters Gold Coast at 2:00pm, Saturday June 1, to

a go-karting track for the racing event.

The adrenaline pumping, high speed occasion, sponsored by Dow AgroSciences, will give young growers from across the country and the industry the opportunity to socialise, forge new relationships and of course, have fun.

Many within the industry recognise that young growers bring fresh ideas, new approaches and a renewed passion to the sector. Supporting and encouraging them will be vital not only to the success of their own business ventures, but also the success of the industry into the future.

AUSVEG welcomes all growers 35 and under to register for this exciting event. While the event is free, registration is required to attend the NextGen Grand Prix, and spaces are strictly limited - so apply now!

Nominate for the 2013 AUSVEG National Awards for Excellence online

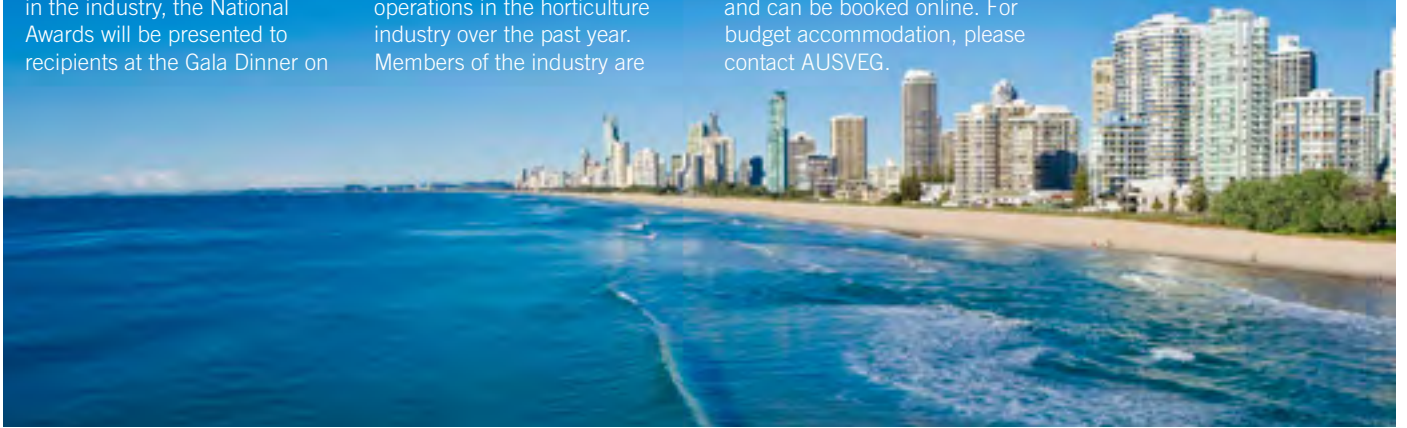
Nominations for the 2013 AUSVEG National Awards for Excellence can now be submitted online via the AUSVEG website. Making it easier to recognise and congratulate the best of the best in the industry, the National Awards will be presented to recipients at the Gala Dinner on

Saturday 1 June at the 2013 AUSVEG National Convention, to be held at Jupiters Gold Coast.

The National Awards for Excellence will recognise and congratulate the achievements of leading individuals and operations in the horticulture industry over the past year. Members of the industry are

strongly encouraged to submit their nominations now.

Delegate registration for the 2013 AUSVEG National Convention is also now available online. Discounted accommodation is also available and can be booked online. For budget accommodation, please contact AUSVEG.



Delegates at the Trade Show of the 2012 AUSVEG National Convention at Wrest Point Hotel Casino, Hobart.

Key industry leaders to exhibit at Trade Show

Leading agribusinesses and suppliers are set to pack the Trade Show floor at the 2013 AUSVEG National Convention, with 75% of booths and show space already sold. To be held in the Pavilion Gallery at Jupiters Gold Coast, delegates can expand their knowledge of the latest innovative products

available via a walk-through of the all-encompassing demonstrations.

Showcasing all aspects of the industry, including machinery, research and the supply chain, the event will be sure to impress members of all sectors. With exciting displays and exhibits, delegates can learn

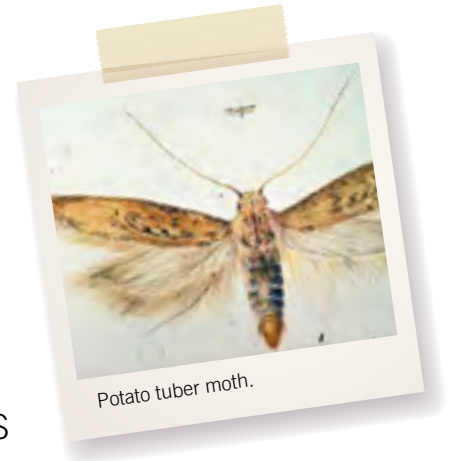
about pioneering technologies, valuable R&D outcomes and on-farm improvements and practices. The Trade Show will boast displays from key industry leaders including AUSVEG's Leading Strategic Partners Bayer CropScience, Syngenta, Elders and DuPont.



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Controlling tuber moth in potatoes

THIS EDITION OF THE PESTS AND DISEASES PROFILE FROM DOW AGROSCIENCES LOOKS AT THE CONTROL OF THE POTATO TUBER MOTH IN POTATOES AND OTHER SOLANACEOUS CROPS IN AUSTRALIA.



The adult Potato tuber moth (PTM) has a wing span of approximately 13 mm. Female moths can lay 100 to 300 small white eggs on the undersides of leaves or on exposed tubers, which can take from five days to several weeks to hatch, depending on the temperature.

Larvae grow to about 12 mm long before spinning a cocoon and developing into dark brown pupa. The moth can complete its life cycle in about a month in summer, resulting in several generations in a year.

Damage

Of the chewing insect pests of potatoes, PTM is generally accepted as the most important.

It also attacks other solanaceous crops including tomatoes and weeds. The larvae tunnel into leaves and stems causing the loss of leaf tissue, wilting, and the promotion of rots. Larvae often attack the plant at growing points of terminal shoots or in the axils of leaves causing plants to die off prematurely. Potato tubers in the ground are attacked by larvae which either develop from eggs laid on the tubers or which migrate from the foliage. Tuber damage is most severe in heavy soils which crack readily when conditions are dry late in the growing season. Post-harvest, larvae hatching from eggs

that were laid in the field can damage tubers in storage.

IPM

Integrated Pest Management (IPM) is often about studying the life cycle and ecology of a pest and trying to exploit any weaknesses. IPM has the benefits that naturally-occurring beneficial arthropods are essentially free, and cultural methods can often be cheap and easy to implement.

Insecticides can and should be used in IPM programs, but their use should be considered, well-timed and not a last resort once other tools have failed. Often, the reliance on insecticides is unsustainable, with overuse almost inevitably leading to resistance. Prior to the withdrawal of the organochlorine pesticides and synthetic insecticides, with the exception of endosulfan in 1987, the industry tended to rely solely on insecticides for control of PTM. Their withdrawal prompted the industry to study IPM on the moth extensively and the adoption of IPM throughout the industry is now widespread.

A recent R&D project gave an excellent account of the many beneficial arthropods (including predators and parasitoids) recorded in potatoes in Australia. Predators include

damsel bugs, Pentatomid bugs, lacewings, ladybirds, red and blue beetles and spiders, while several species of Hymenopteran parasitoids have been documented attacking PTM. Beneficial arthropods can account for significant PTM mortality in the crop and often result in insecticide applications being unnecessary. PTM larvae are also attacked by granulosis virus, which can cause more than 90% larval mortality (Horne and Page, 2008).

Effective cultural control techniques include: soil preparation, irrigation, crop rotation, planting timing, management of alternative hosts, rolling and hilling with fine soil, the use of certified seed and careful varietal selection. Cultural techniques aim to reduce pest numbers and reduce moth and larval access to tubers. Well-timed irrigations keep the soil moist and prevent cracking. The moist soil resists penetrating larvae or moths and also favours sturdy plant growth.

Simple hygiene, such as the removal of tubers from the field as soon as possible after digging and storing them away from any sources of potato moth, can aid in reducing losses. Pheromone traps are available to trap male moths and indicate changes in numbers.

Chemicals registered for control of PTM

Currently registered chemicals for PTM control include organophosphates (Group 1B), carbamates (Group 1A), pyrethroids (Group 3A), diamides (Group 28) and the spinosyns (Group 5). Some of these insecticides (e.g. the organophosphates and pyrethroids) are highly disruptive to beneficial arthropods and should be avoided if possible, although they can be used strategically in IPM systems.

The spinosyns have been demonstrated to be relatively selective to most beneficial insects although they are harmful to wasps until the spray deposit is dried. Success NEO® is also an IPM-compatible insecticide for control of PTM in potatoes and other solanaceous crops.

References

Horne, P., and Page, J. (2008). *Integrated Pest Management dealing with Potato tuber moth and all other pests in Australian potato crops in Advances in Crop Research (2008)*.

Photograph courtesy of the Central Science Laboratory, Harpenden Archive, British Crown.

Potato Extension Program



Tap into efficient irrigation

DISCUSSING THE IMPORTANCE OF EFFECTIVE IRRIGATION MANAGEMENT FOR POTATO CROPS, THE POTATO INDUSTRY EXTENSION PROGRAM TAKES A LOOK BACK AT SOME OF THE R&D PROJECTS COMPLETED IN THIS AREA IN PREVIOUS YEARS, AND THE KEY OUTCOMES THESE PRODUCED.

Over the past couple of months, potato growing regions right across Australia have experienced some extremely hot, dry and windy conditions. Conditions like these are always a concern for potato growers, particularly when they coincide with the tuber initiation and bulking phase of a crop cycle - as was the case for many growers in January this year. With the lack of rainfall over the summer period, coupled with exceptionally warm temperatures, many growers were rightly concerned about the amount of water their young crops were receiving.

The effective management of irrigation is critical in maximising yield and quality

of potato crops. Maintaining good crop health through appropriate irrigation management is key to avoiding the onset of pests and diseases, and may also lead to better cosmetic qualities of tubers - a significant factor for the fresh potato sector. Importantly, efficient irrigation also plays a valuable role in reducing the overall input costs of growing operations.

The Australian vegetable and potato industries have funded some important R&D projects which have examined irrigation systems and practices that will help to improve the yield and quality of potato crops, and enhance on-farm water efficiency. To ensure that growers

are better aware of some of the useful outcomes that have stemmed from R&D activities in this area, we've highlighted a couple of these projects below.

PT00004 - Potato Irrigation - Development of Irrigation Scheduling Guidelines

This project was completed several years ago, though its outcomes certainly remain relevant and useful for growers today. This project was developed following a demand



in Western Australia (WA) from both the fresh and processed potato sectors for increased yields of higher quality potatoes.

The importance of effective irrigation management in achieving these attributes was widely recognised, however many of the irrigation requirements relevant to the varieties grown in WA were deemed either poorly defined or not fully understood.

Project PT00004 sought to investigate the losses that growers were experiencing at the time as a result of (suspected) over-irrigation, irrigating at unsuitable times, and/or the possible leaching of fertilisers from the root zone of a crop. The project aimed firstly to investigate the efficiency of the most commonly used irrigation systems in the Manjimup-Pemberton area of WA and to provide recommendations for the improvement of these systems where necessary. Researchers aimed to develop irrigation scheduling guidelines for a range of key potato varieties, using various soil moisture monitoring techniques. It was expected that this work would help growers maximise yield and quality and the efficiency of their water use.

A series of surveys on irrigation practices by growers operating in the area revealed a number of issues that needed to be addressed. For instance, many of the growers surveyed tended to under-supply their crops with water, particularly during the critical early-mid tuber bulking period. Interestingly, surveys also found that low sprinkler operating pressure was to blame for poor irrigation consistency within the most commonly used semi-permanent sprinkler irrigation systems. The project involved a number of field experiments, which were used to examine the yield and tuber quality of several key varieties of potatoes to varying levels of soil moisture

at different stages of crop growth. A range of irrigation schedules were examined and soil optimal irrigation schedules for several varieties were discussed.

This project produced some useful results for Australian potato growers. While its core focus was on potato production in the Manjimup-Pemberton area of Western Australia, growers around the country can nevertheless benefit from the R&D work conducted. The project was funded by the Horticultural Research and Development Corporation.

VG00407 - Improved irrigation management in potatoes and onions

Conducted by the (then) Queensland Department of Primary Industries, this project involved a series of experiments at the Gatton Research Station, to investigate the irrigation requirements for optimum production of potatoes and onions. Growers in Queensland were generally utilising traditional methods to manage their irrigation systems - including calendar scheduling, 'gut feeling' and a 'kick at the ground'. It was recognised that the adoption of more precise irrigation scheduling systems would significantly benefit growers.

The on-farm trials involved the use of tensiometers, instruments which are used to measure and monitor the status of soil water. Tensiometers have proven particularly useful in horticultural crops which require frequent irrigation and were used by researchers in the trials to monitor the soil water status of the shallow root zones of potato crops. Irrigation was applied at varying soil depths and

at different stages of crop growth. In an effort to maximise the understanding and adoption of technology used and developed in the project, researchers also conducted commercial-scale demonstrations and worked collaboratively with up to eight potato growers across 23 sites.

Ultimately, the project highlighted the benefits of precise irrigation scheduling and demonstrated that by tailoring irrigation to the specific requirements of their crops, growers could maximise production by minimising or reducing plant water stress, nutrient deficiencies, disease levels and problems with leaching.

The project also showed that through the adoption of 'objective' irrigation scheduling, growers could generally become more water efficient; potentially use less pesticide; and could even increase their profits or expand their markets with improved and consistent product quality.

The project was funded by the Horticultural Research and Development Corporation, with the support of the Queensland Fruit and Vegetable Growers.

Potato levy payers can download the Final Reports for the above projects and others by visiting the R&D Knowledge Management System (KMS) on the AUSVEG website (registration required) at www.ausveg.com.au.

Potato levy payers are encouraged to learn more about industry R&D to benefit their own operations.



If you require assistance using the KMS please contact AUSVEG
Phone: (03) 9822 0388
Email: info@ausveg.com.au

Ask the industry



with Scott Mathew

WITH THE POTATO GROWING SEASON FOR MOST REGIONS NOW IN FULL SWING, QUESTIONS REGARDING CROP MANAGEMENT AND PEST CONTROL ARE INCREASING AMONGST INDUSTRY MEMBERS. TECHNICAL SERVICES LEAD AT SYNGENTA, SCOTT MATHEW, ANSWERS YOUR QUESTIONS IN THIS EDITION OF ASK THE INDUSTRY.

Question: I regularly inspect my crops for aphids, with none being present, and then suddenly they seem to appear out of nowhere. Where do they come from?

A few aphids (or even a single aphid) can fly in from many sources around your crop or property. This is all that is required to start an aphid infestation in your crop. These flying aphids can originate from numerous sources, ranging from a few hundred metres away to several hundreds of kilometres.

Green peach aphid (GPA) (*Myzus persicae*) is the most common aphid of potato crops in Australia and is generally considered the most important aphid pest to control for the following reasons:

- It survives on a wide variety of plants including canola, lupins and weeds (such as wild radish and wild turnip)
- It is the most efficient vector for Potato leaf roll virus (PLRV)
- A number of GPA populations have developed resistance to insecticides making them hard to control

Question: Aphids only seem to be

a real issue at certain times in my crop. What conditions favour their development?

Environmental conditions during the growing period of your potato crop will greatly influence the aphid population. Being relatively small and not protected by a hard shell, aphids do not generally survive very well under the hot conditions over the key summer months of December and January. Aphids are generally a real problem during autumn and spring, with the population declining in the warmer months. However, the aphid populations can explode towards the end of February when conditions become milder.

Question: What is considered the best way to monitor for Green peach aphids?

Monitoring your potato crops for aphids before spraying is a great way to save time and possibly reduce the unnecessary costs of calendar spraying your crops. You should only spray if you find aphids. You should select to monitor two to three sites within a crop and check a minimum of 20 plants

per site, walking into the crop in a diagonal pattern, stopping every two to three steps to check a plant for aphids. When doing this, remember to take into account that it is likely that higher aphid numbers may be present around the edges of your crop because the winged aphids that fly in are more likely to land at the edge of the crop than the middle.

Question: Where am I most likely to find aphids on a potato plant?

The Green peach aphid is nearly always found on the lowest leaves of the potato plant. However, if there is a large population of aphids they are often found towards the top of the plant on the younger leaves. Also, remember that other aphids that may attack potatoes tend to be found first on the newer growth.

Q

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

Soil solutions



with Rohan Davies

Which test is best?

TECHNICAL AGRONOMIST WITH INCITEC PIVOT FERTILISERS, ROHAN DAVIES, DISCUSSES THE DIFFERENCES BETWEEN LEAF TISSUE TESTING AND PETIOLE SAP TISSUE TESTING IN POTATOES.

Leaf tissue testing and petiole sap tissue testing can both be very useful in checking nutrient levels within the plant to ensure that there are no nutritional restrictions to yield. Leaf testing involves randomly sampling at least 25 leaves from the crop at a definable growth stage, usually defined as those which are youngest but fully expanded. After the sample is dried and analysed by a laboratory, your adviser will interpret the results against the known critical concentrations of the nutrients needed at that growth stage to reach targeted yields.

There is a wealth of information derived from research into critical concentrations of nutrients for specific crops that your adviser will use to interpret the test results, most notably Reuter and Robinson's *Plant Analysis - An Interpretation Manual* (1997). The concentration of a nutrient in the plant generally reflects the availability of that nutrient to the plant, but results can be affected by issues such as pests, diseases or environmental influences such as moisture stress. Leaf tissue testing can be time consuming due to the drying requirements and analysis required. This means it is worth selecting an efficient laboratory and a speedy courier service to ensure that the test results can be utilised to alleviate nutrient limitations.

The other option for mid-season testing is petiole sap tissue testing. Sap testing was developed as a quick test to give growers immediate results so they could adapt their fertiliser programs in a timely manner. For mobile nutrients in the potato plant, such as nitrate, potassium, chloride and sodium, measuring the sap flow can be simpler, faster and just as accurate as leaf tissue testing. Sap testing uses its own set of interpretation data and has its own difficulties.

Sap test results can be strongly influenced by the temperature and the

time of day that the sampling takes place.

Soil moisture and even light intensity can influence sap flow. Therefore, ensuring consistent conditions or recording the conditions at sampling to assist interpretation is critical. Another downside to sap testing is that the results show only the nutrient that is limiting, not the status of a range of nutrients. It is rare that only one nutrient is a problem. Another nutrient may become limiting soon after correcting the identified deficiency. Sample contamination or samples breaking down before they reach the laboratories are other common problems.

When using either leaf tissue or petiole sap test results, remember that:

- The sampling was carried out at a specific point in time during the life cycle of the crop or the season and relates to that time specifically
- Most of the measurable parameters are likely to change as temperature and moisture content change
- The results are based on a sample from a few places in the whole area under consideration
- The material sampled is variable and biological in nature and
- There is always an inherent error in all results - they may only be accurate to +/- 10%

Despite these limitations, petiole sap or leaf tissue testing are both very useful tools to manage crop productivity. Incitec Pivot Fertilisers' Nutrient Advantage® laboratory offers leaf tissue testing for potatoes.



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



Fighting the Green peach aphid resistance

AN R&D PROJECT BASED IN THE UK IS INVESTIGATING WAYS TO COMBAT AN INCREASING GREEN PEACH APHID RESISTANCE TO APHICIDES.

The project, conducted by Rothamsted Research, will monitor the response of live samples of *Myzus persicae*, known as the Green peach aphid (GPA), to a range of innovative Aphicides, and also monitor for resistance. The work commenced in April 2012, and will culminate in March 2015. A collaborative initiative, several leaders of the agriculture industry are involved including Bayer CropSciences, BBRO, Belchim, DuPont, Nufarm, Sumitomo, Syngenta and the Agriculture and Horticulture Development Board.

As well as monitoring the response of field-collected live samples of GPA to various

Aphicides, other aphid pests (including cereal aphids) will be monitored, and baseline data will be constructed.

The reaction of the Green peach aphid, an important virus vector, carrying different combinations of metabolic and target-site neonicotinoid (insecticide) resistance to seed and foliar-treated plants will be observed in laboratory-based field simulator chambers. New screening tools for innovative Aphicides will be developed for use in regional laboratories or by advisors and growers.

According to the Potato Council UK and project leader Stephen Foster, the need for this work has been intensified

by recent occurrences of control failures with neonicotinoids against the Green peach aphid in southern Europe. This is perceived to pose a substantial new threat to aphid control in the UK. Resistance to insecticides could obviously be a cause of concern for growers and industry.

Increasing resistance can have adverse effects for treatments on potatoes, as well as a range of other crops including sugar beet (given that there are currently no viable alternatives to neonicotinoids on this crop), brassicas, salads and ornamentals. This would ultimately heighten the risk of the evolution of resistance to

non-neonicotinoid compounds such as pymetrozine and flonicamid. The Scottish seed potato industry is also heavily dependent on controlling Green peach aphid. Annual losses to the UK potato industry from aphids and the viruses they transmit are estimated at around £12m (or approximately AU\$18m), half of which is in the seed crop.

Photograph by Scott Bauer, USDA Agricultural Research Service.



For more information on R&D projects involving the Potato Council UK, visit: potato.org.uk

The Green peach aphid (*Myzus persicae*).



CALENDAR of events



27 February 2013

Potato Industry Extension Field Day

Where: Bungaree, Victoria (near Ballarat)

What: The Potato Industry Extension Program will be holding a Field Day later this month, which will provide potato producers with an opportunity to hear about a number of important industry R&D projects and how the outcomes of these can be utilised on-farm. Leading interstate-based researchers will join the event to discuss their projects, and a number of local agronomists and industry service providers will also talk about recent crop trials and new approaches to crop management. The event will finish with a BBQ lunch.

Further information:

AUSVEG (03) 9822 0388
or info@ausveg.com.au

22 - 23 March 2013

Spudfest

Where: Pinnaroo, South Australia

What: The annual event aims to promote agricultural sectors and agribusinesses in the Southern Mallee, Victorian Mallee and Riverland areas. The Mallee region represents one of the largest growing districts for South Australia, providing approximately 41% of the state's potato production. The festival will celebrate and acknowledge those involved with the potato industry, with proceeds from the event to be distributed to regional community groups.

Further information:

Spudfest Committee Chairperson,
Ann Venning
0428778421

30 May - 1 June 2013

AUSVEG National Convention, Trade Show and Awards for Excellence 2013

Where: Gold Coast, Queensland

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

Further information:

AUSVEG (03) 9822 0388
or convention@ausveg.com.au

Saturday 1 June 2013

Annual Potato Levy Payers Meeting 2013

Where: Jupiters Gold Coast, Queensland

What: This is an official notice to all levy paying potato growers advising that the Annual Potato Levy Payers Meeting for 2013 will be held in June on the Gold Coast, Queensland. 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.

Further information:

AUSVEG (03) 9822 0388
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