

potatoes

australia

June/July 2011

Mark du Plessis

South Africa's driving force

Max McKenna

A beacon for success

Black dot

DNA testing to help
avoid Black dot

AUSVEG Potato Summit

Global flavour highlights
inaugural Potato Summit

Making a world of difference downunder.

Australian potato farmers face competition every day from the world's most efficient producers. To remain competitive and productive, you need the very latest technology.

ENTEC® is a revolutionary fertiliser enhancement proven in many countries around the world. It works downunder in your soil to minimise losses and improve nitrogen efficiency, helping you to enhance your opportunity to grow more potatoes of a better quality.

Don't chance it. Enhance it with ENTEC for:

- Potentially higher yields with improved crop quality*
- Reduced costs with fewer fertiliser applications
- Reduced losses from nitrogen leaching and denitrification
- Balanced nitrogen supply to help meet plant requirements for more consistent, quality produce.

SUSTAIN & GAIN WITH



For more information, see your local ENTEC
Accredited Incitec Pivot Distributor or call 1800 009 832.

*Yield data of ENTEC® based on field trials. Incitec Pivot Limited ABN 42 004 099 264. ENTEC is a registered trade mark of E+S Agriculture Pty Ltd.

Incitec Pivot Fertilisers is Australia's leader in soil and plant nutrition, investing locally in innovative products and agronomy solutions to help Australian farmers remain globally competitive. www.incitecpivot.com.au



potatoes australia

AUSVEG Chairman

John Brent

AUSVEG CEO

Richard J. Mulcahy

Communications Manager

William Churchill
AUSVEG
Ph: (03) 9822 0388
Fax: (03) 9822 0688
william.churchill@ausveg.com.au

Advertising

Max Hyde
Ph: (03) 9870 4161
Fax: (03) 9870 4163
M: 0408 558 938
max@hydemedias.com.au

Graphic Design

Brinelle Hateley
AUSVEG
Ph: (03) 9822 0388
Fax: (03) 9822 0688
www.ausveg.com.au

Print

Southern Colour Pty Ltd

Distribution Queries

AUSVEG
Ph: (03) 9822 0388
Fax: (03) 9822 0688
admin@ausveg.com.au

Contributors

Gretel Sneath, Karen Shaw, Paul Walker, Paul Downard, Rene de Jong and Sean Richardson.



Horticulture Australia

All research and development projects are facilitated by HAL in partnership with AUSVEG, and in relation to processed potatoes also the PPAA, and are funded by the National Potato Levy and/or voluntary contributions from the industry. The Australian Government provides matching funding for all HAL's R&D activities. For further information visit www.ausveg.com.au

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

Disclaimer: AUSVEG makes this magazine available on the understanding that users exercise their own skill and care with respect to its use. Before relying on or altering any business practices, users should carefully evaluate the accuracy, completeness and relevance of the information for their purpose and should obtain appropriate professional advice relevant to their particular circumstances. This magazine contains views and recommendations that do not necessarily reflect those views of AUSVEG. Special care should be taken with agricultural chemicals which may have been used experimentally but are not yet registered for commercial use. Clarification should be sought from the researchers or chemical manufacturers.

© Copyright AUSVEG Ltd and Horticulture Australia Ltd 2011

This work is copyright. Apart from any use as permitted under the Copyright Act 1968, no part may be reproduced by any process without prior permission from AUSVEG. Requests and inquiries concerning reproduction and rights should be addressed to AUSVEG at:

PO Box 2042, Camberwell West, Vic, 3124
ISSN 1834-2493



▶ FRONT COVER:

Mark du Plessis

Photo supplied by Charmain Pieterse



John Brent AUSVEG Chairman

We're now two months removed from the AUSVEG National Convention, and congratulations still continue to flow in for what was an amazing event.

Following what was the biggest Convention AUSVEG has held to date, with nearly 1,000 delegates converging on the Sebel-Citigate Hotel in the heart of Brisbane, I have received many notes of thanks and praise from the various sections of the horticulture industry that were in attendance.

The Speaker Sessions featured industry leaders from Australia and abroad addressing key issues pertinent to all involved—from growers, to members of the supply chain and executives at the largest companies in the business.

The Trade Show featured over 70 amazing exhibits with crowds packing in to get a glimpse of the various trade stands, which featured many state-of-the-art technologies, the latest pest management products on the market and a range of R&D news and information.

The highlight of the weekend was undoubtedly the Awards for Excellence Gala Dinner. With over 400 guests in attendance, the atmosphere was one to behold. Select industry leaders were recognised for their service and excellence, and my congratulations once again goes out to each of them.

We were also very fortunate to have significant representation from our elected Members of Parliament.

I would once again like to

thank our guest of honour for the evening, the Minister for Agriculture, Fisheries and Forestry, Senator The Hon. Joe Ludwig, for his involvement in providing the keynote address on the night.

I would also like to take this opportunity to thank the guests who made the incredible effort of flying from countries such as the United Kingdom, USA and South Africa. In particular, the Director of the UK Potato Council, Dr Rob Clayton and CEO of Potatoes South Africa, Mark du Plessis. Your involvement in the event was very much appreciated.

After such a successful event, it is hard to imagine what next year's festivities will provide. I have no doubt that it will once again be an

incredible spectacle, and I invite everyone to keep an eye out for developments in *Potatoes Australia* as we approach 2012.



John Brent
Chairman
AUSVEG

Richard Mulcahy AUSVEG Chief Executive Officer

Country of origin labelling has become a hot topic for discussion in the media and among politicians in the past few months, as AUSVEG has escalated pressure on the retailers to be upfront with their customers.

AUSVEG has been staunch in its approach to ensure a level playing field for the industry in calling for mandatory country of origin labels that provide customers with full details in relation to where a product has been grown or produced.

Under the Competition and Consumer Act 2010, 'Made in Australia' can be used in labelling processed vegetables if more than 50 per cent of the value of the product is added in Australia, regardless of where

the vegetable comes from. This can even include the cost of the container and the cost of labelling. Appearing last month on *Today Tonight*, I was able to put AUSVEG's support behind local growers in calling for a change to these laws so that customers can make informed purchasing decisions and choose to support Australian producers if they wish to.

Of particular interest to readers of *Potatoes Australia* will be the 'Don't Take the Risk!' campaign launched by AUSVEG in April.

'Don't Take the Risk!' is directed at Biosecurity Australia and aims to prevent the potential incursion of Zebra Chip disease from New Zealand into Australia, following a

request from New Zealand for market access to import fresh potatoes for processing.

With Zebra Chip disease having decimated the New Zealand industry, it is of utmost importance that we protect the potato industry in this country from the same devastating fate by ensuring that the Zebra Chip disease complex does not reach our shores.

AUSVEG has and will continue to campaign with the relevant authorities to ensure that the voices of Australian potato growers are heard.

Following on from the incredible success of this year's AUSVEG National Convention in Brisbane, work is already well underway to find a location for the 2012 event. Stay tuned for

news about where this major event will be held next year.



Richard J Mulcahy
Chief Executive Officer
AUSVEG



Editorial

In this edition of *Potatoes Australia*, we were fortunate enough to talk to two very important people in the potato world. One is a key player in the international industry, and the other has been involved in the Tasmanian industry for over 50 years.

Mark du Plessis, CEO of Potatoes South Africa has been monumental in providing steady leadership for that country's potato industry. In our interview with Mr du Plessis the way Potatoes South Africa has approached revitalising the various sectors in the potato industry it deals with, as well as the issues the South African

industry faces with the rest of the potato-growing world, are discussed. Mr du Plessis was also one of the speakers at the AUSVEG Potato Summit in April, and information on this can be found on page 12-13.

Coinciding with the Mr du Plessis story, we have also featured Potatoes South Africa in the International R&D Update, with a look at the areas they are currently focusing their research and development on.

Max McKenna is one of the longest-serving growers in the country, with over 50 years of involvement in the industry.

Mr McKenna was the recipient of the Industry

Recognition Award at the AUSVEG National Convention in April.

Having served on numerous boards and councils, as well as being a recipient of the Order of Australia for Services to Agriculture, his story is a fascinating one.

Also featured in this edition is an overview of the AUSVEG National Convention and Potato Summit. The Summit featured leaders in the industry from Australia and abroad, and provided some real insight for those in attendance.

Convention coverage can be found on pages 10-14, including an abundance of

images from the big weekend.

With nearly 1,000 delegates having attended the Convention, it goes without saying that it was a great success. Guests got the chance to view many different exhibits at the expansive Trade Show, listen to industry leaders talk at the Speaker Sessions, and attend entertaining events including the VISY Celebrity Chef Lunch and the Bayer CropScience Sporting Identities Event.

Looking forward to the 2012 Convention, we are very excited to see another strong contingent of Australia's potato industry.

Making irrigation simple with Nelson's 3000 Series Pivot Sprinklers

When it comes to choosing the right sprinkler configuration for your crop type, soil type, system type, and water and energy needs, Nelson makes it simple. We can help you choose the product that best suits your needs, with an aim to maximise your returns, using Nelson's complete line of advanced design pivot sprinklers.

www.nelsonirrigation.com.au



Pg 16 Max McKenna: A beacon for success



Pg 31 Young Grower Profile: Chris Ayres



Pg 24 Improved diagnostic DNA testing to help avoid Black dot



Mark du Plessis - Pg 18

Contents June/July 2011

Features

- 10** 2011 National Convention celebrates staggering success
- 12** Global flavour highlights inaugural Potato Summit
- 16** Max McKenna: A beacon for success
- 18** Mark du Plessis: South Africa's driving force

R&D

- 22** Improving the management of White-fringed weevils in potatoes
- 24** Improved diagnostic DNA testing to help avoid Black dot
- 26** Sowing the seeds for a stronger market
- 28** APRP2 Update: Fighting the fungi

Regular Items

- 4** Chairman and CEO's message
- 5** Editorial
- 15** Ask the industry
- 30** International R&D Update
- 31** Young grower profile
- 32** Soil Solutions
- 33** Potato Varieties
- 34** Pests and Diseases Profile
- 34** What's on

News

- 8** Pesticide use requires patience and care
- 8** Growcom takes on minor use permits
- 9** World Potato Congress 2012 website launched
- 9** The Top End hosts plant pathology conference
- 9** Late blight resistance ensures lives are saved
- 14** AUSVEG National Awards for Excellence (winners)

Pesticide use requires patience and care

With different pesticides being used in research projects and experiments, it is imperative that potato growers continue to follow directions when it comes to their use, writes Frank Mulcahy.

Agricultural chemicals are combinations of molecules that when applied at strategic timings have an effect on the target. As an example, a spray/graze herbicide applied to a pasture will 'sweeten' target weeds and make them palatable to livestock. The herbicide alters the plant and then the animal grazes the plant into oblivion.

One levy funded potato research project is investigating the novel use of a herbicide to control a pathogen.

Researchers have discovered the herbicide, 2,4-D, when

applied in very small amounts at strategic timings will minimise the effect of common scab.

Great work by the researchers and they have made a point of warning producers that the research is in progress and to not try this at home. It is imperative that growers do not pre-empt the final research findings and apply 2,4-D in potato crops.

2,4-D is not registered for use in potatoes and has a debilitating influence on potato plants at field application rates.

In fact, if potatoes are planted

into soil that has been sprayed with 2,4-D the result can be a worthless crop. Even worse, if traces of the chemical are found in the tubers it will be pretty bad news for the owner of the crop. Residues of unregistered chemical is not what our industry needs; we must not jeopardise our status in the market.

My experience with 2,4-D can be seen in the accompanying images. These shots are of potatoes that have been planted into land where the previous crop (rice) was sprayed with

2,4-D. Plants will exhibit a strong 'hormone' effect, the apices of the plant will become bunched and the leaves contorted.

It is far worse news below ground. Tubers will be small and distorted.

The researchers are proving their findings and this may take a couple of years.

Registration of chemicals is also time consuming and involves a considerable amount of money.

Be patient.



Apical bunching of a potato plant caused by 2,4-D



2,4-D tuber deformation

Growcom takes on minor use permits



Growcom has recently taken over the role of managing minor use permits for HAL and AUSVEG in a move that is hoped will simplify the process for all horticulture.

Approximately 400 minor use permits are now being held by Growcom, after a decision by Horticulture Australia Limited (HAL) and AUSVEG to consolidate them within one organisation.

The decision was made in order to streamline arrangements, as Pest Management Industry Development Officer at

Growcom, Janine Clark explains.

"HAL and AUSVEG agreed that it would make sense to have one body hold all permits which would consolidate all activity in one spot, improving areas such as communications," Ms Clark said

"Since Growcom has been dealing with minor use permits

for a decade or more and has itself held 30-40 permits it was agreed it would be appropriate for it to pick up this task for horticulture as a whole."

"Between them, AUSVEG and HAL had been holding approximately 400 permits on behalf of levy payers, all of which are now held by Growcom."

"The changeover process

has taken some months while appropriate arrangements were being made at HAL but Growcom has officially been the permit holder since 1 April."

i For more information on the minor use permit scheme, please contact Growcom on (07) 3620 3844.

World Potato Congress 2012 website launched

Less than a year out from the World Potato Congress in Edinburgh, Scotland, the event's website has been launched, giving delegates access to the latest information as it is announced.



With just under a year until the eighth World Potato Congress, the official website has been launched giving delegates access in advance to information about the event.

Featured on the website is an outline of the program, as well as information about the host city, Edinburgh.

Among other activities, the Congress gives delegates the opportunity to see behind-the-scenes of the UK vegetable production industry, with the choice of visiting growers, breeders, processors, retailers and scientific institutions.

Also featured at the Congress will be a Welcome Reception,

Gala Dinner and traditional golf tournament.

The Congress will run from 27-30 May 2012, in Edinburgh, Scotland.

i For more information, please visit: <http://www.wpc2012.net>

The Top End hosts plant pathology conference

The final week in April saw a joint conference between the Asian Association of Societies for Plant Pathology (AASPP) and the Australasian Plant Pathology Society (APPS) join forces.

The joint conference held at the Darwin Convention Centre covered topics such as biosecurity, leading edge

bioinformatic tools, tropical horticultural and agricultural issues, education and extension.

The conference was the fourth

Asian Conference on Plant Pathology and the 18th biennial Australasian Plant Pathology Society Conference.

Particular focus at the event was paid to nematology, soilborne diseases, forestry and virology, among others.

Of particular interest to those involved in the potato industry was the Potato Disease Workshop, held on the opening

day of the conference.

Speaking at the workshop where a number of researchers involved in phase two of the Australian Potato Research Program (APRP2). They included Dr Calum Wilson, Dr Tonya Wiechel and Prakash Vijayamma Ramakrishnan Nair, as well as researchers recently featured in *Potatoes Australia* such as Dr Brendan Rodini and Dr Robin Harding.



Image courtesy of DPI Victoria.

Late blight resistance ensures lives are saved

Research developed at the International Potato Center (CIP) has saved the lives of communities in Peru.

Excessive rains in select parts of Peru early last year saw Late blight devastate many potato crops and threaten to induce starvation in the local population.

It was only thanks to two resistant varieties of potato that ensured crops continued to grow and feed the locals of the Cuzco region in Peru's south when it was declared a national emergency area over January-February 2010.

The two Late blight-resistant varieties, *Pallay Poncho* and *Puka Lliclla* were developed by the CIP with the Peruvian Ministry of Agriculture and

Peru's National Institute of Agrarian Innovation (INIA) after a similar spate of Late blight swept through a rural area in a nearby location in 2003.

According to Stef de Haan at the CIP, the two varieties provide a yield of approximately eight times more than native varieties. This is particularly important given the noticeably warmer weather in the Andes in recent times.

Late blight is not a disease that the high altitude areas of Peru have had to deal with in the past, given the cooler climate compared to other potato-growing areas around the globe.



H. Polesy & Co.

(IMPORTERS) PTY. LTD. EST. 1950

- ◆ JUTE & HESSIAN BAGS
- ◆ BULKA BAGS
- ◆ POLY WOVEN BAGS
- ◆ PRINTING
- ◆ SEWING MACHINES & SEWING THREAD
- ◆ ONION BAGS

www.polesy.com.au

Nth NSW & QLD

MICHAEL WILDE 0411 884 887

Sth NSW, VIC & SA

JUSTIN BRAGG 0418 884 730

Convention celebrates

The 2011 AUSVEG National Convention and Awards for Excellence has across Australia.

The 2011 National Convention has been hailed a resounding success after smashing last year's attendance across a packed three-day program. Close to 1,000 delegates gathered at the Sebel-Citigate Hotel in the heart of Brisbane's CBD from April 14-16 for the Convention—which is now the biggest event of its kind in Australia's horticulture industry.

After months of mounting anticipation, growers, researchers, suppliers and representatives of the supply chain assembled for the launch of the Convention at a Welcome Reception on Thursday, 14 April, sponsored by Syngenta and Elders.

AUSVEG Chairman John Brent welcomed delegates to the second annual National Convention, before cutting the ribbon and officially opening the Trade Show with former AFL star Robert "Dipper" DiPierdomenico.

Crowds poured through the

doors to get a glimpse of the showcase of 70 trade stands, which featured a host of state-of-the-art agri-technologies, the latest pest management products on the market and a range of R&D news and information.

Spanning across two function suites, the trade show provided plenty for people to peruse across the three days and offered a valuable platform for growers to meet members of the supply chain and suppliers and forge important links.

Thursday also saw around 25 young growers gather together for a fun-packed afternoon of paintballing during a special event designed to celebrate the industry's youngest members.

Friday

A number of delegates awoke bright and early on Friday, 15 April to attend a breakfast at Brisbane Produce Market, which was sponsored by the Central Markets Association of Australia (CMAA).

The breakfast involved a who's who of Australian state and federal politics and included talks from The Hon. Tony Abbott, Leader of the Opposition; Campbell Newman, Leader-Designate for the Liberal National Party in Brisbane and Andrew Young, CEO of Brisbane Produce Market. Following the formalities, Tony Abbott was accompanied by Campbell Newman, John Cobb MP, AUSVEG Chairman John Brent, AUSVEG Director John Said and AUSVEG CEO Richard Mulcahy on a tour of the markets.

The Trade Show opened its doors for a second day, while the impressive program of speakers also kicked off at 9am with an address by AUSVEG Chairman John Brent. The much-anticipated keynote speaker, Senator Barnaby Joyce, Leader of the Nationals in the Senate, was welcomed to the stage, where he delivered an impassioned speech to a packed auditorium.

Dr Michael Schaper, Deputy

Chairman of the Australian Competition and Consumer Commission and Elders CEO Malcolm Jackman also took to the stage during the morning. It was standing room only for The Hon. Tony Abbott, Leader of the Opposition, who gave a thought-provoking speech that touched on a number of hot topics affecting horticulture.

The Incitec Pivot Plant Nutrition Sessions were well-received, with esteemed international and regional speakers discussing a range of R&D topics from nutrient benchmarking to global developments in horticultural nutrition.

In a special coup for the Convention, MasterChef finalist Callum Hann wowed audiences with his culinary wizardry during the Celebrity Chef Lunch Entertainment, sponsored by VISY. Using fresh produce supplied by south Queensland growers at Kalfresh, Callum cooked up a storm in the Trade Show and allowed onlookers to



The Hon. John Cobb and AUSVEG Chairman John Brent



The Elders booth, one of many impressive displays



Senator Barnaby Joyce and the Hon. Tony Abbott MP



Guests pour into the Brisbane Markets Breakfast

staggering success

triumphed, with close to 1,000 delegates descending on the event from all

taste his dishes.

The Convention's exciting social program began on Friday evening with the Country and Western Special Theme Night, sponsored by DuPont, which took place at the Royal on the Park. Attendees got into the spirit by sporting cowboy party hats and enjoyed a meal and live music. Money was also raised for the 139 Club charity.

Saturday

Sunrise on Saturday, 16 April saw a host of delegates attend the al-fresco Women in Horticulture Breakfast, which was sponsored by Steritech and the Australian Government. The event aimed to recognise the pivotal roles that women play within the horticulture industry and, after enjoying a delicious buffet breakfast, delegates heard from a range of speakers, including Fiona Simpson MP and Senior Policy Officer for NSW Farmers Association Alison Anderson, as well as representatives from MADEC

and the Seasonal Pacific Workers Scheme.

Along with the Trade Show, the program of speaker sessions also continued with a line-up that included: Radiation Biologist, Dr Peter Roberts; Regional Director of Syngenta Asia Pacific, Andrew Guthrie, and Dr Maria Teresa Almanza, Bayer CropScience Global Development Manager for Beneficials and Pollinators.

Temperatures rose in the auditorium later that day as two experts went head-to-head on the topic of 'Water Usage in the Murray-Darling Basin' during the Great Debate, sponsored by Boomaroo Nurseries.

Dr Arlene Harriss-Buchan, of the Australian Conservation Fund, and Biologist Dr Jennifer Marohasy exchanged their expert views during the lively discussion, which was moderated by Laurie Wilson, President of the National Press Club.

Delegates then enjoyed a star-studded lunch during the

Bayer CropScience Sporting Identities Event. The panel featured Brent Livermore, the Olympic hockey player who captained Australia to win gold in Athens in 2004; Australian Olympic swimmer Samantha Riley; former Australian netball captain Vicki Wilson and AFL Brownlow medalist Barry Round. The entertaining event saw Dipper conduct a light-hearted interview with each of the sporting stars, which had the audience laughing all the way through lunch.

Saturday evening saw the event that everyone had been waiting for—the AUSVEG 2011 National Awards for Excellence and Gala Dinner. More than 400 delegates dressed in their finery for a candlelit dinner, which was followed by the presentation of 12 prestigious awards. Minister for Agriculture, Fisheries and Forestry Senator The Hon. Joe Ludwig was the guest of honour and delivered an insightful address.

Meanwhile, Dipper introduced

ministers, past winners and sponsors to present the accolades and there were a few surprises along the way that ensured an exceptional evening was had by all. For a full list of the award winners, see page 14.

Special thanks

AUSVEG would like to thank its leading strategic partners Elders, DuPont, Syngenta and Bayer CropScience, as well as the following sponsors: Dow AgroSciences, John Deere, Boomaroo Nurseries, VISY, Toolpak, Peracto, Kalfresh, Incitec Pivot, Steritech, Williamses, Terranova Seeds, Netafim, Hortus, Queensland Government, Transplant Systems, Landmark, McCain, CMAA and the Australian Government.

Plans are already afoot for next year's National Convention, which promises to build on the success of the 2011 event and raise the bar even higher to ensure it continues to benefit the Australian potato industry as a whole.



Dr Jennifer Marohasy and Dr Arlene Harriss-Buchan duke it out in the Great Debate



Guests enjoy the exquisite surrounds at the Gala Dinner



[L to R] AUSVEG Chairman John Brent, Barry Round, Sam Riley, Dipper, Vicki Wilson, Brent Livermore and Richard Dickmann



Celebrity chef Callum Hann and Dipper enjoy some home cooking



[L to R] Stuart Burgess, Ian Porter, and Monty Spencer speak at the Potato Summit

Global flavour highlights

Boasting speaking guests from New Zealand, South Africa, the UK, and of minds to share news of the potato from around the globe.

The Sunday following the AUSVEG National Convention saw the inaugural Potato Summit hosted at the Sebel-Citigate Hotel with over 50 people in attendance.

The Summit featured industry leaders from Australia and abroad, with guests such as Potatoes South Africa CEO, Mark du Plessis; UK Potato Council Director, Dr Rob Clayton; and Potatoes New Zealand Chairman, Terry Olsen.

From Australia, there was a strong focus on phase two of the Australian Potato Research Program (APRP2), with project leaders Dr Ian Porter, Dr Kathy Ophel Keller and Dr Calum Wilson all presenting on their studies.

Inaugural Chairman's Award winner, Dr Kevin Clayton-Greene, was also featured with his speech about the Tomato-potato psyllid, focusing primarily on the Australian perspective of the pest and its effect on the local industry.

International potato leaders

Business Manager of Potatoes New Zealand, Ron Gall, along with Mark du Plessis and Dr

Rob Clayton, gave fascinating insights into the local potato industries in their respective countries.

One recurring theme through all of the speeches was that despite the often vastly different cultures and climates, all potato-growing countries have to deal with very similar issues. Pests and diseases, a growing age in the population of

“ One recurring theme through all of the speeches was that despite the often vastly different cultures and climates, all potato-growing countries have to deal with very similar issues. ”

growers, funding for Research and Development (R&D) projects coupled with uncertain economic ground strongly affect the landscape in each country. Mr Gall highlighted a number of key challenges currently facing the New Zealand potato industry.

One in particular was the

Tomato-potato psyllid and the widespread destruction caused by Zebra Chip disease.

For the New Zealanders, Mr Gall emphasised the fact that with tough times comes the opportunity to create something positive. In this case, the problems caused by Zebra Chip have resulted in people coming together as a community and sharing information with the

belief that the psyllid will be overcome.

Another issue faced by the New Zealand industry that shares a similarity to ours in Australia is country of origin labelling. As outlined by Mr Gall, there is a focus on 'buy local' campaigns, while consumers voice their concerns about

country of origin labelling.

Director of the UK Potato Council, Dr Rob Clayton, addressed an issue in the United Kingdom that is also of concern in Australia-the decline in grower numbers and farmed land.

The number of potato growers and cropped land has declined severely since 1960. In the UK, only 3 per cent of growers since then are still growing, and over half of the land that was once used for growing potatoes is no longer being used for that purpose.

Despite the decline, the UK is still the 12th largest potato producing nation in the world, and the 10th highest nation in terms of potato consumption.

Dr Clayton also spoke about the enthusiasm in improving taste in potatoes through breeding programs, and an increased awareness by the industry in communicating to the public via the media.

Nearly 10,000km from Dr Clayton's office in the UK is Mark du Plessis, CEO of Potatoes South Africa.

Mr du Plessis spoke about the production of potatoes in South Africa, and just like Mr Gall and Dr Clayton before him,





[L to R] Simon Moltoni, Dr Dorris Blaesing, Ben Callaghan and Dr Robert Clayton



Mark du Plessis



Dr Kevin Clayton-Greene

inaugural Potato Summit

course, Australia, the Potato Summit brought together some of the brightest

highlighted a number of issues that are also prevalent in the Australian industry.

One such issue is the average age of growers. In South Africa, the average age of people in the farming community is 58—very similar to that of growers in Australia.

In South Africa, potatoes are a rapidly increasing crop, with growth recorded at seven per cent each year, making them the third-fastest growing crop in the country. A healthy export industry was also noted by Mr du Plessis, with key neighbouring countries such as Mozambique, Lesotho, Namibia and Angola benefiting from South Africa's booming industry.

APRP2 rolls on

The Potato Summit also saw leaders from the industry closer to home address the audience, with three project leaders from phase two of the Australian Potato Research Program discussing their work.

The APRP2 program comprises five separate projects that look at areas including soil diagnostics, soil health, seed diagnostics, psyllid, and *Vectirillium*. The projects include

international collaboration with numerous organisations such as the UK Potato Council and Plant & Food Research New Zealand.

Dr Kathy Ophel Keller's project PT09023 focuses on soil-borne diseases. Dr Ophel Keller gave an overview on the project, with a focus on the future and where it was headed, based on the work done in Australia and overseas.

The project has a strong international collaboration aspect that includes work done in the UK and New Zealand.

An article in the April edition of *Potatoes Australia* featured the work conducted by the UK Potato Council as part of this project.

Dr Ian Porter spoke about project PT09026 that focuses on soil health and disease mitigation. Much like Dr Ophel Keller's project, Dr Porter's project also involves a large amount of international collaboration that includes Canada and New Zealand, as well as personnel from Victoria and Tasmania.

The work done in this project is aiming to: continue investigating nutrient effects on plant resistance (synchrotron);

discover the effect of organic matter & biological activity on nutrient interactions for disease reduction; and identify & investigate differences between disease suppressive and conducive soils complexes.

Dr Calum Wilson discussed a separate area of project PT09026, focussing on one of the world's most widespread potato diseases—Common scab.

The disease affects tuber and fry quality, and according to Dr Wilson, costs the Tasmanian potato industry approximately \$4 million each year.

Australia's Zebra Chip focus

Dr Kevin Clayton-Greene provided a fascinating presentation on the Zebra Chip disease from an Australian perspective, highlighting a number of key issues for the industry.

Dr Clayton-Greene gave an overview on the effects of the disease on potato crops and images showing what Tomato-potato psyllid (TPP) eggs and nymphs look like on potato plants.

One key point made by Dr Clayton-Greene was in relation

to the way the disease develops quietly as people mistake it for other more common diseases. Because of this, it can create a sense of paranoia due to the fact that by the time it is discovered, it is too late to do anything about it.

With a combined effort in studying how to combat the disease, as well as ensuring it does not reach Australian shores, it is hoped that this disease is something that local growers will be fortunate enough to avoid.

Eyes turn to next year

AUSVEG has received positive feedback from those who attended the Potato Summit, and is excited about the possibility of bringing together more of the potato industry's key players in 2012.

Stay tuned for news about next year's event, and the form it may take.

i To provide feedback or find out more information about this year's Summit, please contact AUSVEG on (03) 9822 0388 or email info@ausveg.com.au.



AUSVEG National Awards for Excellence



Lifetime Achievement Award
Dr Kevin Clayton-Greene



Chairman's Award
Mr Jeff McSpedden



Grower of the Year Award
Mr Sam Calameri,
 Baldivis, WA

sponsored by



Young Grower of the Year Award
Mr Andrew Bulmer,
 Lindenow, VIC

sponsored by



Researcher of the Year Award
Mr Denis Persley,
 Dutton Park, QLD

sponsored by



Industry Recognition Award
Mr Max McKenna,
 Gawler, TAS

sponsored by



Women in Horticulture Award
Ms Deborah Corrigan,
 Clyde, VIC

sponsored by



Innovative Marketing Award
Mitolo Group,
 Virginia, SA

sponsored by



Productivity Partner Award
Peracto,
 Devonport, TAS

sponsored by



Environmental Award
Mr Rodney Emerick,
 Bowen, QLD
 (Accepted by Rick Moores)

sponsored by



Industry Impact Award
Mr Rohan Prince,
 Bentley, WA

sponsored by



Rising Star of the Year Award
Mr Tom Hunt,
 Boonah, QLD

sponsored by



Ask the industry

With numerous diseases hindering a grower's ability to grow a perfect crop, guest columnist Syngenta's Sean Richardson details the various options for disease control in this edition of Ask the Industry.

Dealing with Pink rot

Two of the most common issues that are constantly put on the table for discussion within the potato industry are new ways of controlling Pink rot (*Phytophthora erythroseptica*), especially in the processing potato regions of Australia, and the difficulty of controlling some problem weed species in potatoes like Nightshades and group A resistant grass weeds, especially after emergence. In fact, there have been no new modes of action for grass weed control in horticulture generally for quite a few years, and the reduction in sensitive to group A herbicides is a well-documented point and is becoming a significant issue for growers.

Previously this column has canvassed how best to achieve effective Pink rot control, so I won't spend too much time going over these aspects. Pink rot, of course, is a major soilborne pathogen. It can survive for many years and is highly mobile in water and will easily spread throughout potato growing paddocks.

Growers have had most effective results to date in controlling this disease with an application of either Metalaxyl-M (Ridomil Gold 25G) or various generic formulations of Metalaxyl 50g/Kg, both applied at 20 kg per hectare at planting, followed by one to two applications four and six weeks after emergence respectively, of again the same activities. In a different formulation, for example, Ridomil Gold MZ, a 680g/ Kg product of which 40 g/kg is the active Metalaxyl-M, or other metalaxyl generic formulations which are 720g/kg of which 80 g/kg is metalaxyl and only 40 g/kg of that active (i.e. half), is the component that controls Pink rot. The rates on a per hectare basis are the same 2.5kg/ha.

New solutions

There are two new product developments for commercialisation or trial this year that are addressing these emerging issues of effective and efficient Pink rot control and improved weed management to make life easier for the potato grower.



Examples of Pink Rot

Firstly, a new registration for Ridomil Gold 480SL for in-furrow application at planting for potatoes. The Ridomil Gold brands from Syngenta are the only Metalaxyl-M formulations available in the market today. The main point of difference between metalaxyl actives and Metalaxyl-M is the inerts have been removed from Metalaxyl-M leaving just the active that is effective in controlling disease.

The registration of Ridomil Gold 480SL in furrow for the control of Pink rot (*Phytophthora erythroseptica*), will remove the necessity for growers to utilise Ridomil Gold 25G in furrow and replace it with Ridomil Gold 480 SL mixed with other in-furrow activities like Azoxystrobin as a spray application instead of a granule.

So what are the advantages?

Firstly, growers will be able to use 1L of Ridomil Gold 480SL in furrow per hectare instead of the 20kg/ha rate of Ridomil Gold 25G.

Secondly, growers can mix the two most commonly used in-furrow products in Australia, Azoxystrobin (Amistar 250SC) and Ridomil Gold 480SL, as both products are fully compatible because of their respective formulation types SC & SL, even at low water volumes.

Reduction of handling and freight, is another massive opportunity that growers have always been reminding us would be a huge advantage, right down to the difficulty of removing hundreds of lids to destruction of containers.

Finally, we are seeing no difference in terms of performance of both these mainstay brands in controlling a large range of soil borne diseases. All in all, this is an elegant solution to streamlining a grower's operation around planting time.

*This months edition of Ask the Industry written by Sean Richardson, Portfolio Manager Potatoes and Vegetable at Syngenta.

Ask the industry

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*: caitlin.rode@ausveg.com.au
Please note that your questions may be published.



A beacon for success

With over 50 years of dedication, Max McKenna AM is one of the champions of the potato industry. After receiving the Industry Recognition Award at the AUSVEG National Convention in April, Mr McKenna spoke to *Potatoes Australia* about his coveted career.

Having grown up around Ulverstone, Tasmania and farmed potatoes since he was young, Max McKenna knows most of what there is to know about the industry.

The list of his achievements and positions on various boards and councils is long and distinguished, and speaks volumes about his level of commitment to the industry in over half a century.

His credentials and medals include an Order of Australia medal for Services to Agriculture, life membership of the Tasmanian Farmers and Graziers Association (TFGA), and the recent Industry Recognition Award he received

in April at the AUSVEG National Convention.

Mr McKenna came very close to not attending the Convention due to the coinciding harvest season, but fortunately changed his mind thanks to some family persuasion.

"This year I wasn't going because my son was going to be away at the time, and we were right in the main harvest," Mr McKenna said.

"I rang up (AUSVEG) and said I didn't think I could make it because my son was going to be away and we would be busy."

"Then my wife started to say 'you should go'."

In the end, it was a good decision for the couple to

attend, with Mr McKenna receiving his award and having an opportunity to mingle with some of the other industry leaders from Australia and abroad.

The ups and downs of growing

For Mr McKenna, the real satisfaction and enjoyment that comes from growing is not brought on by public recognition with awards and the like.

The real love—not surprisingly—is saved for growing; something that has evolved significantly over the years.

"Every year there's a challenge and satisfaction if you're trying to grow a good crop and a good



Max McKenna's Order of Australia for Services to Agriculture

Grower Information

Producer: Max McKenna AM
Region: Ulverstone, Tasmania
Crop: Processed and fresh potatoes
Farm size: 500 acres
Other activities: Previously an AUSVEG Board Member, Life member of TFGA Vegetable Council, received the Order of Australia for Services to Agriculture



product," Mr McKenna said.

"Nowadays you don't leave things to chance. You test your soil before you plant, you use the fertiliser that's needed, you do the SAT test while they're growing, and top dress and monitor moisture."

"All of that technology is changing."

Mr McKenna has naturally encountered many on-farm problems, which has allowed him to be philosophical about just what it takes to overcome them. The answer? Teamwork.

"I've worked on committees as secretary, and just as a member of committee, then secretary of processing growers and then Chairman for 20-odd years," Mr McKenna said.

"I think with how the industry works together, we've always had issues we've been able to work through."

The ability to co-operate and work through problems is something that has happened not just in Australia, but also with the help of international groups.

"Co-operation with researchers in Australia and overseas as well is working," Mr McKenna said.

"The world's gotten smaller and closer, with people liaising more often. People are working together, because some of the issues we've got are world issues."

"If we work together on how to control scurf and blights and these issues, we will learn to manage them better."

One local issue growers have had to work through recently is

the wet weather over summer that caused a high number of crop losses industry-and Australia-wide.

Some areas of Tasmania experienced near-record rainfall numbers, with Falmouth receiving 282mm in mid-January, just 7mm short of Tasmania's summer record of 289mm at the same location in 1993.

"This year, we're having a hard season, it's been the worst year farming I've had in 51 years," Mr McKenna said.

had to top dress more than normal. There have been more mildews and blights in crops, so we've had to spray more than normal."

Looking back, looking forward

As farm practices have become more advanced with mechanisation and improved pest and disease management technologies, it becomes easy to forget just how far the industry has come.

“All farmers ought to be involved in their farm organisations. You don't know how much worse off we'd be if we didn't have one at all.”

"We had up to 12 ½ inches (of rain) on some of our properties in the middle of January. I can't remember the last time we got that in the winter."

With the heavy rain comes not only a loss of crops due to drowning but also an increase in the risk of diseases spreading in the damp conditions when the water is drained.

"We had a lot of issues with leeching of nutrients so we

For Mr McKenna, his involvement in the industry goes back a long way, to when the techniques used involved a significant amount of hard yakka.

"I can go back to the days we even dug with a fork and picked them all up by hand," Mr McKenna said.

"We started off growing 50 acres of potatoes and picking them by hand. Now we grow

120 acres or more."

Safe to say, these ones are not picked up by hand.

Having seen many of these changes in the industry, Mr McKenna understands how it can continue to progress through the challenges it faces and will continue to in the future. This is through the same ways it has overcome challenges in the past.

"You only get out what you put in, and I've gotten a lot out of organisations and industry things," he said.

"All farmers ought to be involved in their farm organisations. You don't know how much worse off we'd be if we didn't have one at all."

"Who would be there battling for potato and vegetable growers if we didn't have an organisation? It's the linkage between government and growers."

"You've got to have growers representing you, and speaking in your state and nationally."

Although Mr McKenna has been able to reduce the level of involvement he's had in off-field activities in recent years, he certainly hasn't stopped working.

He has been able to take an increased interest in his son's work as a member of the Simplot processed potato committee as well as chairing Simplot meetings every so often.

On top of this, he has been involved in an irrigation project hoping to supplement water needs for local farms.

"I'm still very much interested in agriculture, but I've had my time."

"Now it's time for the younger ones."

South Africa's *driving force*

Over the past four and a half years, at the helm of Potatoes South Africa, CEO Mark du Plessis has seen the organisation grow and improve at a dizzying rate alongside the burgeoning industry in his country.

The potato industry in South Africa is booming. Producing over 10 per cent of Africa's production on less than 3 per cent of Africa's land—approximately 52,000 hectares—the job of steering the industry's representative organisation is no mean feat.

Up until the early 1990s, South Africa's trade markets were run by agricultural marketing boards that had the power to control volumes and pricing of produce. The potato

industry represented by the Potato Board, operated slightly differently as it managed a surplus removal scheme.

In accordance with the scheme, the Board had control over the volumes, but the price was determined by supply and demand on the national fresh produce markets.

However, with the historic election of Nelson Mandela and the African National Congress Party in 1994, life in the country changed.

“ My first point of attack was I wanted to change the image of Potatoes South Africa. ”

Not only was apartheid defeated and a new era of racial equality ushered in, a liberalisation of trade was also introduced, allowing produce to be sold on a free market.

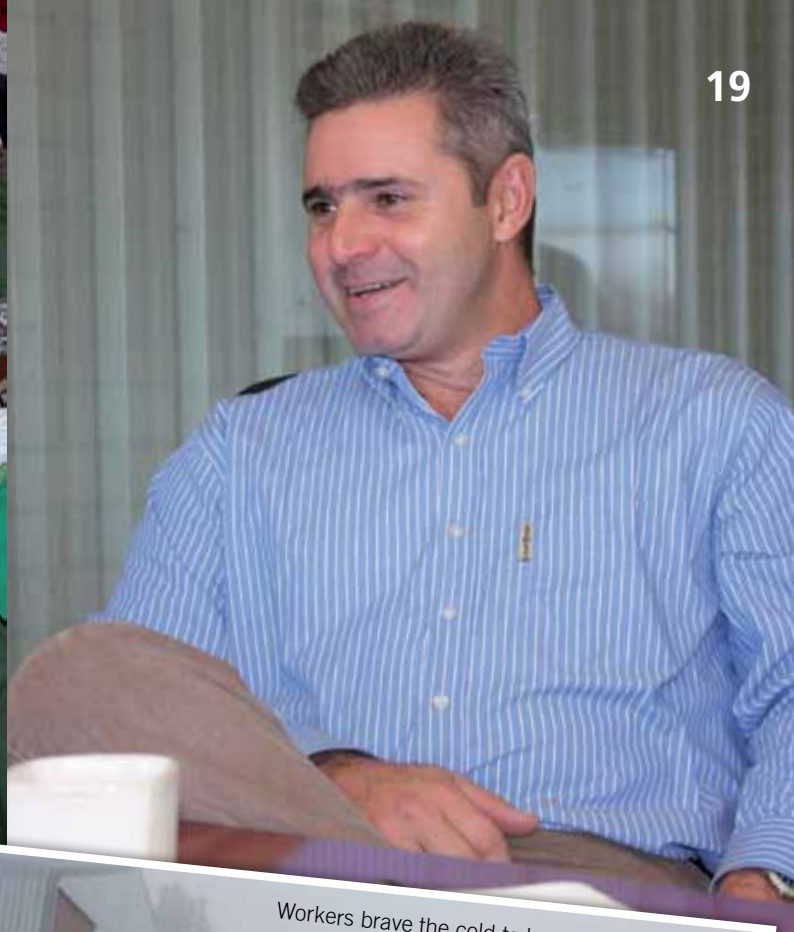
For Potatoes South Africa, the challenge has since been to re-brand itself and correct the perceptions of some in the industry chain that the organisation is not what it once was.

CEO of Potatoes South Africa, Mark du Plessis, joined the





Workers sorting spuds.



Workers brave the cold to keep the factory clean.

company in 2007.

“My first point of attack was I wanted to change the image of Potatoes South Africa,” Mr du Plessis said.

“We created a new corporate identity, new logo, and a new slogan—*pure potato passion*.”

“We launched our new corporate identity which also started off a new era where we wanted to label Potatoes South Africa as being more vibrant, younger, more strategic, and more energetic.”

Formerly a member of corporate giant Frito-Lay, Mr du Plessis made the somewhat unusual step into an industry representative organisation.

“For me, coming out of the procurement environment there, I needed some experience in management-people management and general management,” he said.

“In Potatoes South Africa I saw an opportunity to also make a difference.”

And make a difference he has. In transforming the company, Mr du Plessis has been able to connect with growers through improved communications.

“Obviously it takes some time with any transformation and transition,” he said.

“The growers accepted it very well.”

Annual improvements

Throughout each year of his

period as CEO, Mr du Plessis has implemented a focus for the organisation at its highest level for improvement.

In 2011, the focus is double-pronged, looking at improved communication and sustainability, the former being a continuation on last year.

According to Mr du Plessis, the communication with growers has been a success.

“Our communication has increased tremendously,” he said.

“If you look at the South African population, they’re less IT-inclined, so it’s more difficult to communicate, and a lot of our focus at this time is on personal communication.”

As part of the communication program, Potatoes South Africa holds a research symposium and a transformation symposium once a year, as well as a conference every second year.

Providing information to industry members has been so successful in fact, that with members having the information at home it has been difficult to get them to attend meetings.

“We’ve succeeded in bringing the information and intelligence to them at the farm, but now we’re battling to get them to come to platforms

and meetings.”

Last year’s focus for Potatoes South Africa was on sustainability, partly covered in 2011.

Not only is sustainability incredibly important for the industry, it is also paramount for Potatoes South Africa. No-one understands the mortality of the industry and organisations built around it more so than Mr du Plessis.

“We’ve got no right to exist if there’s no future (for the industry),” he said.

“Potatoes South Africa, if you look at our core focus, should be the driving force behind sustainable growth of the potato industry in South Africa.”

To do this, ambitious but achievable goals must be set.

“We’d like to increase our potato consumption by more than four per cent each year.”

“We’d like to grow exports from about eight per cent to at least 12 per cent.”

“We must make sure in all that we do in terms of information, economics and R&D that the increase in our per unit production cost is below inflation.”

“At the same time, we must make sure there’s a target that we grow our industry by using on average one per cent less natural resources per year.”

Focus in the two years preceding 2010 was on the value chain (2008) and producer base (2009).

Concentrating on particular segments of the industry chain each year aimed to ensure that there was healthy communication among all areas of the industry.

“In 2008...it was the

International Year of the Potato,” he said.

“We saw it as a good opportunity to build new strategic partnerships away from our producer base, and we communicated that.”

“We purposefully moved away from that and told our growers we’d be concentrating a bit further on the value chain from the producer and their buy-in.”

The following year would see a return to focusing on the growers with improved service delivery and demonstrating a value proposition towards the producers and levy payers.

A global problem

For growers in Australia, dealing with potato diseases is a problem dealt with on a regular basis.

Some solace may be found in the fact that they are certainly not alone, with growers from all around the world in an endless fight with diseases.

The list of prevalent diseases in the South African potato industry will be familiar to Australian growers, and includes Common scab, Rhizoctonia, Black dot, Leaf roll virus and

Powdery scab.

The last two in particular cause significant issues for the South African industry, with Leaf roll virus developing very quickly over the past 10 years.

There are also a number of newer diseases in the African industry including Potato Virus Y and *Alternaria Alternata* (Brownspot).

issues.”

International collaboration is ongoing with numerous research institutes and organisations such as Potatoes South Africa collaborating with countries around the globe.

Moving forward

Although a considerable amount of work has already been done

consumption of potatoes, decreasing production costs and ensuring the environment is looked after in the process.

“I would like to increase the farm gate value of potatoes for our producers by higher than inflation rate,” he said.

“We need to increase our per capita consumption of potatoes. We need to decrease our per unit production cost. We need to take care of our environment, use less land, water and resources to produce the same or more.”

“Any project or action that Potatoes South Africa and our personnel execute needs to work towards creating a sustainable potato industry in the future.”

While continuing to improve the local industry, the focus for Potatoes South Africa must remain on the people it works for. In typical fashion, Mr du Plessis explains it with perfect clarity.

“For an organisation like Potatoes South Africa, a big focus is people.”

“Working with people, (who are) obviously our reason to exist, first we need to build trust within the stakeholders group and then the relationships and the communication will follow.”

“Potatoes South Africa, if you look at our core focus, should be the driving force behind sustainable growth of the potato industry in South Africa.”

“If you look at disease pressure of soil-borne diseases, (we have) the same ones that Australia and New Zealand are working on,” Mr du Plessis said.

“We need to internationally work together on the same

by Mr du Plessis and Potatoes South Africa over the past four and a half years, the CEO still has his sights set on bigger and better things.

Among his list of things to improve on are increasing



Top shelf



Top choice

- Row closure specialist
- Protection and early curative activity against Early Blight (Target Spot) at row closure
- Broad-spectrum disease control
- Delivers optimal plant health and marketable yield
- One convenient drum

For more information call the Syngenta Technical Product Advice Line on: **Freecall 1800 067 108**
or visit www.syngenta.com.au

©Registered trademark of a Syngenta Group Company. Syngenta Crop Protection Pty Limited, Level 1, 2-4 Lyonpark Road, Macquarie Park NSW 2113. RENARD SYN6197/P



GROW your reputation

 syngenta.

Improving the management of White-fringed weevils in potatoes



Image source: Russ Ottens, University of Georgia, Bugwood.org

A new project based at the University of Tasmania is focussing on managing what has long been a significant thorn in the potato industry's side, writes Dr Paul Walker.

Horticulture Australia Ltd, through funding from the processed potato industry levy and matched funds from the Federal Government, has recently invested over \$159,000 in a new three-year research project which aims to improve the management of White-fringed weevils (*Naupactus leucoloma*) in potatoes.

The project has two main objectives that include increasing growers' awareness of the pest and promoting the adoption of an effective sampling plan for making appropriate control decisions, and conducting novel research into the host-plant finding mechanisms of White-fringed weevil grubs to investigate alternative methods for detecting their presence in the soil.

The project is being led by Associate Professor Geoff Allen from the Tasmanian Institute of Agricultural Research (TIAR), University of Tasmania, myself (TIAR) and chemist Associate Professor Noel Davies (Central Science Laboratory).

The project research team is also collaborating with Dr Scott Johnson from the Scottish Crops Research Institute, UK, who has expertise in the area of host-plant finding by root feeding insects.

Also at the team's disposal is the extensive expertise in integrated pest management of Dr Paul Horne and Jessica Page (IPM Technologies, Victoria) to assist with the extension of

sampling plans for White-fringed weevils.

The pest

Originally from South America, White-fringed weevils were first detected in New South Wales around 1932 but are now present in all potato growing areas.

In recent years, the weevil has become a primary pest of potatoes in Tasmania where it attacks the roots of several other crops such as carrots and poppies. White-fringed weevils also cause severe damage to the roots of pasture and forage plants, particularly lucerne, sometimes reducing the life of crops to only a few years (McQuillan *et al.* 2007).

Damage

The grub is the damaging stage, feeding below ground on potato roots and tubers. They burrow into tubers leaving round holes or a channel-shaped scar.

Usually, the holes are relatively shallow, just deep enough to hold the weevil grub, but the damaged tissue may become infected with other organisms. It has been estimated that a density of only one grub per metre row (equivalent to about 1 grub per 1.5 m²) in a potato field can result in a loss of 9 per cent of average gross return (Learmonth, 1993).

Because weevil grubs live in the soil, they are difficult to detect and infestations often go unnoticed until harvest by which

time damage has occurred. Adult weevils feed on the leaves of potatoes and other plants but the damage caused is not significant.

An intractable pest

Once White-fringed weevils become established in a paddock they are extremely difficult to eradicate as both the adult and juvenile stages are able to develop on a wide range of plants (over 385 species recorded).

The eggs require rain to hatch but as they are laid in a sticky, gelatinous mass, which hardens into a protective film, they can readily withstand droughts. The first growth stage (instar) of the weevil grub does not feed and can survive in bare paddocks for several months until plant roots become available.

All White-fringed weevils found in Australia are female and they reproduce by parthogenesis, whereby males are not needed to produce viable eggs.

Consequently, it only takes one weevil to establish a population in a paddock.

Weevil numbers can rapidly build-up in paddocks that contain a high proportion of legumes and/or other favoured host-plants. Weevils feeding on legumes can lay up to 1,500 eggs but less than 10 when reared on less favoured host plants such as cereals.

Current control options

There are a number of ways in

which white-fringed weevils can be controlled in the field. These include crop rotation, chemical and cultural control.

Crop rotation: Most problems with White-fringed weevils occur when potato crops are grown following pasture or legume crops. Growing potatoes after a cereal crop can help to reduce weevil problems as this is the least preferred host-plant, hence adult weevils lay fewer eggs.

Alternatively, a clean fallow over summer can also be successful in reducing weevil numbers.

However, such rotations are often impractical and will only be effective if they are kept clean of favourable host plants.

Chemical control: Control of White-fringed weevils with insecticides is extremely difficult and the results variable, as the eggs, grubs and pupae are protected in the soil, while they have poor efficacy against adults. Application of high rates of soil insecticides in furrows at planting may only give partial control of grubs. Even so, many potato growers are currently resorting to such applications to 'insure' against White-fringed weevil damage, often without determining the presence of the pest beforehand. This practice is not only costly and potentially harmful to beneficial soil organisms, it is also wasteful if the pests are not present at economically damaging levels and could lead to the development of resistant strains.

Cultural control: Farm hygiene

is important in preventing the spread of White-fringed weevils. Adult weevils cannot fly but they can walk considerable distances. All stages of the White-fringed weevil can be readily spread between and within farms through contaminated soil on machinery, infected potatoes or through the transportation of other host plant material such as bales of forage.

A sampling plan for White-fringed weevil grubs

Infestations of White-fringed weevil grubs are notoriously patchy across farms and even within individual paddocks. Consequently, the implementation of an effective sampling plan is critical for determining whether grubs are present in high enough numbers to consider either using an alternative crop rotation (such as cereals) or, if planting with potatoes does proceed, using a soil insecticide treatment. Such a sampling plan has already been developed for potatoes by Dr Paul Horne and Stewart Learmonth.

One of the aims of this project is to promote and demonstrate the use of this sampling plan, particularly to growers and agronomists in Tasmania where the White-fringed weevil problem is relatively new.

The sampling plan simply involves taking samples of soil with a spade (approximately 20x20x20cm), randomly across the paddock to search for White-fringed weevil grubs.

Sampling is best done well before planting in the winter

months when the grubs are large, easy to identify and are readily visible in the soil. For an average sized paddock, five spade samples should be taken in each of nine, widely separated locations to cover most of the area. If more than one grub per five samples are found then the grower should consider either not planting to potatoes or treating the soil with an insecticide before planting.

If sampling reveals that weevils are only present in localised patches then treatment of just these areas may be adequate.

Alternative methods for detecting and controlling White-fringed weevils

As mentioned above, a second

“ This exciting finding may offer a novel method for monitoring and/or controlling soil-feeding insects such as white-fringed weevils. ”

objective of the project is to conduct research on the host-plant finding mechanisms of White-fringed weevil grubs.

There are numerous reasons as to why this is important.

Firstly, sampling the soil for the presence of grubs is an arduous and time consuming task with considerable margin for error, but at present there is no alternative method.

Unlike for several other insects, such as the Potato moth (*Phthorimaea operculella*),

there is no synthetic attractant that can be used to trap weevils.

Secondly, recent research has shown that the grubs of many subterranean insects, such as weevils, do not find their host-plants through random searching for suitable roots in the soil. Rather, they detect and orient towards specific compounds released from the roots of their host-plants (Johnson and Gregory 2006).

This exciting finding may offer a novel method for monitoring and/or controlling soil-feeding insects such as White-fringed weevils. By isolating and identifying the compounds which attract or deter root-feeding White-fringed weevil grubs, it may be possible to develop a synthetic attractant/

deterrent bait, such as is successfully used against other subterranean pests such as termites. If an attractant can be found, it could also be combined with a biopesticide (such as a nematode or fungi) to form a lethal bait ('lure and kill') which could then be distributed in the soil at planting.

Alternatively, a deterrent could be used to reduce the amount of White-fringed weevils feeding on potato roots and tubers. This project will conduct laboratory

bioassays to determine how White-fringed weevil grubs find the roots of their host-plants. If it can be demonstrated that they are attracted to roots then the compounds involved in attraction will be identified to determine the feasibility of using them for baiting grubs.

Acknowledgements

We thank Paul Horne and Jessica Page (IPM Technologies, Victoria) for assistance in writing this article.

THE BOTTOM LINE

- White-fringed weevils are an intractable pest of potatoes, once established in a paddock.
- Crop rotations of less preferred hosts such as cereals or applications of soil insecticides are currently the only methods of suppressing weevil populations but the results can be variable.
- It is essential to implement a sampling plan that is to assess grub levels in a paddock before planting, before making a decision to apply a soil insecticide.
- New research aims to determine the feasibility of developing an attractant for detecting the presence of grubs in the soil.

i For more information contact:
Dr Paul Walker
Tasmanian Institute of Agricultural Research
University of Tasmania
Email: <paul.walker@utas.edu.au>
Project number: PT09027

ProNatural® for a clean cut finish

SUBERIZATION AID

ProNatural® A NEW GENERATION POTATO SEED PIECE TREATMENT

- Promotes rapid healing of cut surfaces
- Increases the potatoes' natural abilities to protect against infection and water loss
- Quicker healing means reduced risk of seed piece breakdown
- Out performs commercial standards



THE RESULTS SPEAK FOR THEMSELVES

"ProNatural" has superior covering ability resulting in improved healing of cut tuber surfaces when compared to conventional fir bark products. Its higher density makes it easier to apply and more user friendly to handle."

Fraser Meams – Harvest Moon, Forth, TA

For a clean-cut finish, your only choice is ProNatural®. Contact your local distributor or Serve-Ag Pty Ltd.

Ph: (03) 6498 6800 Fax: (03) 6427 0801 Email: info@serve-ag.com.au

Improved diagnostic DNA testing to help *avoid Black dot*

DNA-based testing is an important decision-making tool that enables growers to identify prior to crop sowing those fields which carry a high-risk likelihood of Black dot disease developing, writes Gretel Sneath.

Today's potato growers are facing greater demands for higher quality produce and tighter environmental standards. Diseases like Black dot are causing significant economic losses due to downgrading of blemished tubers and yield reductions of up to 30 per cent.

The fungus *Colletotrichum coccodes*, which causes Black dot, can survive in the soil for up to eight years. Visual symptoms aren't evident until potato plants enter the tuber bulking stage and foliage starts to die off. By then, it's too late.

South Australian Research and Development Institute (SARDI) research scientist Dr Robin Harding describes Black dot as 'a difficult disease to control'.

"There is no one silver bullet to knock it out; control methods need to be varied depending on the disease status of the seed or the soil into which they are to be

planted."

SARDI has previously validated a DNA test to identify and quantify *C. coccodes* inoculum in the soil. A team led by Dr Robin Harding has now built on these findings by developing the test as a diagnostic tool for commercial potato growers by helping them to evaluate the risk of the disease developing within a field prior to sowing crops.

The project was facilitated by HAL with contributions from the South Australian Potato Industry Trust and the Australian Government.

A total of 5,200 soil samples were collected prior to planting from 48 commercial centre pivots within the main potato growing regions of South Australia. Each sample was analysed for *C. coccodes* DNA levels and preliminary disease risk management zones

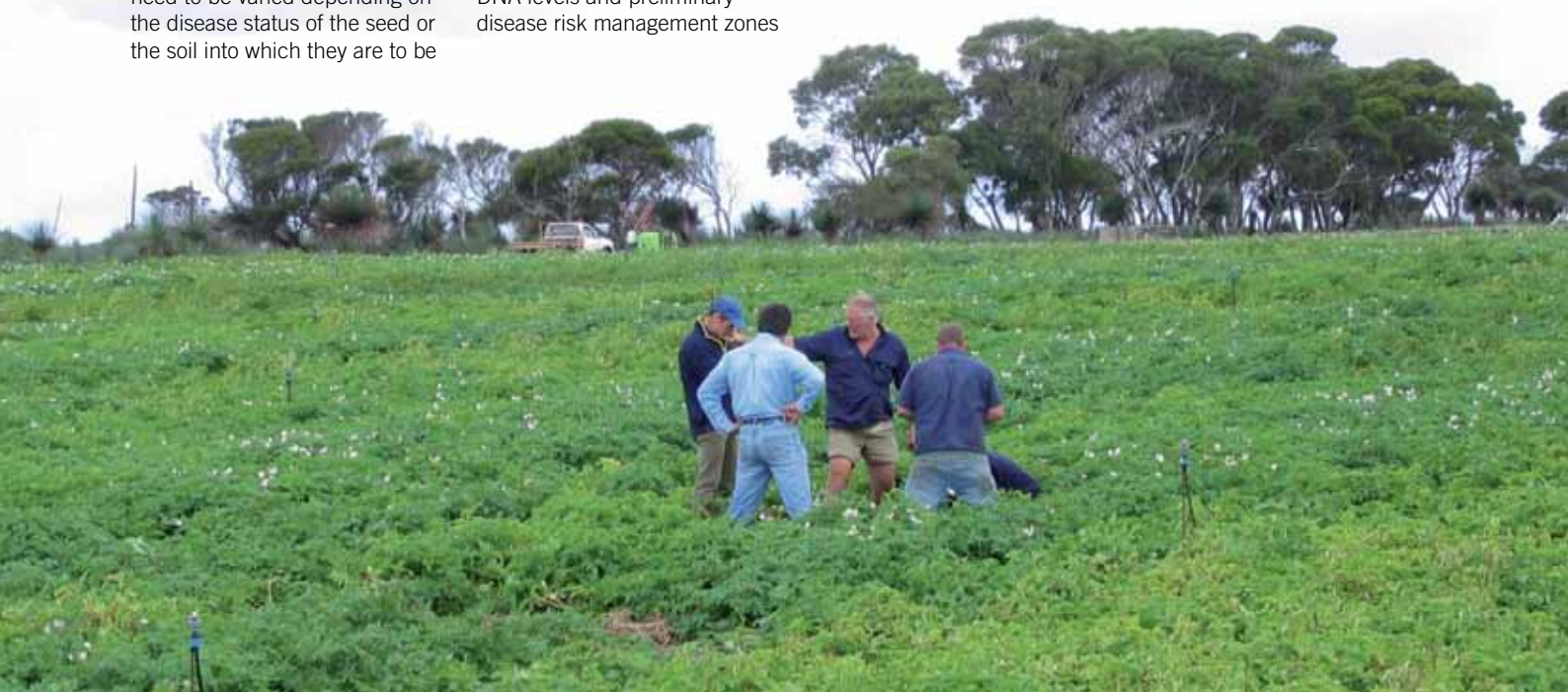
“There is no one silver bullet to knock it out; control methods need to be varied depending on the disease status of the seed or the soil into which they are to be planted.”

(low, medium and high) were identified within each centre pivot. At harvest, incidence of Black dot on tubers was assessed within each of the risk zones. Four field trials were also undertaken on commercial properties at Parilla and Nildottie in SA to assess the efficacy of treatments applied to the soil within predetermined high risk zones on Black dot control in naturally infected soil.

The subsequent results have led to the development of a risk rating system that provides a reasonable basis for disease prediction on a commercial scale.

"This is a major step forward for growers to be able to consider their options to prevent or reduce crop losses," Dr Harding explained.

"It will enable growers to





Far Left: Grower group discussions, Above: SARDI Plant and Soil Health scientist Robin Harding

Harvest of seed potatoes

identify and avoid fields of high risk, maintain uncontaminated sites for high quality production, or use this information to implement disease control within the different disease risk management zones."

This can be achieved via conventional methods such as planting of infected sites in cooler conditions, early harvesting, and seed/soil treatments with Maxim® or Amistar®.

"We've found that a seed treatment of Maxim® is effective at reducing the impact of this disease but only where soil levels of the fungus were low. Where soil levels were high, in-furrow treatments of Amistar® applied to the soil in front and behind the seed tuber to create an envelope of treated soil reduced the impact of the disease," Dr Harding said.

Disease control can also be assisted by better targeting of soil fungicide treatments through the use of precision farming technology such as

variable rate application.

"This provides environmental benefits by allowing pesticides to be applied at the right place, right time and in the right quantity within a field," Dr Harding explained.

The methodology used for predicting Black dot disease risk within fields is being developed

“ This is a major step forward for growers to be able to consider their options to prevent or reduce crop losses. ”

for delivery of other DNA tests for Rhizoctonia, Powdery scab and Common scab, as part of phase two of the Australian Potato Research Program (APRP2). The findings will also serve as a preliminary feasibility study for the establishment of a soil testing service for growers

using quantitative DNA assays.

"While these tests will provide information on broad disease risk categories, further research is required on areas to improve definition of the parameters. These include the relationships between the disease risk and area specific aspects such as

seasonal weather conditions, soil type and agronomic practices," Dr Harding said.

"In addition, research is required on the relative susceptibility to Black dot of the Australian potato varieties, and continued evaluation of new fungicides and biological agents.

This research would enable more accurate evaluation of the potential damage, improve the understanding of the risks and provide improved management strategies."

THE BOTTOM LINE

- The Black dot DNA test can now be used as a diagnostic tool for commercial potato growers.
- Growers can evaluate the risk of Black dot disease developing within a field prior to crop sowing.
- The new technology paves the way for strategic targeting of cultural or chemical control measures.

i For more information contact:
 Dr Robin Harding
 South Australian Research & Development Institute (SARDI)
 Email: <Robin.Harding@sa.gov.au>
 Project number: PT08046



UNDERHAUG Potato Planters

2 and 4 Row Linkage
 4, 6 & 8 Row Trailing

Fertilizer available on all models

**Available for immediate delivery
 Contact WAYNE MILLS 0417 945584**

vin rowe farm machinery
 Endeavour Street Warragul (03)56231362



Sowing the seeds for a stronger market

For the past decade, Australian growers have been exporting a steadily increasing supply of potato seed to the tropical climes of Mauritius. A two-year research project is now underway with the aim of helping growers to keep their competitive edge in this expanding market.

Nestled in the south west Indian Ocean, this sun-kissed island has been successfully producing potato crops with seeds from Australia, particularly from growers in Western Australia, and this important market has developed and strengthened during the last 10 years.

In order to help maintain Australia's competitiveness in this seed market, a two-year project has been undertaken by the Department of Agriculture and Food Western Australia (DAFWA) in collaboration with Western Australian-based growers/exporters Southern Packers.

Funding for the project has been provided by Horticulture Australia Limited (HAL) using voluntary contributions from Southern Packers and matched funds from the Australian Government.

The project, entitled Improving Australia's competitiveness in the Mauritius export seed market, is now in its second year and details of the findings to date have been published by HAL in a recent milestone report.

Senior research officer at DAFWA Ian McPharlin, who is helping to lead the project, said: "The focus of this project is to find ways of reducing the cost of the seed, while at the same

time having a very high quality product."

One of the key areas the project looked at was the shipping of seed in various sized bags. An experiment was conducted to compare the performance of crops grown using Western Australian Delaware seed shipped to Mauritius in either large (1.2 tonne) Bulka bags or small (25kg) woven bags.

“There are savings there for the Western Australian grower and using these Bulka bags will allow them to reduce labour costs and maintain competitiveness.”

The seed used was harvested in January 2010 by Southern Packers and arrived in Mauritius in March that year, where it was planted on two sites operated by Copesud, a large importer of Australian seed. The crop was grown using local agronomic practices and harvested by hand in September 2010.

Results of the harvest showed no significant yield difference

between the two bagging treatments and that Bulka bags were a suitable method of exporting Western Australian seed to Mauritius.

Mr McPharlin said: "The use of Bulka bags appears to work well and the findings are very positive. There are savings there for the Western Australian grower and using these Bulka bags will allow them to reduce labour costs and maintain

competitiveness."

The report predicted that the cost of bagging for Western Australian seed exporters could be reduced by around \$45 per tonne when fully mechanised, which could result in higher profits for both Australian exporters and Mauritian potato growers.

The project also looked at comparisons in the performance

of cut and round Western Australian Delaware seed used in Mauritius, where it is the usual practice to use whole round seed.

Mr McPharlin said: "It could be more economically beneficial if cut seed was used and it would mean that Western Australian growers wouldn't have to be as restrictive in the way they grow their seed."

"However, there is concern that the humidity in Mauritius could cause the cut seed to break down."

"The growers have two options. They either grow the crop for a short period and forfeit total yield, or they grow the crop for a longer period but have to sell the longer tubers. But, if the export market won't take the longer tubers then the growers may struggle."

An experiment was carried out that involved planting both types of seeds in May 2010 and harvesting them in October that year. Seed used for the round seed treatment was 35 to 45mm in diameter, while larger (>55mm) seed was cut in two transversely for the cut seed treatment.

Planting was delayed until late May due to the hot and humid climate at the beginning of the month, which can cause rotting of cut seed pieces.

The results showed significantly

higher total yield from crops grown with round seed compared with cut seed, even though the cut seed pieces were heavier than the round seed.

Despite the slightly lower yield from cut versus round seed, the report said that cut seed still had a role in Mauritian potato production, especially when the weather was cooler in late May.

Mr McPharlin said: "If the tropical market could use the larger tubers, as well as the smaller ones, and cut them in the tropical climate then Australian growers could get higher yield and export most of the crop."

"The experiment went okay, but from a scientific point of view we would like to repeat it and to do it more thoroughly. The companies we are working with in Mauritius are skilful potato growers and are always pushing for economies of scale, so they are willing to work with us on that one."

Researchers have also begun to compare different varieties of seed as part of the project. An initial experiment comparing the performance of the varieties Harmony and Delaware found

that, on average, the yield of Harmony at harvest was 61 per cent of the Delaware yield. It also revealed that the quality of the Harmony tubers was not compatible with the Mauritian market and that there would be no further testing of the variety. Looking to the next stage of the

seed experiments in a more vigorous scientific manner."

"We are trying to develop the agronomy of handling cut seed this year in more detail."

Kon Peos of Southern Packers said this kind of project was important to the industry and in ensuring the export seed market

“The companies we are working with in Mauritius are skilful potato growers and are always pushing for economies of scale, so they are willing to work with us on that one.”

project, Mr McPharlin said: "The varietal work is something that is on-going and we are in the process of talking through some of the experiments that are going to be done this year."

"This year we also want to repeat the testing of different sized Delaware seeds, as well as conduct the cut seed and round

to Mauritius went from strength to strength.

He said: "We started sending 300 tonne to Mauritius about three or four years ago and now we have gone up to 1,000 tonne, so this market has really strengthened quite quickly. So far the project has gone really well and I am now helping

to experiment with different varieties from around the world."

THE BOTTOM LINE

- A two-year project that aims to look at ways in which Australia's competitiveness in the Mauritian export seed market can be improved is being carried out.
- Key areas that the project is focusing on include the size of seed bags for shipping, cut versus round seed, different varieties of seed and different sizes of seed.
- One highlight of the research was the discovery that growers could cut costs by up to \$45 per tonne by shipping the seeds to Mauritius in Bulka bags instead of small woven bags with no effect on the quality of the crop.

i For more information contact:
 Ian McPharlin
 Department of Agriculture and Food Western Australia
 E-mail: <ian.mcpharlin@agric.wa.gov.au>
 Project number: PT09038



Kon and John Peos of Southern Packers in the potato fields in Mauritius, with Jean Pierre Rouillard and Marcel Lejosne.



The Bulka bags arriving in Mauritius and the bags being off loaded.





Fighting the fungi

As part of phase two of the Australian Potato Research Program (APRP2), a study based at the University of Melbourne is looking at one of the most persistent fungi faced by potato growers, writes Karen Shaw.

Groundbreaking new research has found that Verticillium wilt-infected potato tubers could contaminate clean soil. To minimise the risk of soil and crop infection, growers should always plant clean seed. That's the advice from researcher and plant pathologist Prakash Vijayamma Ramakrishnan Nair.

Prakash said these are the early results from a four year project into Verticillium and its effects on Australian potato crops.

"Our work is designed to develop an accurate assessment of soil inoculum level from

naturally infected tubers using a quantitative molecular technique," he said.

Prakash is doing a PhD under the supervision of Associate Professor Paul Taylor from the University of Melbourne; General Manager of ViCSPA, Dr Nigel Crump; Victorian Department of Primary Industry's Dr Ian Porter and Dr Tonya Wiechel. The study is funded through the Australian Potato Research Program (Phase 2).

There are two main species that affect potatoes-*Verticillium dahliae* and *Valbo-atrum*.

Both are fungi that attach

to the roots, then move inside and colonise the plant through its vascular system, causing problems such as wilting and early dying. In potatoes this can decrease tuber size and lower crop yield. In the US, research shows that both species, in severe cases, caused crop losses of up to 50 per cent.

Prakash said that Verticillium could attack more than 200 species of plants. Both species occur in Australia. *V. dahliae* is much more persistent than *Valbo-atrum*, often persisting in the soil for up to 10 years as microsclerotia in overseas experience.

"It's a chronic problem in the potato industry internationally and limits production in irrigated regions throughout the world."

Although verticillium wilt has been recorded as a problem in potato crops in Australia since the early 1970s, little research had been done on what species were causing the problem and its effects on production.

"We knew crops in Victoria, Tasmania and South Australia had problems and 25 samples of fungus from these were contained in a culture collection at the DPI in Knoxfield. These were analysed to confirm that *Verticillium dahliae* is the

species causing problems here in Australia,” Prakash said.

“We also found from these studies that the strains of the fungus in various parts of Australia, Canada and the United States are genetically similar,” he said. This shows that at this stage the fungus has mutated very little.

Prakash said that when Verticillium wilt first appeared in crops it tended to be localised and caused mild symptoms.

“Growers should initially be looking for signs of leaf chlorosis and necrosis. Look for where individual leaflets or stems start to die,” he said.

But he admits it's very difficult to distinguish.

“Often the disease symptoms start early in the growing season, but don't show up until the potato plant is almost mature. Another problem is that even potatoes with symptoms such as stem end vascular discoloration don't necessarily have the disease.”

“We examined potatoes with discoloration, and found that it did not always correlate with the presence of this pathogen. This means that symptoms alone are a poor indicator of infected tubers, making identification even more difficult,” Prakash said.

“We know that in early years the Verticillium pathogen causes only moderate damage to crops, but as the inoculum builds

and more virulent strains are naturally selected the disease also becomes increasingly severe,” he said.

Overseas studies reported that seed tubers could also carry high levels of *Verticillium* spp.

“This is a real problem in many regions because often contaminated seed is planted and it not only damages the crops but the Verticillium, in its resting form can live in the soil

“Our work is designed to develop an accurate assessment of soil inoculum level from naturally infected tubers using a quantitative molecular technique.”

for many years.

“The danger is that once the pathogen becomes established in these regions it is very difficult to control. We have already isolated *Verticillium dahliae* in the vascular tissue of 33 seed samples taken from farms where the disease was known to be present.”

“We planted these infected tubers in pasteurised soil. An analysis of the soil after harvest found evidence of the pathogen,

probably caused when the tubers decomposed in the pots. But it shows clearly how easily the pathogen can contaminate clean soil.”

“We now want to understand what happens to the progeny and whether these tubers will be infected too. We have just planted seedlings of Shepody and Russet Burbank in a pot with the same contaminated soil and are looking forward to

seeing the results in the next couple of months,” Prakash said.

A further complexity of Verticillium, according to Prakash, is that it is thought to interact synergistically with nematodes and contribute to a disease known as potato early dying.

“But at this stage little is known about how this happens. We believe that the nematode has the ability to activate

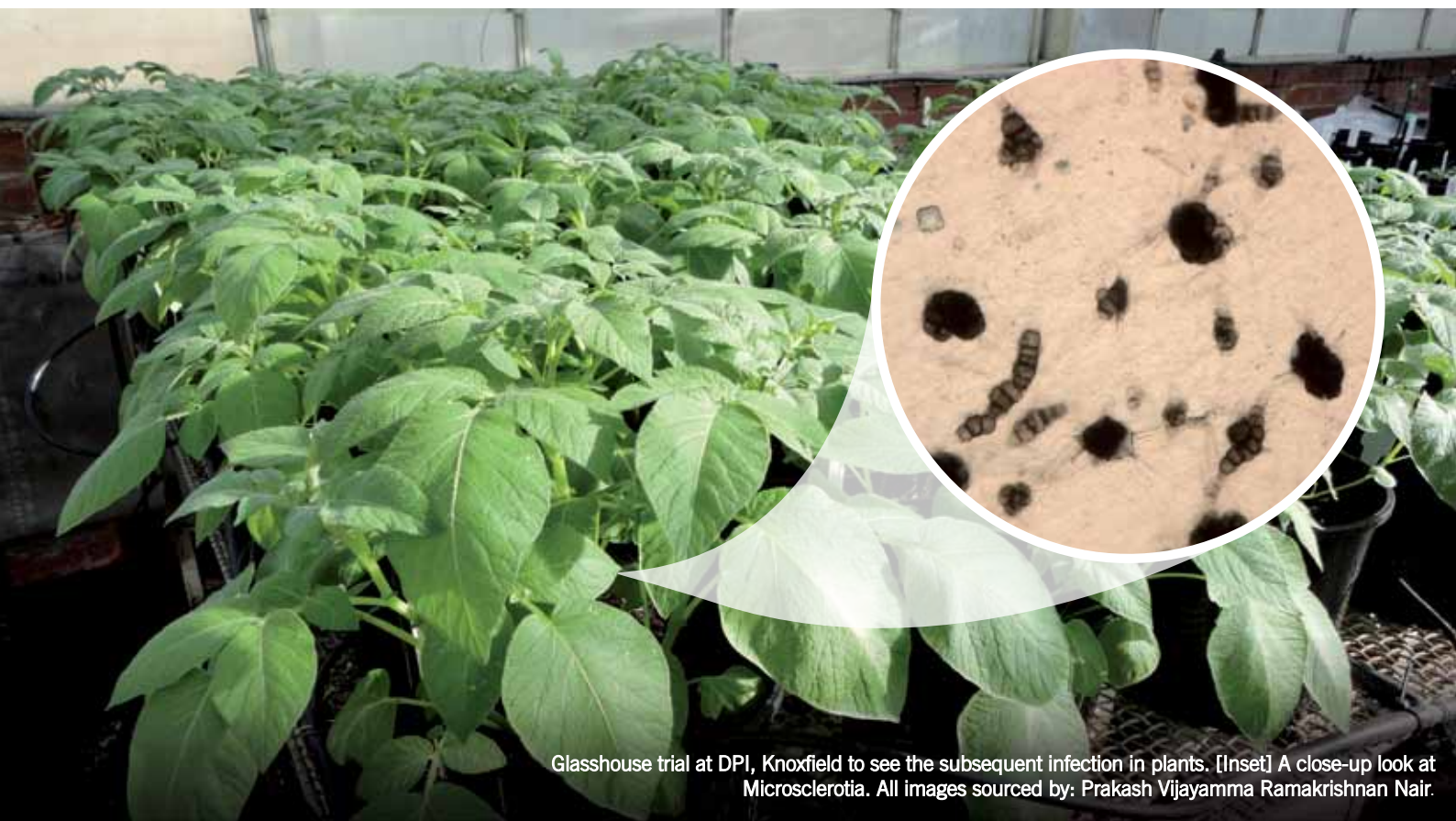
Verticillium and promote disease, but we want to isolate which nematodes are responsible for early dying, a trial that will constitute phase three of the research study,” Prakash said.

Prakash is keen to hear from growers who want to contribute to his research work. His email is: prakasvr@gmail.com.

THE BOTTOM LINE

- Good progress is being made to better understand this disease, with particular interest in learning more about the importance of any seed infections.
- It is believed planting infected seed can lead to soil becoming contaminated if it was previously clean. What is unknown is the significance of this infection for future crops.
- These are the early results of a four-year research project into Verticillium wilt and its effects on the Australian potato industry.
- The research will also look at how Verticillium interacts with nematodes to cause potato early dying disease.

i For more information contact:
Dr Paul Taylor
Project Leader
Email: <paulwjt@unimelb.edu.au >
Project number: PT09029



Glasshouse trial at DPI, Knoxfield to see the subsequent infection in plants. [Inset] A close-up look at Microsclerotia. All images sourced by: Prakash Vijayamma Ramakrishnan Nair.

Potatoes South Africa's viral focus

In this International R&D Update, Professor Dirk U. Bellstedt of the University of Stellenbosch in South Africa details one of the key areas for research and development for Potatoes South Africa.

South African potato producers share many production problems as of the same Australian potato producers, who also strive to produce potatoes in a harsh, hot and dry environment.

As a consequence of water shortages, potato producers in South Africa are now largely producing the crop under irrigation and no longer under dry-land conditions. Extremely high input costs (R\$100,000 per hectare) are also making the risk too high to rely on erratic rainfall to ensure crop success.

This has resulted in very intensive production under irrigation in South Africa which produces an average yield of 45 tons per hectare. However, this intensification has come at a price, with an acute increase in bacterial and viral infections which hold potentially disastrous consequences for the industry. These production trends have forced Potatoes SA to focus its R&D activities on these problems.

The major viral threats to SA potato farmers come from Potato Virus Y (PVY) and Potato Leaf Roll Virus (PLRV), whilst Potato Viruses X, M, A and S and Tomato Spotted Wilt Virus (TSWV) appear to pose minor threats to the industry.

Potato leaf roll virus

Despite the overall decrease of PLRV in other parts of the world, the threat to the South African potato producer has remained very real. As a result, an investigation into the variation of PLRV isolates in South Africa was initiated in 2004 at the University of Stellenbosch with a view to establish which strains of PLRV were present in South Africa. Based on coat protein sequences of a large number of South African PLRV isolates,

this revealed that South African PLRV isolates either belonged to a closely related European grouping or a broad group of isolates related to Australian PLRV isolates (Bellstedt, unpublished). A possible explanation for these results may be that the isolates related to European isolates have been recently introduced into South Africa with the introduction of European cultivars.

The much larger variation in these PLRV isolates may also point to the fact that PLRV strains that infect potatoes in South Africa and Australia just simply have a different origin and that these strains are capable of much faster mutation and hence evolution in the southern and warmer climates of South Africa and Australia.

Closer collaborative research into this variation may therefore benefit both the South African and Australian potato producer in future.

Potato virus Y

In contrast to this, the threat posed by PVY in South Africa has largely followed European trends. Up until the mid 1990s, field symptoms as a result of PVY infection could be clearly identified as being of the PVY ordinary strain (PVYO) or the PVY necrotic strain (PVYN), the dominant strains up to that time.

After 1995, a change in PVY became apparent and inspectors of Potatoes SA were confronted with confusing symptoms often leading to misidentification in the field but with subsequent laboratory (enzyme-linked immunosorbent assay, ELISA) confirmation of infection. As a consequence, an investigation into the variation in PVY strains in South Africa

which was funded by Potatoes South Africa was initiated at the University of Stellenbosch in 2004. The studies found that it is very likely that these strains were imported with new cultivars that were imported into South Africa from Europe.

An infection of potatoes exhibiting necrotic tuber symptoms as a result of infection with the PVY^{NTN} strain was independently confirmed by the Scottish Agricultural Science Agency (SASA) in 2005.

Not only does infection with these strains result in severe crop yield, but rejection of tubers exhibiting necrotic lesions can lead to total crop failure effectively. It must be mentioned that every effort was made to import new potato cultivars without associated diseases from Europe by importing tissue culture material only, but it appears that the ELISA screening (RT-PCR screening was not available then) that was used may have been too insensitive to detect the very low levels of PVY infection, and specifically by the PVY^{Wilega} and PVY^{NTN} strains, of imported potato tissue culture material.

A disturbing finding during the screening of viral isolates from South African potato stocks was the identification of the NE-11 viral strain isolated from minitubers imported from China (Lorenzen, 2008) and the identification of the SASA 61 from Scotland (Visser & Bellstedt, 2009). Both of these viral strains appear to have been eliminated thanks to their early identification, but highlight the dangers of importing any potato material into South Africa.

Potatoes SA supported further research into the complete

sequencing of a limited number of genomes of PVY of which most were PVY^{NTN} with the objective of assessing the total variation in PVY isolates in South Africa.

This has given important additional insights into the trends of PVY evolution in South Africa. For the potato farmer, such exercises have remained largely academic and for these reasons, further studies into the resistance that different cultivars show to different viral isolates have been launched.

An expanded evaluation of the resistance of the potato cultivars planted in South Africa to the viral isolates present in South Africa is planned.

This research has shown that control of the effects of viral infection of potatoes can only be brought about by a combined strategy of eliminating virus infection through testing of seed potatoes, assessing viral threat through aphid vector and strain monitoring, screening of tissue culture material and particularly newly imported material using RT-PCR, and the planting of resistant varieties.

Contact with European and USA PVY researchers through the recently established PVY Wide Organization has also brought very real benefits in bringing South African researchers into contact with their counterparts in other areas of the world.

i For more information, please contact:
 Professor Dirk U. Bellstedt
 Department of Biochemistry
 University of Stellenbosch
 Private Bag X1
 Matieland 7602
 South Africa

Name: Chris Ayres

Age: 25

Location of farm: Bornholm, WA

Potatoes farmed: We're purely seed growers. We do a range of fresh varieties for supermarkets and a range of crisping varieties for various chip factories.

Role in company: Director/Farm Manager. I'm involved in all areas including harvest, labour, and sorting out everyday goings-on on the farm.

How did you get into the industry?

Through my family. I'm a fourth generation spud grower.

Do you plan to continue farming into the future?

Yes, I'm committed to the farm for the rest of my life. It's a challenging industry at times—it's got its ups and downs—but it's a pretty good challenge.

What are some things you think could help ease the stress on Australian growers?

In the export industry now that the dollar's so high, the government assistance for exporting these days has really let the exporters down. It seems to be easy to import these days, but it seems the government has taken all our rebates off those who want to export and it's made it harder for Australian growers to send seed potatoes overseas.

As you might know, the average age of farmers in Australia continues to rise. How do you think younger people could be encouraged back into farming?

That's tricky, because these days it's getting harder to start up farms if you're a younger grower

unless you can get government support for it. In the potato industry especially, you need so much equipment to get started, it really boils down to getting government assistance to start a business in the farming sector.

What's the best thing about your job?

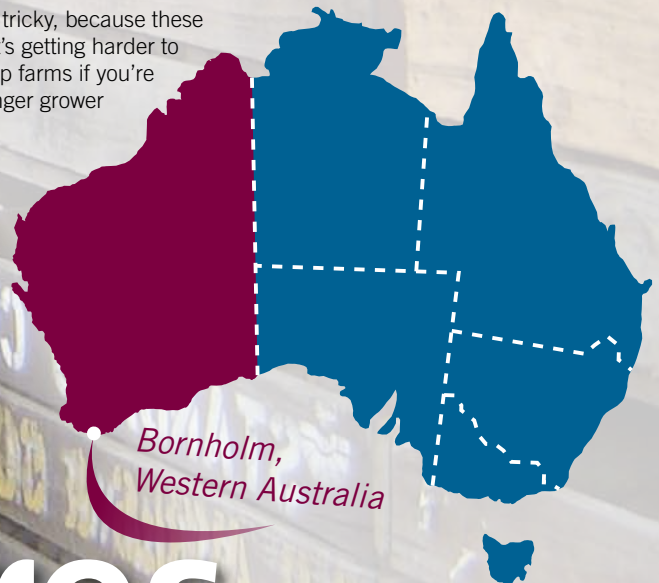
You never do the same job for more than three or four weeks. We start planting in September through until December, and then harvest from January right through to May.

If you weren't farming, what would you be doing?

If I wasn't farming on our farm, I'd be farming on another farm!

Do you read *Potatoes Australia*? If yes, what do you like about it most?

Yes, I like the grower features. I think that's a pretty good part of the magazine. Reading about the new products on there is good, but just seeing the overviews and seeing different situations other growers are in is well detailed. You never see other people's profiles put up on a page anywhere else. I like seeing the overviews of who else is growing.



Q&A

Young Grower

Chris Ayres

Managing nitrogen in your soil



Rohan Davies

In this inaugural edition of Soil Solutions, Rohan Davies, Research and Product Development Manager at Incitec Pivot Fertilisers discusses the ways nitrogen can be handled to improve your potato crops.

Question: *How do fertilisers behave in the soil after application? Can the nutrients move too far down?*

Some nutrients are quite mobile in soils. Others tend to stay where they are placed. Phosphorus, for example, moves very little in most soils.

More often than not, phosphorus will only diffuse distances of up to 5 cm from the fertiliser granule with the nutrient's concentration decreasing the further away from the granule it moves.

The ammonium form of nitrogen is similar. Ammonium nitrogen can be tightly held on exchange sites by clays and

organic matter, preventing it from moving through the soil.

Ammonium nitrogen is not subject to leaching losses. However, it is usually quickly converted to nitrate nitrogen by soil bacteria.

This can happen quite rapidly, given the right soil conditions and temperature. For example, in a laboratory experiment under a moist alkaline vertosol soil kept at a constant 25°C, 97 per cent of applied urea had converted to nitrate after 14

days (Suter et al, 2008).

In most situations, the majority of the nitrogen taken up by plants is nitrate nitrogen. However, nitrate nitrogen moves around in the soil with soil moisture. Some nitrate nitrogen can be expected to be at the wetting front of the soil.

Nitrogen in the soil

As nitrate nitrogen is a readily plant available source of nitrogen for your crop, this has significant implications for application timing and irrigation scheduling.

Even normal irrigation scheduling may cause some nitrate to be moved beyond the root zone. Under very wet conditions, nitrate may move well beyond the root zone and be unrecovered by your crops.

Consider the relatively gentle irrigation system of drip tape. Using some simple food dye through the system, researchers in the United States estimated that when applying 294 L per 100 metres per hour on a light textured soil, the food dye had travelled 25 cm into the soil after two hours and 38 cm into

the soil after four hours (E.H. Simonne et al, University of Florida, March 2005).

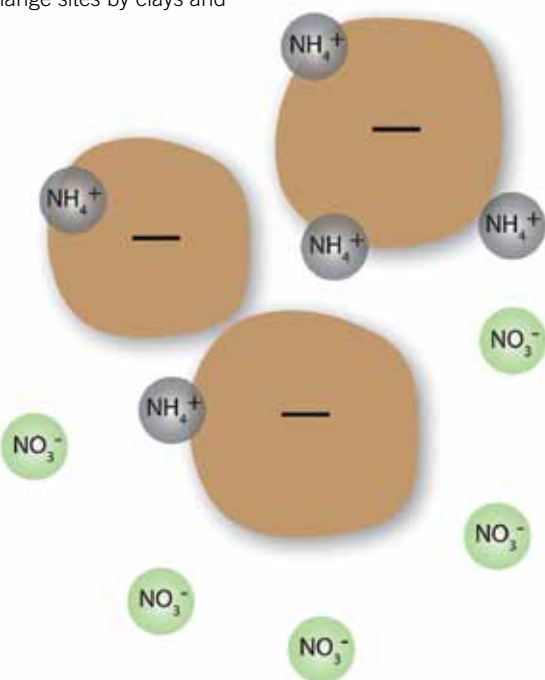
While the depth irrigation water will travel in the soil will vary depending on the chemical properties of your soil and the nutrient being applied, it illustrates the importance of knowing where the crop's roots are and what the crop's nitrogen requirements are at a given stage of growth.

Potato crops take up relatively small amounts of nitrogen per day until tuber initiation and tuber bulking.

Applying large amounts of nitrogen early in the crop may be inefficient and lead to leaching losses.

Good fertiliser nitrogen management involves applying appropriate rates and products, placing the fertiliser where the plant is best able to use it and timing applications for use during periods of greatest crop need.

Sometimes it is difficult to achieve all these goals. The use of ammonium stabilisers such as ENTEC® can further assist with nitrogen management.



Nitrate nitrogen (NO_3^-) is susceptible to leaching. Ammonium nitrogen (NH_4^+) is attracted to negatively charged soil particles.

i Soil nutrition questions

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

Kestrel—a marketer's dream

Rene de Jong, National Manager Potatoes at Elders Rural Services provides insight on the hard-to-miss Kestrel variety.

When it comes to potatoes, it is not often you will have such a well identified potato such as Kestrel. It has a very distinctive purple blush around the brow of the eyes of tubers which is attractive and novel but also acts as an identifier for consumers wanting repeat purchases of Kestrel.

A marketer's dream maybe, but it has to be backed up with quality and constancy. So what's Kestrel like?

Kestrel has a cream, washing type of skin and a white flesh with characteristics of potatoes that the older generation can remember—that real potato flavour! This flavour revolves around texture and general subtle tastes and smells. The texture comes partly from a medium to slightly higher than "average" fresh market dry matter and a slightly grainy texture, although this can become less grainy-bordering

on smooth-as the tubers are supplied to market after some storage. The subtle tastes and smells are more a varietal characteristic.

Kestrel is an elongated potato that has shallow eye depth and is generally regular in shape. It sets fewer tubers than some other potatoes, but from the sandy soils in South Australia, can set reasonably high numbers of tubers that most often are able to be filled

resulting in good sized tubers for the market.

Because of the variety and its ability to size up, it can be readily grown and produces high quality potatoes for the market.

i For more information on the Kestrel potato variety, contact Rene de Jong
 Phone: (03) 5337 9999
 Website: <www.elders.com.au>
 Or your local Elders representative.



Purple-eyed Kestrels on display. Image courtesy of: The South Australian Potato Company



Dealer for Manter Weighers & Baggers and Symach Palletisers

If it's worth growing, it's worth handling with Wyma

Wyma are the international experts in post-harvest solutions. When you buy Wyma, you buy proven technical quality as well as a deep understanding of post-harvest handling.

From consultation through to design, manufacture, installation and support; you know that with Wyma, you get the benefit of our "fresh thinking" culture wherever you are in the world.

Tipping | Hoppers | Conveying | Waste Removal | Washing, Brushing & Polishing | Peeling | Water Recycling | Inspecting | Cooling | Drying | Sizing | Filling | Post-Harvest Solutions



Working with IPM in the potato industry

In this edition of *Potatoes Australia's Pests & Diseases Profile*, Dow AgroSciences takes a close look at the way Integrated Pest Management (IPM) can be used effectively to ensure a healthy crop.

Every Australian potato grower knows that he or she is in a constant battle with pests and diseases that can potentially decimate their crop. Pests and diseases attack potatoes both above and below the ground at every stage of the crop cycle from planting all the way through to harvest and then in storage as well. To win the war against these worthy adversaries, they must be attacked on a number of fronts using every tactic available.

This is what is called Integrated Pest Management (IPM).

Some examples of IPM in potato growing include:

- Crop rotation so pests and diseases don't build up from year to year.
- Removing weeds which pests and diseases survive on between crops (referred to as a 'green bridge').
- Controlling weeds growing on paddock margins. These weeds are sometimes called 'alternative hosts' and provide safe homes for pests even when the crop has been sprayed.
- Soil cultivation which disrupts the life cycle of soil-dwelling insects (e.g. wire worms and beetles).
- Hilling-up and water management to maintain soil cover on tubers and stop cracks developing in soil.
- Fostering beneficial insects which prey on insect pests or parasitise them.
- Applying IPM-friendly insecticides to maintain a balanced approach to achieve optimum crop quality and yield.

In the potato grower's armoury is a large number of insecticides which can be judiciously used

to control insect pests.

While there are more than 25 active ingredients approved for controlling insects in potatoes, at least some of them are ineffective as the insects have developed a resistance to them, and some are just downright unpleasant to use and kill everything, including the beneficial insects. Others have a very specific purpose and when used correctly can help build beneficial insect populations.

There are, however, several new insecticides now approved for use in potatoes and these have avoided both of the problems mentioned above.

One of these is Success NEO Insecticide.

Success NEO is a new product based on the ingredient 'spinetoram'. Success NEO is compatible with IPM and is safe for use on potato crops, and because it is new there is no insect resistance. It will control the main caterpillar pests—potato moth, loopers and heliothis (*Helicoverpa spp.*)—while not affecting the predatory insects that help keep other pests in check.

In potatoes, Success NEO has a three-day withholding period (WHP) so it can be used right up to harvest and is approved for use in a huge range of other vegetable crops in which it has the same or even shorter WHP.



21-23 June 2011

International Potato Processing & Storage Convention 2011

Where: Crowne Plaza Hotel, Denver, Colorado USA

What: The fifth annual event will see an ever-expanding list of local exhibitors on hand to provide attendees with information on agricultural products.

Further information: www.potatoconvention.com

5-7 July 2011

Ag-Grow Emerald

Where: Emerald, Queensland

What: One of the top field days in Australia, Ag-Grow brings together up to 1,500 companies and over 28,000 visitors annually covering all areas of the agricultural sector.

Further information: www.aggrow.com.au

19-21 July 2011

NSW Farmers Association Annual Conference

Where: Sydney Showgrounds, Sydney Olympic Park

What: The annual NSWFA conference featuring policy sessions, 'Food Security' panel session, access to more than 20 agribusinesses in the exhibitor hall, social events and the announcement of the 2011 Farmer and Young Farmer of the Year.

Further information: www.nswfarmers.org.au

24-29 July 2011

EAPR2011: The 18th Triennial Conference of the European Association for Potato Research

Where: Oulu, Finland

What: Conference focusing on all areas of potato research around the globe, such as potato breeding, and how to increase potato consumption through research.

Further information: www.eapr.net





SUPERNOVA™

Powerful Protection from disease

Unleash the Real Power of Supernova

Supernova provides protection from disease in a broad range of crops that includes potatoes, cucurbits, mangoes and grapevines.

Based upon chemistry originally derived from mushrooms its locally systemic mode of action ensures strong protectant activity for optimum disease control.

Available at:



Real Power.

Crop Care Australasia Pty Ltd 061 362 247 © Supernova is a registered trademark.



Cleaning, handling and storage systems.



Think of Grimme and you think of potato harvesters. Complete the potato process from field to store with the Grimme range of advanced crop handling and storage equipment.

At every stage during and after harvest, every transfer and drop is critical.

Protect your investment with Grimme. Call Craig Hopkins on 0418 501 647.