

potatoes australia

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Australia's Potato Industry
October 2007



Profile : Wal Anderson

R&D : PVS, PVX, breeding trials and powdery scab



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Contents

2	Contacts & credits	18	Breeding trials show promise despite drought
3	Government supports irrigators in Murray-Darling Basin crisis	20	Managing the hidden threat of PVS and PVX in seed potato crops
4	Chairman's message	22	European powdery scab workshop in Switzerland
4	Editor's message	24	Horticultural apprenticeships given a boost
6	Profile: Wal Anderson	27	Surviving the black dog: Depression in rural Australia
8	Queensland growers increase their industry involvement	30	Data paints clearer potato picture
9	News	32	Potatoes take a bow at Restaurant 07
10	New potato variety 'Star performer' in WA	34	Harvesting equipment on show for growers
10	Vegetarian Week puts vegetables front and centre	35	Potato research scholarships
11	Former NSW IDO to tackle regional environmental issues	37	CEO's message
12	Australian Grown Campaign strikes chord with consumers	38	PPR&D - Update
14	Fresh potato marketing development	39	PPR&D - Researchers
16	HAL seeking potato R&D proposals	31	Spotlight on: Potato cyst nematode
		32	Chips a look at what's new in potato information and technology

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Government Supports Irrigators in Murray-Darling Basin Crisis

The Murray-Darling Basin Crisis Taskforce met again in mid-September with the Federal Minister for Agriculture, Fisheries & Forestry, Peter McGauran, his senior officials and officials from Centrelink, as part of ongoing discussions over the looming crisis in the southern Murray-Darling Basin (MDB).

The industry delegation was led by Horticulture Australia Council (HAC), the national peak association representing the horticultural industries, and included representatives from all regions of the Basin, and the major industries at risk.

The region produces 41 per cent of the nation's agricultural output - and includes more than 138,000 hectares of permanent horticultural plantings, which produces over 60 per cent of the nation's fruit, as well as significant vegetables, dairy and rice.

On 1 July, for the first time ever, allocations for irrigators in the southern MDB were severely cut to either zero or minimal amounts. Current signs for the survival of these crops (and particularly permanent plantings) are grim. With the exception of the Murrumbidgee Irrigation Area, much of the Basin is expected to die before the end of the year.

The economic and social consequences of this to the growers, and the thriving communities which rely upon them, are potentially staggering for regional Australia.

Minister McGauran assured the delegation that the Government is fully aware of the scope and extent of this widespread disaster, and will offer assistance to irrigators in these unprecedented circumstances.

"The Minister foreshadowed welcome changes to the Exceptional Circumstances (EC) program which will make EC more accessible to intensive irrigated industries, and assist in supporting farming families, affected small businesses, and their communities, through this crisis and the subsequent recovery process," said Stuart Swaddling, HAC Chair.

"In the case of permanent plantings, this is a long-term process; it can take five to ten years after replanting to produce a commercial crop which again brings in an income.

"The Minister also assured us that the Government was considering a longer term recovery package for irrigators in the Basin, to be announced in the near future. We will continue to work closely with Government on the detail of the assistance package, to ensure regions and industries involved are able to replant and re-build on a sustainable basis into the future," Stuart said.

Contact:

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or Kris Newton, CEO, (02) 6273 9600; 0439 960040

AUSVEG Potato Group Chairman's message

Usually when I write this message for *Potatoes Australia*, it covers only the industry in Australia. On this occasion I'm going to break from that tradition and relay my experience at the 20th Anniversary of the signing of the Montréal Protocol.

AUSVEG asked me to travel to Montréal on behalf of the Australian Vegetable and Potato Industry to receive the United States Environmental Protection Agency award. The plaque reads:-

**Stratospheric Ozone Protection Award
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In the first 2 decades of the Montréal Protocol

Presented to The Australian Methyl Bromide Phase-out Team
For leadership and dedication to Methyl Bromide
Phase-out and Stratospheric Ozone Layer Protection

The award was presented to the Australian team that has helped phase out ozone depleting substances (ODS) and helped industry develop strategies to keep us world competitive and meet our responsibilities as global best practice citizens.

Dr Ian Porter (DPI Vic) and Dr Jonathan Banks (United Nations, based in Canberra) are world renowned scientists on Methyl Bromide (MB) and are part of the United Nations Environmental Program (UNEP) forming part of the UNEP assessment team that advises the parties (signatories to the Montréal Protocol) on what the ODS are doing and how to return the ozone layer to health. Both have a high standing in the international science community.

Ian, who's a member of the Methyl Bromide Technical Options Committee (MBTOC), was one of six international scientists who

presented a report to the UNEP (119 countries). Presenting to UNEP is a daunting experience. Each question that is asked after the presentation is carefully worded and the answer that is supplied by MBTOC is also carefully calculated and answered. One wrong word or statement in front of the UNEP can result in the scientist's presentation being shot down in flames. Talk about a pressure cooker environment!

At a special awards function on September 19, Ian and I took to the big stage to receive the award. The Methyl Bromide phase out award is as much about the science community finding better alternatives for industry to use as it is about industry taking the best advice from our scientists.

The UNEP receives critical use exemption applications from the parties for MB and issues licences for MB use in that country. Currently Australia is applying for exemptions of 29,790 tonnes for strawberry runners and 7,820 tonnes for rice. The United States of America has applied for a total 4261,974 tonnes for a variety of crops, ornamentals and mills and processing.

We have received our award because we got on with the job. We all need to play our part.

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



David Anderson
AUSVEG Potato Group Chairman

Editor's message

As the Federal Government increases its commitment to growers in the form of additional drought relief funding and a new apprenticeship initiative for the agricultural and horticultural industries, recently released data has given fresh insights into the shape of the vegetable industry in Australia, highlighting potatoes as a major component of the industry.

In this issue, we provide some detail on the apprenticeship offer, get a Western Australian perspective on growing potatoes and take a look at the state of the potato industry courtesy of AUSVEG's Ian James.

The inaugural Vegetarian Week also kicked off just after the AFL and Rugby grand finals while in Western Australia, the White Star potato variety, originally developed through the potato levy, has been launched at the Royal Perth Show.

Matt Wickham has finalised the fresh potato strategic plan and he fills us in on what's planned to help jumpstart the industry's marketing

overhaul while we update what's happening with the Australian Grown campaign and how tractors fit in.

Also included in this issue is a reader survey seeking your feedback on the magazine which in addition to giving you a say in what we cover in the magazine, also gives you the chance to win a Navigator 3000 GPS if you get it back to us by 15 November.

Keep your eyes peeled next month, for the annual *Potatoes Australia Review*, which contains a complete roundup of the R&D work conducted over the last 12 months.



Simon Adams
Editor
AUSVEG

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Wal Anderson

Working against the odds

Achieving success in farming is not always easy. But as potato grower Wal Anderson will attest, persistence and optimism is the key to enduring tough times. Youna Angevin-Castro finds out how he does it.

“I consider leaving this industry about 14 times a day,” he said, “but at the end of the day, we get through the rough patches and keep farming, because that is what we do.”

Wal’s dedication to the land is not unique, and his commitment to the industry does not mean that he is immune to the difficulties created by weather, restricted markets and shrinking profits. If anything, his story is reflective of that of thousands of growers Australia-wide who are battling through tough times.

Growing potatoes for over thirty years, he comes from a long line of farmers who arrived from Scotland over 100 years ago.

“My family originally grew fruit, and eventually diversified into other commodities. During the war, they made their income by growing cabbages and carrots to feed the troops,” he said.

Since 1996, Wal and his son Matthew, along with the rest of the family, have been farming from their 3500-acre property near Lancelin, north of Perth. He grows his crops in 300 acres of sandy plains, typical of the region, and this in itself is an interesting challenge.

“Growing in sand presents a number of advantages and disadvantages,” Wal said. “On the positive front, harvesting can proceed even when it’s wet, and we can grow potatoes all year round. However, one of the greatest challenges is maintaining the nutrient and moisture levels in the soil. This is particularly difficult when you get a lot of rain.”

But while sand farming keeps Wal on his toes, it is the wealth of other issues affecting his operations that bother him the most. Labour, for instance, is an ongoing concern, as Wal is finding it increasingly difficult to source affordable and reliable workers.

“Finding staff is difficult. The mining boom has drained the region of labour, and I can’t find affordable staff to assist with harvesting.



“I’ve tried hiring backpackers, but it doesn’t always work out, so I’ve now reached a point where I only hire labour when it is absolutely necessary.”

This, in turn, has created additional problems. To replace the manual labour, Wal has had to invest in additional machinery to get the job done.

“I think, like most growers, the cost of equipment is a problem. I’ve had to buy bigger and better machinery so I can use fewer people, but the level of debt you take on is crippling. Instead of a \$30,000 tractor, you go up to \$200,000 plus, and it just isn’t possible to buy this type of equipment outright.”

While Wal sells the majority of his potatoes to local processors for the snack foods sector, he also grows a small quantity of potatoes for the table trade, but admits it is a difficult market. He also works with an agent in Asia to send part of his production overseas.

“I only deal with one customer, but it’s enough to offer market diversity, and maintain some economic viability. The rising value of the Australian dollar is making it more expensive to buy our product, but providing you can maintain the quality of your crop, they are prepared to pay the price.”

But with rising overheads and increasingly limited market opportunities, growers such as Wal are finding it difficult to make a profit from their crops.

“It is definitely getting tougher and tougher – that little green wedge of profit is only a small sliver these days, and it’s getting harder to make a crop pay.”

Wal’s greatest annoyance is the expectation that growers should continue to absorb the increasing costs of growing, while buyers demand lower prices.

“Growers just can’t continue absorbing costs as they have been over the last number of years,” he said. “It has gotten to the point where we seriously need to consider whether it is economically viable to plant a crop each year.”

Adding to his frustrations are the constant requests for information and statistics, as well as mounting reporting and monitoring requirements enforced by a variety of regulatory bodies.

“Water monitoring, soil monitoring, fertiliser regulation...it never ends. It is hard to find the time to fill out all the forms, not to mention the added costs for getting your water and soil tested on a regular basis.

“I get annoyed at the idea that farmers are solely responsible for the state of the environment today. I once heard this bloke say: ‘With all this worry about land erosion and global warming, I don’t want to be the bloke that wrecked the planet.’ And I guess that sums up how I feel. I’m happy to do my bit, but we can’t fix a hundred years of environmental damage overnight.”

Despite the setbacks and frustrations, Wal continues to be optimistic.

“We’ve been through ups and downs before, and it really is a cycle. My family has been growing for over 100 years. I’m sure they went through similar difficulties, but a century later, we’re still farming.”

Queensland growers increase their industry involvement

Northern Queensland growers are taking steps to improve their collaboration in the vegetable industry, signing an agreement with AUSVEG to improve communication and exchange information between the two organisations.

The agreement, a Memorandum of Understanding (MOU), was officially signed at a meeting in Bundaberg on 16 August 2007 where members of the Bundaberg Fruit and Vegetable Growers (BFVG) organisation had gathered to discuss a range of issues affecting their businesses.

Major priorities for the BFVG include better industry representation, communication and an improved research and development alignment to industry needs.



L to R: BFVG Chair David DePaoli, AUSVEG CEO John Roach, AUSVEG Chair Michael Badcock and BFVG Executive Officer Matt Dagan

"It is a great advantage to all growers to work cooperatively together and this MOU is a formal acknowledgement of this goodwill," AUSVEG Chair Michael Badcock said.

The MOU is an agreement between the two organisations that will improve their mutual understanding and relationship. It also creates formal lines of communication for better gathering and dissemination of information to growers.

"This is a major step forward for the industry in improving collaboration, which is one of the primary objectives of VegVision 2020: the vegetable industry strategic plan," Michael said.

The MOU was signed by Michael Badcock and BFVG Chair David DePaoli with AUSVEG CEO John Roach and BFVG Executive Officer Matt Dagan officially witnessing the agreement.

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Committee to evaluate Code of Conduct

A committee of growers, wholesalers and market operators has been appointed to advise the Australian Government on the operation of the Horticulture Code of Conduct.

The committee is comprised of: Chairman, Hamish Bain (Qld); two grower representatives, Mark Chown (SA) and Fabian Carniel (Qld); one grower/packer representative, Darral Ashton (NSW); two wholesaler representatives, John Prendergast (Vic) and Trish Skinner (WA); and one market representative, Brad Latham (NSW).

The terms of reference for the committee are to provide the Australian Minister for Agriculture, Fisheries and Forestry, Peter McGauran advice on:

- 1 The impact of the Code including the extent to which it is improving transparency and clarity of trade
- 2 How growers and wholesalers perceive the Code
- 3 Options and practical actions that will support the effective operation of the Code
- 4 Options to increase awareness of the Code and its requirements, and
- 5 General issues relating to the Code including the provision of an annual report on the committee's activities.

The Horticulture Code of Conduct was introduced in May this year to regulate trade between growers and wholesalers of fruit and vegetables. It established a dispute resolution process and aims to improve the transparency and clarity of transactions.

MOU signed with Potato Processing Association of Australia

AUSVEG and the Potato Processing Association of Australia (PPAA) signed a Memorandum of Understanding (MOU) in Sydney in late September.

The ceremony was conducted by AUSVEG Chair, Michael Badcock and PPAA President, Allan Smith in front of the AUSVEG Board.

The MOU is an agreement between the two organisations that will further enhance their mutual understanding and relationship and increase communication.

This is a major step forward for the industry in improving collaboration and is one of the primary objectives of VegVision 2020; the vegetable industry strategic plan.

AUSVEG looks forward to forming similar working relationships with like-minded organisations for the future cultivation of the industry.

The PCN Update

Despite a small funding issue, the PCN project continues to move along at a steady pace. Within the management plan group several working groups have broken off to work on specific issues that will need to be dealt with before the first draft of the management plan is completed. The issues include the risk management plan also comprising pathway analysis and mitigation steps to deal with the pest.

Under grader sampling continues to be promoted nationally but is yet to be adopted by any states due to the uncertainty of who will complete and fund the exercise.

Projects are currently being developed to undertake more research on PCN. Details are likely to be available in late 2007.

International vote of confidence in technituber technology

Australian seed potato biotechnology company Technico Pty Ltd has been purchased by United Kingdom interests.

Founded in Crookwell in 1994, the company developed a proprietary technology known as 'Technituber' which allows production of commercial quantities of affordable high grade seed potatoes within two field generations.

Strongly supported by the Crookwell Potato Association, the organisation started as a seed potato research and development project before developing the Technituber technology and rapidly expanding, establishing international subsidiaries in the USA, Asia and India.

Technico also works to improve supply chain performance, particularly in developing countries.

New potato variety 'Star performer' in WA

A new variety of potato initially developed through the Western Australian Seed Evaluation Program funded by the Potato Producers Committee (APC) has been launched as a commercial product.

Launched at the Perth Royal Show, the White Star variety has been commercially grown over the last two years, with demand exceeding the current availability of supply.

"Although supplies are limited at the moment, White Star has the potential to be as popular as the Nadine", chairman of the Potato Producers' Committee, Sam Calameri said.

"White Star is a cream coloured variety that tastes great and mashes really well," he said.

One of the major growers of White Star in Western Australia, Sam currently grows approximately 600 tonnes through the winter months.

White Star is a durable variety, able to produce large tubers under adverse growing conditions, making it an excellent option for winter crops.

Initially developed by the Department of Primary Industries Victoria, the White Star variety was placed on the Potato Marketing Corporation of Western Australia's Preferred Variety List in December 2005.

Vegetarian Week puts vegetables front and centre

*National Vegetarian Week
Ambassador Jackie O
and AUSVEG Chairman,
Michael Badcock*



The inaugural National Vegetarian Week, organised by the Australian Vegetarian Society, was held from 1-7 October to increase consumer awareness on the nutritional benefits of a vegetarian diet.

Co-sponsored by AUSVEG and Sanitarium Veggie Delights, the week was launched on Wednesday 26 September at an event hosted by celebrity vegetarian and National Vegetarian Week Ambassador, Jackie O.

Co-launching the event, AUSVEG Chairman Michael Badcock took the opportunity to highlight the nutritional value of vegetables, in particular potatoes.

"One great example of the versatility of vegetables is the potato, the many varieties and methods of cooking them add variety and flavour to most dishes," he said.

"In this country, adults eat an average of two to three serves of vegetables a day, that's half the recommended five serves necessary for good health. Nutritionists recommend people increase their consumption of vegetables to include five different types of vegetables every day."

National Vegetarian Week educated Australians on the nutritional benefits of vegetables through a series of promotional activities, including the launch of a celebrity vegetarian cookbook which can be downloaded for free at www.vegetarianweek.com.au.

Former NSW IDO to tackle regional environmental issues

Alison Anderson, previously the NSW Vegetable Industry Development Officer, has been appointed as the Project Officer for the EMS (Environmental Management Systems) pathways project, in an effort to negotiate better, more practical environmental targets for growers.

The EMS pathways project, funded by the Department of Agriculture, Fisheries and Forestry, has been created to meet an identified need to develop a better understanding of the requirements of the Natural Resource Management (NRM) Boards and Catchment Management Authorities (CMA) regarding what they saw as achievable environmental targets for growers.

Helena Whitman, AUSVEG Environmental Manager said “Basically, the NRM Boards and CMA were setting targets that may or may not have been practical for growers to implement.”

The aim of this project is to identify those targets, benchmark them across production practices and then to negotiate appropriate targets,” she said.

Alison’s role will involve liaising with growers, NRM Boards and CMA throughout the length of the project.

Alison said that “During early discussions with CMA they have expressed a keen interest in being involved with the project. A key role for me will be to facilitate partnerships between the vegetable industry and regional NRM bodies. I am hoping that by the end of this project we will have improved representation of vegetable growers on regional NRM committees.

Five vegetable growing areas will be targeted for the project, where a network of growers and NRM personnel will be encouraged to work together to foster a better understanding of what is achievable, carry out an environmental self assessment of vegetable farms and through the EnviroVeg program identify and implement environmental changes where required.

The regional NRM bodies that are being targeted include Lachlan CMA (NSW), Port Phillip and Western Port CMA (Vic), Northern Territory NRM, South West Region (WA) and Hawkesbury Nepean CMA (NSW). Growers in those regions will be contacted by the Project Officer and invited to participate in the networks to be developed under this project.



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Australian Grown Campaign strikes chord with consumers



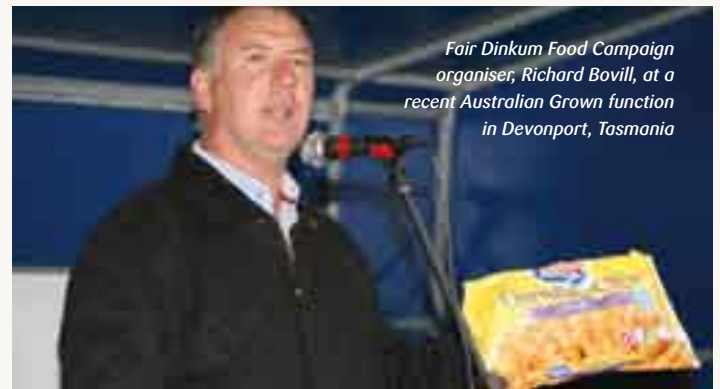
Research conducted on behalf of the Australian Grown Campaign in July 2007 has found Australian consumers strongly support locally supplied produce, a fact that has not been lost on retailers.

Before the official launch of the Australian Grown Campaign by the Hon Peter McGauran, Minister for Agriculture, Fisheries and Forestry, major retailers such as Coles and Woolworths had already registered to use the logo on their in-house product ranges as had processors such as Simplot. Since then, ALDI and businesses ranging from nurseries to growers have joined.

“Consumers very clearly want to buy Australian Grown and using the stylised kangaroo, Australia’s most trusted and recognised country of origin brand, to identify those products makes real sense,” says Australian Made, Australian Grown Chief Executive, Ian Harrison.

Roy Morgan Research interviewed more than 1000 Australian consumers, and the findings were 89 per cent of Australians believe it to be ‘important’ or ‘very important’ that the fresh food they buy is Australian, and 82 per cent say the same for processed foods.

The campaign has drawn strong support from growers, including many who were part of the Fair Dinkum Food Campaign in 2005, driving their tractors to Canberra to campaign for clearer labelling of Australian produce.



Fair Dinkum Food Campaign organiser, Richard Bovill, at a recent Australian Grown function in Devonport, Tasmania

“When we drove to Canberra, one of the things we wanted to achieve was to better identify where the produce came from. The Australian Made, Australian Grown logo now gives us a chance to do that,” said Richard Bovill, Tasmanian farmer and one of the key organisers of the Fair Dinkum Food Campaign.

He was supported by AUSVEG Chairman and grower, Michael Badcock, who agreed that the future for growers across Australia looks brighter thanks to the efforts of the farmers and the launch of a trusted food labelling scheme.

“I think this campaign has lifted the profile of the whole industry. Before it was very much a situation of them and us, now we’re seeing much more communication and negotiations between growers, processors and the retail sector,” said Michael Badcock.

To use the Australian Grown descriptor, products must meet the strict criteria determined by the Government’s working party last year and incorporated into the (revised) Australian Made, Australian Grown Code of Practice, which is available online at www.australiangrown.com.au.

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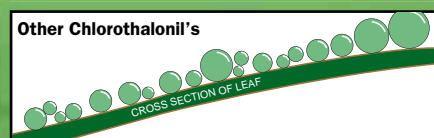
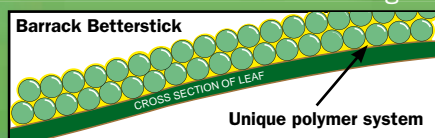
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Fresh Potato Marketing Development

AUSVEG Marketing Communications Executive Matt Wickham has prepared an action plan for the fresh potato industry and is now champing at the bit to get underway. He takes a moment to fill us in on what's planned.

Action Stations!

'It is recommended that the fresh potato industry in Australia implements marketing and promotion strategies to raise the profile of the fresh potato to drive awareness and consumption.'

(Australian Fresh Potato Industry Strategic Plan, 2006)

Turning knowledge and recommendations into action can sometimes be a long and difficult task. The fresh potato industry has undoubtedly been patient enough. The current collection of research provides a significant pool of knowledge and direction for future marketing and promotion endeavours. It provides insight into consumer thought and perceptions towards fresh potatoes. It supports marketing and promotion to provide a voice for the industry, lift the profile of the potato and act against increasing competition. The time to produce tangible resources that will represent a significant step forward in promoting Australian grown potatoes has come.

So what first? The first step is a website. This interactive communication tool is a great starting point. An educational website provides an incredibly useful medium that interacts with desired markets and communicates our instructive message. It provides 24 hour availability and is a crucial ingredient to the marketing/promotional mix strategy of any modern organisation. Furthermore, a website has the potential to be easily modified to assist with crucial purchase decisions, gain feedback and build a contact database.

The next step is a nutritional report highlighting the wonderful benefits of fresh potatoes. Nutrition analysis from an external

credible source does not only provide great learning material for the new website, but also creates a very useful positive association for the industry. This is an association that offers the fresh potato unquestionable authority and a marketable advantage.

Education material is the next step to build momentum. An educational kit will provide all the facts and figures; where spuds come from, how to buy, store and cook them, nutritional value, variety characteristics and many more informative details all available in an attractive presentation. Too long has the Industry been unable to satisfy requests for fresh potato information, something we need to and can now remedy.

Finally, with the assistance of AUSVEG, throw in an image and a brand to embody and represent the fresh potato and the foundations for future growth are beginning to take shape.

These steps are a great way to educate in regards to the health and nutritional benefits of potatoes and to make a significant impact on consumer perceptions, strong promotional activity is critical. It is important that promotion is effective; it is better to focus on two or three actions and doing them well, rather than stretching resources thin. As fresh potato endorsement gains momentum, other strategies and commitments can be implemented.


PT06022

The Bottom Line

- A fresh potato website, nutrition study and educational material are to be developed
- The material will fill a longstanding demand for potato information



Further information can be found at www.ausveg.com.au



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HAL seeking potato R&D proposals

Applications for National Potato Levy research and development projects starting 2008-09 will soon be open. The official industry call submission period is from 6 October to 19 November.

The National Potato Levy project call is for industry-specific R&D proposals involving R&D levies and/or voluntary contributions. Proposals are reviewed by the potato Industry Advisory Committees (IAC) and therefore must align with the industry strategic plan and annual priorities.

The IAC objective is to enhance profitability and sustainability, increase the value of category and to deliver quality potato products for the Australian potato industry by 2015. The strategic imperatives identified requiring attention are;

- Improve consumer awareness for Australian fresh/processed potatoes
- Improve industry competitiveness
- Improve industry communication and information systems
- Improve leadership and management capability

Horticulture Australia (HAL) invests almost \$80 million annually in projects in partnership with the horticultural sector. Projects are funded through R&D levies, marketing levies and voluntary contributions. All HAL's R&D activities are supported by the Federal Government through the provision of matched funding. These projects cover R&D and marketing activities.

HAL has an online application system that replaces previous HTML and Excel applications which means HTML and Excel applications will no longer be accepted.

HAL's online application system is available for the preparation of proposals, which allows researchers to work on their proposals outside the official call periods. However, proposal submissions to this project call will be restricted to the official dates.

Application types

When submitting a project to HAL via its online application system, there are five application types to choose from:

- Conference/Study Tour
- Industry Development Project
- Marketing
- Marketing Consumer Research
- Research and Development.

Funding for marketing projects cannot be sought from Federal Government matched dollars. For these projects seek funding from "Other Sources not managed by HAL", "Marketing Levy Unmatchable" and "VC unmatchable".

For more information visit the HAL website at www.horticulture.com.au



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Breeding trials show promise despite drought

A project in Victoria aimed at identifying new potato varieties for the future fresh market in Australia will continue for at least another season following promising trial results achieved this year under difficult conditions. Graham Gosper gets the lowdown.

Keith Blackmore, the leader of project team, said drought and severe water shortages reduced yields and tuber numbers in the most recent evaluation trials and as a result no new varieties were recommended for release this year. However he said 10 of the varieties examined, including one standout variety, showed sufficient promise to warrant further evaluation in new trials expected to begin in November 2007. An additional 10 varieties selected from the National Potato Breeding Program based at Toolangi in Victoria would also be assessed in the upcoming trials.

New varieties developed under the national breeding program have been trialled each year since the project began in 2003.

Keith, who is the manager of The Victorian Certified Seed Potato Authority (ViCSPA), was appointed to lead the project after the organisation accepted responsibility for assessing the new varieties and recommending which ones should be released.

The 2006/7 trial involved 24 cultivars grown in a randomised block within a commercial crop of Coliban fresh market potatoes on a farm near Thorpdale, about 150 kilometres from Toolangi. It included six new lines of G3 selections from the national breeding program, 11 lines carried over from the previous trial, four varieties from project sponsors and Sebago and Coliban lines used as standard varieties for comparison.

Keith said though the dry conditions limited crop emergence and yield many varieties out-yielded the standard varieties and performed well under stress. "One of the new G3 selections was the standout variety and will be among those which will be further assessed," he said.

"It was planted in four bulk rows at the side of the trial as well as in trial plots. Though it was not among the best trial performers in the bulk rows it emerged and yielded well. The tubers were even and attractive with bright skin and they boiled well," Keith said.

"Another of the new G3 selections produced the highest yields and would also be among varieties to undergo further assessment. It also boiled well but was not as bright in the skin as the standout variety," he said.

Images clockwise from right: Des Jennings & Pauline McPherson planting the trial, Daniel Grayling & Pauline McPherson from ViCSPA grading the trial, Keith Blackmore, leader of the project team, A very attractive potato with good boiling qualities



Keith said the success of the 2006/7 trials despite the drought reflects the determination of the research team and the strong ongoing support for the project from growers and sponsors. "Laura Bowles of Ag-Challenge Consulting played a key role in the research and assessment of the new varieties," he said.

The Chairman of the Victorian Potato Growers Association, Des Jennings, one of the instigators the evaluation project, is among Thorpdale district growers who have been actively involved with the trials from the outset.

Des is a seed grower and has cultivated seed on his family farm for each of the trials. Growers also support the project by making farms available for trials and assisting with plantings, assessment of the cultivars at harvest and with the bagging up of each plot and grading measurements following the harvest.

Des said the project has provided a unique opportunity for growers to see the performance of new varieties first hand and to have real input into the assessment process. He said the barbecue lunches held at each harvest were very successful.

"They gave growers the chance to compare the trial results with their own on-farm results," he said.

Keith is hoping next season will provide better conditions for the new round of trials and confident they will result in the release of more new varieties for the fresh potato market. The project has already resulted in four varieties from the 2005/6 trials going to tender and being taken up by commercial interests.

Keith said changes announced under the recent industry review of the potato breeding program have given the project and its outcomes new significance. Under the changes future breeding will only be carried out by the Department of Primary Industries Victoria under agreement and sponsorship for individual

companies and industry groups. The companies/groups will be responsible for their own testing regimes. That means this evaluation project may provide one of the last opportunities for the industry interests to tender for varieties that are trialed for them.

Keith said the research team will be conscious of that fact when they begin the next round of trials. "We are all keen to ensure that the potential established by generations of plant breeding under the National Breeding Program at Toolangi is fully realised through the release of more varieties," he said.

The Victorian Fresh Potato Evaluation project is funded by Horticulture Australia and various sponsors. Elders Ltd and Durkin Produce Australia sponsored the 2006/7 trials.

PT06024

The Bottom Line

- No new potato varieties have been recommended for the fresh market this year
- Despite drought and water shortages, 10 varieties have shown encouraging results and will undergo further evaluation beginning November 2007



Further information can be found at www.ausveg.com.au



University of Tasmania Ph.D student Susan Lambert in the field sampling leaves for virus testing

Managing the hidden threat of PVS and PVX in seed potato crops

Generally considered benign for their lack of obvious symptoms in the field, Potato Virus S (PVS) and Potato Virus X (PVX) can still cause significant damage to crop yields. The good news, as Christine Priestly discovers, is there are ways growers can manage infection to reduce the impact.

Dr Frank Hay, Research Leader Vegetable Group, Tasmanian Institute of Agricultural Research (TIAR), University of Tasmania, said that recent research for Horticulture Australia (HAL) has confirmed the presence of both PVS and PVX in seed potato schemes in Tasmania and on the mainland.

“While the seed potato certification scheme has been quite successful at maintaining very harmful viruses at low levels, including Potato Leaf Roll Virus and Tomato Spotted Wilt Virus, which can cause up to 30 per cent yield loss, in recent years some of the less damaging viruses such as PVS and PVX have crept into the seed scheme both on the mainland and in Tasmania,” Frank said.

Although both viruses generally cause less than ten per cent yield loss when there’s complete infection in the field, Frank said their presence may actually be preventing growers from reaching the yield potential that they require.

“Previous work we’ve done with HAL projects suggests that in the variety Russet Burbank, for example, you can get about a five tonne per hectare penalty when there’s 100 per cent infection in the field,” Frank said.

“In this day and age when growers are making their profits off the last little bit of production that’s quite significant,” he said.

Frank explained that there are ways growers can help limit the spread of viruses. These include:

- Strict adherence to the National Standard for Certification of Seed Potato,
- Isolating early generation material from later generations and ware crops,
- Improving hygiene (for example, by disinfecting equipment),
- Reducing the potential for mechanical transmission, and
- Implementing regular testing and quarantining procedures.

“Growers should isolate early generation crops from later generation crops both physically in the field and during grading and cutting,” Frank said.

He also recommended that growers don’t grade their seed in the same facilities as higher generation material.

“Alternatively growers should have very strict wash-down procedures,” he said.

During cutting operations, growers can also improve hygiene by disinfecting equipment.

“Both PVS and PVX have the potential to remain infectious on surfaces for several days,” he said.

“Growers will cut their seeds so they get more than one seed piece from the tuber, to bulk them up... During this process these viruses can be transmitted from infected to healthy tubers,” Frank said.

Sprouted tubers are particularly prone to virus transfer as sprouts contain high concentrations of virus and are easily damaged during handling, allowing entry points for virus.

Frank said that cutting machinery should therefore be disinfested regularly, between generations or different crops.

Hygiene can also be improved by using easy-to-clean plastic bins and by developing in-field wash down procedures for machinery.

“Both viruses are mechanically transmitted, that is, if you get sap from an infected plant and rub it on a healthy plant you’ll get transfer of the virus through wounds,” Frank said.

He added that growers can reduce mechanical transmission by restricting the movement of machinery such as tractors and irrigators through the crops, for example by aerial spraying or by providing clear laneways for irrigators to move.

Frank advised that control of weeds is also important. Nightshade and fathen for example can both harbour PVS and PVX.

Frank said that some strains of PVS are also transmitted by certain types of aphids, such as Green Peach Aphid. He added that further research in this area is planned to assess just how important aphid transmission is in spreading the virus between crops in Tasmania.

Frank said that another key factor in managing PVS and PVX is through routine laboratory testing which helps to identify



*University of Tasmania Ph.D student
Susan Lambert conducting a virus test*

infections early so that highly infected crops can be removed from the seed scheme.

“One of the difficulties of managing PVS and PVX is that they don’t produce much in the way of symptoms and can be easily missed during the certification procedure,” Frank said.

“Some of our research also suggests that we can’t detect later-in-season infections,” he said.

Testing is currently conducted mid-season before row-closure, while it’s still possible to walk through the crop.

“At that stage you’re only picking up any infections which occurred the previous season or earlier in the current season,” Frank said.

Sampling the crops later on may make the problem worse, however.

“If somebody walks through the crop and causes a lot of damage as they walk, they can potentially be spreading the viruses in the sap,” Frank said.

Frank added that many overseas countries now use laboratory testing on leaf samples collected in the middle of the season as well as ‘grow-out’ tuber testing for viruses, which tends to pick up late-season infections.

“But it’s quite an expensive process and it all adds to the cost of producing the seed potato, and unfortunately that then gets passed on to the grower,” he said.

“It’s all a matter of the industry deciding whether they consider these viruses to be a significant enough problem that they would go to the cost of increased testing.”

PT05011

The Bottom Line

- PVS and PVX has been found in seed potato crops in Tasmania
- Several methods can be used to limit the virus spread
- Crop yields can be affected by the viruses



Further information can be found at www.ausveg.com.au

European powdery scab workshop

a fondue of knowledge and new ideas

Australian researchers recently attended an international workshop on powdery scab. Dr Nigel Crump, one of the attendees, gives us some of the highlights.

The European powdery scab workshop was held in Langnau in Emmental, Switzerland on the 29th-31st August 2007. The three-day workshop was attended by 24 researchers from around the world including France, Norway, Germany, Denmark, Latvia, New Zealand, Australia and Switzerland. The Australian attendees included Tony Slater (DPI-Vic), Robin Harding (SARDI), Leigh Sparrow (TIAR), Iain Kirkwood (TIAR) and Nigel Crump (DPI-Vic). The workshop was an excellent opportunity for Australian researchers to meet with other international experts and exchange research results and ideas.

The workshop covered many areas of powdery scab research including:-

- Powdery scab resistance screening and development,
- Detection and quantification of the pathogen which causes powdery scab (*Spongospora subterranean*) on tubers and in soil,
- The Potato Mop Top Virus (PMTV)¹,
- The importance of powdery scab infested seed in the development of disease,
- Role of animal manures in spreading powdery scab,
- Powdery scab disease recognition,
- Strategies for disease management.

While the workshop did not deliver a silver bullet to powdery scab, there were many discussions on new knowledge of this disease which, ultimately, will lead to the development of disease management strategies. The workshop topics were relevant to Australian potato production. Some of the most relevant topics are summarised below.

The CEO of Swisssem, Mr Andreas Rügger, gave an overview of Swiss seed production. Swisssem is the seed growers' association/certification body in Switzerland. There are approximately 700 seed potato growers each growing, on average, around two Ha of



Tubers with powdery scab in Switzerland

seed. The allowable powdery scab tolerance for seed is no more than one per cent of tubers with >5 pustules, for common scab more than that five per cent with one third of surface coverage.

Ueli Merz from ETHZ (Swiss Federal Institute of Technology) in Zurich, presented the outcomes of a European collaboration investigating the consistency of potato cultivars tolerance/susceptibility to powdery scab across various locations in Europe. Of the ten potato cultivars evaluated, the New Zealand bred cultivar Gladiator was the most resistant. From the results of this work, potato breeders can select standard reference potato cultivars to compare against new breeding lines in powdery scab resistance screening trials.

This European collaboration has established a standard method to measure powdery scab incidence and severity. If everyone working on powdery scab is using the same scoring and reference varieties then we all can communicate more effectively. Australian researchers have been using the powdery scab disease scoring system as used by the European researchers, since the start of the Processed Potato Research and Development program. The standard scoring of powdery scab allows researchers to see if potato cultivars tolerance/susceptibility is consistent across countries. For example, does Russet Burbank express moderate resistance in the UK, Switzerland and France? If a potato cultivar has inconsistent tolerance/susceptibility to powdery scab across different countries it could indicate that there are different strains of the pathogen. Currently, it is not known if different strains of *Spongospora* occur around the world.

Dr Stuart Wale from the Scottish Agricultural College (SAC) highlighted the importance of volunteer potato plants (also known as ground keepers) in the build-up of the powdery scab pathogen in field soil. Controlling volunteer potato plants between crops could reduce the build up of the pathogen in soil.

¹ PMTV is transmitted by the pathogen *Spongospora subterranea* which cause powdery scab of potato. This virus has not been reported in Australia.

in Switzerland

Stuart also discussed the recent registration of the fungicide Shirlan™ (fluazinam) for the control of powdery scab in the UK. Shirlan was registered for late blight (*Phytophthora infestans*) in the UK but not for powdery scab. For the new registration, Shirlan can only be used for powdery scab control or late blight; that is if Shirlan is applied at planting for powdery scab, then it can not be used in the management of late blight.

Leigh Sparrow and Dr Nigel Crump both presented outcomes from the Australian PPR&D program. Leigh presented the research teams observations on cropping history in Australia while Nigel presented efficacy information on a range of soil amendments including Shirlan (which is soon to be registered in Australia), organic soil amendments, and the results of the disease resistance screening trials conducted in Australia. The Australian research was well received by the international audience.

The workshop involved a field trip to a cultivar evaluation trial looking at powdery scab resistance. The cultivars had various levels of powdery scab and also PMTV (see photo). While in the field, Thomas Oberhänsil from Bioreba Switzerland and Ueli Merz demonstrated the new rapid diagnostic test “AgriStrip” for the correct identification of powdery scab on roots and tubers. The test takes about 10 minutes and can be done in the field. It involves taking a small piece of tuber with scab, grind in a plastic bag with buffer, dip a test strip and wait for a band to appear on the strip. The test prevents confusion with powdery scab and common scab.

In all there was a lot of information presented at the powdery scab workshop, but also importantly there was a lot of discussion between the various research groups on experiences, new ideas and areas for international collaboration. The European powdery scab workshop was a great opportunity and will result in enhance outcomes of the current Australian research program both immediately and in the future.

PT07005

The Bottom Line

- Researchers attended the European Powdery Scab Workshop held in Switzerland
- New Zealand cultivar Gladiator was highlighted for its resistance
- Controlling volunteer potato plants and a new fungicide in the UK have been highlighted as possible control options
- Topics such as disease resistance, detection, PMTV and strategies for management were discussed



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Looking at potatoes in the field in Switzerland, Richard Falloon and Ueli Merz kneeling



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Horticultural apprenticeships given a boost

The Federal Government has announced an incentive package designed to encourage trainees and workers back into the horticultural and agricultural industries.

Previously, apprenticeships in agricultural and horticultural occupations were ineligible for these initiatives. Only trade occupations identified as being in national skills shortage were eligible.

Eligible apprenticeships now include:

- Farm management
- Crop production
- Landscaping
- Irrigation
- Plant and tree cultivation

It applies to apprentices undertaking any Certificate level II, III or IV qualification in agriculture in rural and regional areas of Australia

On offer:

■ An \$800 tool kit

An agricultural or horticultural apprentice will now be able to access the *Tools For Your Trade* initiative, which provides a tool kit valued up to \$800 to apprentices in their first year of training.

■ Up to \$1,000 to help with course fees

Apprentices will now also be able to access the \$1,000 Apprenticeship Training (Fee) Voucher. This voucher enables the apprentice or their employer to seek reimbursement of course fees of up to \$500 per year for each of the first and second years of an eligible Australian apprenticeship.

Further information:

For further information about *Tools For Your Trade* and the Apprenticeship Training (Fee) Voucher, contact your local Australian Apprenticeships Centre. Information is also available at www.australianapprenticeships.gov.au or by phoning the Australian Apprenticeships referral line on 13 38 73.



Nineteen year old Peter Serra from the Atherton Tablelands in Far North Queensland recently completed his apprenticeship in horticulture under the Australian Apprenticeships System.

Peter has been working with his parents, Anne and Joe Serra, and his four other brothers on their family farm at Tolga where they are major growers of Kipfler, Sebago, Pink Eye, Nicola and Purple Congo potatoes.

The Serra family has been growing potatoes for 40 years and according to older brother Mark, Peter's knowledge and skills have been significantly boosted during his apprenticeship period. Mark says that by working on the farm and undergoing intensive training designed to suit the farm's requirements Peter has excelled beyond all expectations and has become an extremely productive member of the team in a short period of time.

Cairns based TAFE Horticulture Teacher, Vito Musumeci, who worked with the Serra family to design and implement Peter's training over the two year period says that "Peter's superior work ethic and intelligent application of concepts and principles marks him out as a star pupil".

Mark said that the combination of generous financial incentives from the Australian Government and State funding assistance for the training component made it easier to take Peter on under this national qualification system.

Peter says that he now has a clear career path and has his eyes set on obtaining the next level of qualification. This will take him to the supervisor level before aiming for a Diploma in Rural Business Management.

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Surviving the black dog: Depression in rural Australia

Each year one million Australians suffer at the hands of the ‘black dog’ of depression. More than just a low mood or feeling stressed, depression is a complex illness, which can take its toll on both the body and mind. With rural Australia experiencing tough times, the risks associated with depression are very real. However, with the right treatment and support, recovery from depression is possible.

In 2005, a report published by the Centre for Rural Mental Health in Victoria highlighted the fact that farmers and farming families were at particular risk of stress, and mental health difficulties such as depression. The report identified isolation, unpredictable weather events, such as floods or droughts, and financial pressures as common factors contributing to the onset of depression, and indicated that the stigma of mental illness and access to care were factors influencing treatment.

Last year, beyondblue, the national depression initiative, rolled out a television and print campaign specifically targeted at increasing awareness of depression in rural communities. The campaign, which included a series of awareness posters and television advertisements, was specifically aimed at educating men to recognise the symptoms of depression, and to seek appropriate help.

“Our primary target audience was men, because men are found to be much less likely to seek help,” said Dr Nicole Highet, psychologist and beyondblue’s Deputy CEO.

“That’s probably true of most health problems, but particularly in the case of mental health problems, where there may not be visual clues indicating that something is wrong. So we really needed to focus on educating them to recognise the symptoms, and get them to talk to someone about it.”

Nicole says that rural communities are at particular risk for depression and anxiety for a variety of reasons.

“Although rates of depression in rural communities aren’t necessarily higher than in metropolitan areas, the likelihood of people seeking help is much lower,” she said.

“This can be for a range of reasons. Firstly, there can be less understanding and more stigma, and people often feel ashamed or embarrassed about acknowledging that they might be experiencing depression – it might be seen as a weakness, as opposed to an illness.

“Isolation is also a factor. And particularly in times like these, when there has been drought and conditions and circumstances beyond people’s control, and the fact that their welfare and livelihood rely on that, can certainly create high levels of stress for farmers and families. Over time, this can increase the level of distress and higher levels of depression and anxiety.”

Nicole says that all too often the lack of services within rural towns can make it difficult for farmers and their families to obtain the specialised care required to make a full recovery.

In New South Wales, the Rural Mental Health Network was established to specifically address the issue of mental health and wellbeing in farming communities.

CONTINUED OVER PAGE ►

"I didn't want people to think I was weak.
I'm a man
and men don't get depression."

"I had no energy.
I didn't give a stuff.
I didn't know it was depression."

"When you're growing up you're told you have to **be the strong one.**
But depression doesn't care."

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 **beyondblue**
the national depression initiative
www.beyondblue.org.au

CONTINUED FROM PAGE 27 ►

Coordinated by the NSW Farmers' Association (NSWFA), one of the primary aims of the network is to increase awareness amongst rural communities of the services available to them, as well as making sure that those services are coordinated in such a way to ensure the best possible outcomes for those experiencing depression and mental health problems.

Alan Brown is the Vice President of the NSWFA and the Chair of their Rural Affairs Committee. He explains that there was a need to establish a coordinated network, as many members were experiencing difficulties.

"When we looked at the whole mental health service provision around NSW, we found that there were a number of well-meaning groups, but on the whole, things were quite disjointed. Often one group didn't know what another group was doing, so we ended up with duplicated functions in one town, and none in another," Alan said.

Today, twenty-three organisations providing services are coordinated through the Mental Health Network, and a number of depression and suicide prevention initiatives are being implemented across the state.

"One of our key focuses has been on Mental Health First Aid. We received \$100,000 from the NSW Government to roll out Mental Health First Aid training. The NSWFA has coordinated

50 training courses across the state, and we are encouraging other groups to get involved."

The course teaches participants to recognise the symptoms, causes and treatments for the common mental health problems, such as depression, and addresses the possible crisis situations arising from these mental health problems and steps to help.

"Once people complete the course, they become much more aware of what to look for, the warning signs. As a result, I can't help noticing the people that I deal with are much more open about what they're feeling and what's happening to them. And I think that's a really positive development."

Alan says one thing the network aims to achieve is the de-stigmatisation of mental illness, and to encourage people to acknowledge that they may be having problems.

"Mental issues are as fixable as any other health issue - there are so many things that can be done to improve people's outcomes, as long as you can get them to realise that they have a problem.

Nicole agrees.

"Depression is very common. One in six men will experience depression in their lifetime, so everyone is likely to know or come into contact with someone with depression at some stage. The trick is knowing a little more about it and being able to identify it and steer the person in the right direction," she said.

Depression indicators:

- Persistent feelings of sadness
- Feelings of failure, worthlessness or guilt
- Feeling overwhelmed
- Loss of interest or pleasure in activities
- Withdrawal from family or friends
- Frequent anger or frustration
- Lack of confidence
- Poor concentration or indecisiveness
- Tiredness
- Sleeping problems
- Feeling sick and rundown
- Changes in appetite
- Overuse or reliance on alcohol, prescribed or illicit drugs

Source: www.beyondblue.org.au



Help is available:

www.beyondblue.org.au

Information on depression and where to get help

Beyondblue info line:	1300 22 4636
Centrelink Drought Assistance Line:	13 23 16
Centrelink Farmer Assistance Line:	1800 050 585
Lifeline:	13 11 14
Rural and Remote Mental Health:	13 14 65



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INNOVATION IN IRRIGATION

Data paints clearer potato picture

Lack of accurate information on the vegetable industry has been a hurdle not easily overcome. With that data now available, there's some surprises for industry. AUSVEG's Economic Policy and Research Manager Ian James takes us through the results.

In the last edition of *Potatoes Australia* we alluded to the problems created for the industry by poor data. We also emphasised the measures being undertaken to correct the situation. AUSVEG has worked hard and spent significant amounts of money to improve the accuracy of the data collected on the industry. Some growers reserve a degree of cynicism as to the accuracy of this data. Data collected is only as good as the information supplied but any improvement significantly advances the industry's cause. The data collected is fed into economic models which seek to assess the economic impact of an industry at a regional, state and national level. In addition it forms the basis of decision making on the industry. Raising the profile of the industry, emphasising its importance in the economy and highlighting the difficulties facing growers are the key objectives of the effort to improve the data on the industry.

Since the last edition a range of new and more accurate data has been released. We will explore these in more detail in subsequent editions of *Potatoes Australia*. The data released relates to five areas production, establishments, water use, international trade and financial performance.

Production

The latest data shows that in 2006 the vegetable industry was valued at \$2.75 billion more than 30 per cent higher than previous estimates. The vegetable industry is Australia's fourth largest agricultural industry behind beef, wheat and dairy. The industry is 40 per cent bigger than the wool and lamb industries, more than double the size of the grape and poultry industries, almost triple the size of the sugar and cotton industries and swamps all other horticulture industries combined.

Turning specifically to potatoes in 2006, potatoes were by far the largest vegetable crop by both area planted and tonnage produced. The area planted to potatoes totalled 35,485 hectares and production was 1,255,463 tonnes. Potato yields have been trending upwards in this century, with the average yield per hectare in 2006 across Australia at 35.4 tonnes per hectare. The value of the potato crop was estimated at \$465 million, 17.4 per cent of the total vegetable crop. South Australia has become increasingly important in production and as table 1 shows, was the largest producing state in 2006.

Establishments

Previous estimates suggested that there were 4,915 farms producing vegetables for consumption (of which 4,090 farms derived the bulk of their income from vegetables) and 592 farms producing vegetables for seed (with some doing both). The latest numbers for 2006 show 6,732, farms producing vegetables for consumption (of which an estimated 5,700 derived the bulk of their income from vegetables) and 819 farms producing vegetables for seed.

Water Use

Of the 135,000 hectares under vegetable cultivation in 2006, 90 per cent was irrigated with an application rate of 3.7 megalitres per hectare and of the 7000 hectares planted to vegetable seed 71 per cent was irrigated using an application rate of 3.0 megalitres per hectare. A breakdown by vegetable crop is not yet available.

International Trade

This data is disturbing. Australia ran a negative balance on trade in potatoes in 2006/07 for the first time since 1997/98. Exports were down 16 per cent with seed potato exports falling 42 per cent to \$5 million and fresh potato exports down 26 per cent to \$10.8 million. In contrast imports were up an alarming 58 per cent with frozen potato imports up 72 per cent. The implications for potato growers are significant. Export markets for seed potatoes have been important and offer the potential for growth. However Australian potato growers face significant trade and non-trade barriers to their export. The surge in frozen potato exports sends a strong message on the impact of changes to sourcing policies of Australia's vegetable processors.

Financial Performance

Farm cash income for vegetable growers averaged \$152,960 in 2006 and farm business profit (after allowing for depreciation, changes in stocks and unpaid family labour) was \$66,410. Despite these positive results an estimated 24 per cent of growers reported negative cash incomes and around half reported a farm business loss. As table 2 shows, results were variable across the country with Victorian vegetable growers the most profitable and Tasmanian vegetable growers the least. Northern Territory growers recorded the best return on equity. Table 3 shows vegetable growers were more efficient in extracting better rates of return on equity than other agricultural industries. However, there was also a marked division in the industry. The top 25 per cent of vegetable farms had average farm cash income of \$471,950, made an average business profit of 365,920 and had a healthy rate of return on capital of over 20 per cent. In contrast the bottom 25 per cent of farms had an average negative cash income of 52,450, an average negative business profit of \$117,590 and a negative return on capital of 10 per cent.

These results send significant messages. In brief:

- Vegetable growers are extremely good at what they do, but their problems lie beyond the farm gate.
- As Tasmania is a major producer for the processing sector clearly growers producing for that sector are not receiving adequate returns.
- Some vegetable growers are under enormous stress with the prices they receive for their product insufficient to enable them to run profitable businesses.

These new data bases are enabling the industry to understand where it is. They also send strong messages to growers. In addition, governments will note how significant the vegetable is and the lessons from the trade pressures and the financial plight of large sections of the vegetable industry should not be lost.

Table 1
Value of potatoes by State - 2005/06

State	Value \$m
New South Wales	47.0
Victoria	106.8
Queensland	48.7
South Australia	146.6
Western Australia	43.8
Tasmania	72.2
Northern Territory	0.0
Total Australia	465.1

Source: Australian Bureau of Statistics, Cat. No. 75020

Table 2
Vegetable growers selected financial performance by State - 2005/06 (average per farm)

State	Receipts \$	Costs \$	Income \$	Business Profit \$	Rate of Return %
NSW	499,030	359,810	139,210	53,760	3.6
VIC	878,270	641,420	236,850	137,740	6.1
QLD	843,280	681,260	162,020	71,140	5.1
SA	512,630	369,910	115,720	44,670	5.2
WA	495,180	280,880	214,300	130,970	4.8
TAS	289,970	284,620	5,350	-72,930	-2.1
NT	503,330	342,220	161,110	105,570	15.0
Australia	638,170	485,210	152,960	66,410	4.3

Source: Australian Bureau of Agricultural and Resource Economics

Table 3
Rate of return on equity - 2005/06

Farm Enterprise	Rate of return excluding capital appreciation %	Rate of return including capital appreciation %
Vegetables	4.3	13.2
Wheat & other crops	3.2	5.5
Dairy	2.3	7.0
Mixed livestock/crops	1.0	5.4
Beef	1.0	10.8
Sheep/Beef	0.5	7.6
Sheep	0.4	4.8

Source: Australian Bureau of Agricultural and Resource Economics



Potatoes take a bow at Restaurant 07

The recently held Restaurant 07 event in Sydney proved an ideal opportunity to promote potatoes to restaurant industry professionals, many of whom weren't aware of the large range of potato varieties available. Toni Davies reports.

Potatoes took centre stage in AUSVEG's display at Restaurant 07, a trade show focusing on the restaurant industry, providing a great opportunity to highlight to restaurateurs and chefs the versatility of the locally grown spud.

Held at the Royal Hall of Industries, Restaurant 07 showcased the best in regional and seasonal produce, innovative new products and services. AUSVEG participated in the event and delivered the Australian potato industry message to an audience of over 4,500 industry professionals and suppliers.

Potatoes were a focal point of the display with over 1,000 Australian potato variety leaflets being distributed over two days. Visitors were surprised with the large range of potato varieties available and welcomed suggestions on cooking methods to suit the various varieties.

Restaurant 07 proved to be a fantastic venue to promote Aussie spuds, both the varieties and nutritional value. In addition to chefs and restaurant owners, staff and students from many TAFE and catering institutions also attended the event, enabling the AUSVEG staff to discuss potatoes, their specific traits and distribute posters and handouts.

Over 120 leading restaurant suppliers supported Restaurant 07 which also featured a Culinary Skills Theatre, Restaurant Business Talks and The Hot Seat – an informal chat session giving a personal perspective on leading industry personalities.

As industry partners, AUSVEG hosted a session with 'Vegetables as Centre of the Plate' in the Culinary Skills Theatre. Chef, Martin Boetz from renowned Sydney restaurant Longrain, demonstrated the versatility of vegetables by preparing potato gnocchi with vegetable curry and relish. The session hosted by Georgina Damm on behalf of AUSVEG attracted much interest as did the colourful display of fresh vegetables on display at the AUSVEG stand.

Restaurant 08 will be back again next year, but this time not just in Sydney, but Melbourne too. AUSVEG hopes to be there again presenting the great range of Australian fresh potatoes directly to the decision makers within the restaurant and catering industries.

Restaurant 08 will be held in Melbourne on May 26-27 2008 at the Melbourne Exhibition Centre and in Sydney on August 11-12 2008 at the Royal Hall of Industries.

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Harvesting equipment on show for growers

New innovations in handling and harvesting technology have been demonstrated to Australian and New Zealand growers, including increased capacity in harvesters and a new trailed boom sprayer from Amazone incorporating a completely new design.

The machinery was demonstrated as part of a recent VIP tour to the United States and Europe conducted by farm machinery importer Landpower. The tour involved the growers touring facilities in Idaho, Belgium, and Germany, giving them an insight into how the equipment is constructed as well as seeing demonstrations of new equipment from Spudnik, Grimme, Amazone and Claas.

Craig Hopkins, Grimme specialist for Landpower Australia, says highlights of the tour included seeing some of the very latest potato handling and harvesting equipment being manufactured and operated in its country of origin.

Among the demonstrations seen by growers, was the Spudnik MDL6140 four-row windrower lifting red potatoes for the fresh market and the crop then harvested with a Spudnik MDL6400 four-row harvester which features a new holding tank that means

the harvester does not need to stop when the truck is full, also had quicker turn around capability at row ends, the ability to dig through low spots in wet conditions and dig up steep hills without the truck beside the harvester.

At a Potato Europe Field Day in Belgium the group saw another working demonstration of equipment including a Grimme Varitron 270 self-propelled two-row harvester with a new multi-sep separator and a seven tonne bunker. Also seen was the range of storage equipment, including the RH2460 receiving hopper with turbo cleaner separator, TC8016 twin conveyor and SL8016 piler elevator.

“The Varitron was doing a very good job at removing the trash and breaking up and removing a lot of the clods that were in the field,” Craig said. The Varitron is the latest self-propelled harvester from Grimme and is based on the popular GT170 trailed harvester.

During the Grimme factory tour in Damme Germany, the group saw a large range of machines including the Grimme SE75-55 single row harvester which is the newest harvester from the SE range widely used around the world and has a wider intake of 85cm, axle leveling, pre-cleaners in the pick off table and a 5.8 tonne bunker.

At the Amazone factory in Hasbergen Gaste, Germany, the group saw a demonstration of the new trailed boom sprayer UX5200 working in the field.



“The UX5200 is a totally new model with a new type boom,” Craig said.

“If you have a fertilizer that is new and would like to get the correct spread rate for your Amazone spreader then you can send in your sample and they will test it and let you know what settings you need to make on your spreader for good spread accuracy.” The settings are then logged onto the internet and available for viewing at www.amazone.de.

When touring the Claas headquarters in Harswinkel, Germany, the group took advantage of the chance to test drive some of the vehicles on the company’s test track.

“We then got the opportunity to visit Loermann’s farm which is the home of the specially designed Claas test track where we got to test drive the new Axion and Xerion tractors, Lexion combine harvester and the Scorpion telehandler.”

Craig says “the trip was a great success, with a highlight being the chance to see the very latest in machinery technology being built and demonstrated. All the growers involved returned full of ideas for the future.”

Claas Axion tractor on the Claas test track



Potato Research Scholarships

Applications are invited for research scholarships for full time study towards a research doctorate.

The University of Tasmania is the coordinating agency for the Processed Potato Research and Development Project. This multi agency research program is to investigating aspects of the biology, and control of soilborne pathogens and virus of potatoes.

These scholarships offer opportunities to work in collaboration with the Swiss Federal Institute of Technology (ETH, Zurich), Lincoln University (New Zealand), Department of Primary Industry, Victoria, Agriculture and Agri-Food Canada (London, Ontario).

Applications are invited for a wide range of topics including:

- Population genetics and phylogeny of *Spongospora subterranea*
- Mechanisms and activity of auxin induced resistance to common scab.
- Environmental factors and the effect on gene silencing and virus resistance.
- Plant promoting bacteria in potato production.

- Verticillium in South Eastern Australian potato production.
- Phenotyping of resistance to common scab of potatoes to develop molecular markers.

These scholarships provide a non-taxable stipend of \$19,616 p.a. for Australian based programs. An overseas allowance will be paid for programs involving extended periods overseas.

Applicants must hold:

- A minimum of an upper second class degree or equivalent.
- Australian or New Zealand citizenship or permanent residency.

Applications close 31 October 2007.

For further information –
[www.research.utas.edu.au/
gr/scholarships/
domestic_scholarships.htm](http://www.research.utas.edu.au/gr/scholarships/domestic_scholarships.htm)

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CEO's message

Collaboration is not only a buzz word but a really good idea. Working together across the industry gives us strength in knowledge and numbers, to push the issues that matter most to our industry.

In a recent demonstration of 'working together' AUSVEG and the Potato Processors Association of Australia (PPAA) signed a Memorandum of Understanding in September.

The ceremony was conducted by AUSVEG Chair, Michael Badcock and PPAA President, Allan Smith in front of the AUSVEG Board.

As well as developing formal relationships such as the MOU with PPAA, AUSVEG continues to work on its strategic plan to make sure the organisation is in a position to meet industry demands.

The AUSVEG Board and Strategic Review Taskforce (consisting of the representatives from state member organisations) met in late September to discuss the final 'green paper'. This is a document produced by the taskforce over the last nine months to provide recommendations to the AUSVEG Board on future strategy and structure for the organisation.

It is envisaged that this paper will be refined and a final paper produced that will then guide the final development of the AUSVEG constitution to be voted on by members later this year.

Also in September, both the fresh and processed potato industry held Industry Advisory Committee (IAC) meetings to determine the areas that the National Potato Levy needs to be invested in. These meetings were highly successful and issues debated vigorously. The members of these groups must once again be congratulated for their inputs and efforts.

Relationship building with other industries is also important to ensure vegetables stay centre plate. AUSVEG Chair co-launched

Vegetarian Week in Sydney, hosted by celebrity Jackie O. AUSVEG was a co-sponsor of the event to promote the consumption of vegetables and potatoes as a key part of a healthy vegetarian diet. We look forward to working with other industries on similar type of events.

AUSVEG Director, David Anderson travelled to Canada to accept the 2007 Montreal Protocol Stratospheric Ozone Protection Award on behalf of the Australian Vegetable Industry.

The award, presented by the USA Environmental Protection Agency, recognises the significant reduction in use of Methyl Bromide by Australia's vegetable industry.

As we still wait for the election to be called, AUSVEG has confirmed its election platform which includes issues such as support for promoting healthy eating initiatives, water certainty, workforce labour, and consumer labeling. For more information visit www.ausveg.com.au.

And finally as I finish writing this, I am heading to a drought workshop with the Federal Department of Agriculture, Fisheries and Forestry to look at ways of working with growers 'at the coal face' in managing and addressing their risk with the water crisis in the Murray-Darling Basin.



John Roach

Chief Executive Officer
AUSVEG

Representing Australian potato and vegetable growers



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PPR&D Update

The future focus for processing potato research

With work proceeding well on current processing potato research, the Processing Potato Industry Advisory Committee (PPIAC) has turned its attention to the next phase. **Iain Kirkwood explains.**

The Australian Processing Potato Research and Development Project (PPR&D), an initiative of the Processing Potato Industry Advisory Committee (PPIAC), is currently three years into a five year collaboration between the potato industry and several research providers. The program is funded from growers and processor levies, state and university funds however these funds are increasingly being used to leverage additional funding from other sources both nationally and internationally.

This program has focused on three of the most damaging soil borne diseases of potatoes, powdery scab, common scab and *Rhizoctonia* as well as the virus disease Tomato Spotted Wilt Virus. During the last three years, the program has expanded significantly is now a truly international collaboration involving researchers in Canada, New Zealand, and shortly the UK.

Significant progress has been made during the first three years with the development of diagnostic tests for all the target soil borne pathogens, a resistance rating for all the commonly grown cultivars, organic and chemical soil amendments and new lines of existing potato varieties resistant to common scab.

Potatoes Australia readers will have received regular updates on progress from each of the program leaders.

The PPIAC is now looking forward to the next five years of the program and is in the process of identifying the most significant issues facing the Australian potato industry in which research and development can lead to significant productivity and sustainability improvements.

The industry's strategic plan identified three broad areas where R&D can improve industry competitiveness by using research and development to; build better businesses, enhance environmental sustainability and encourage a focus on whole of chain productivity improvement'.

The program would like to hear from growers and the industry in general where they see the priorities for potato research over the next five plus years. It is important to recognise that not all issues facing the industry can reasonably be expected to be resolved by research. This is the industry's opportunity to influence how their levy dollars are spent and it is important that the focus of any future project should meet the need of the industry.

The program therefore invites the industry to put forward research ideas, issues, suggestions or comments on where the next phase of the program should focus.

Please forward these to Dr Iain Kirkwood either by e-mail on Iain.Kirkwood@dpiw.tas.gov.au or by phone on 03 64 217698.



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PPR&D Researchers

Dr Sarah Collins

If there were an award for patience, Dr Sarah Collins of the Department of Agriculture and Food, Western Australia would definitely be in the running for a prize. For the last two years, Sarah has been charged with the task of providing the data required to declare the state of Western Australia to be completely free of potato cyst nematode (PCN).

Between 1986 and 1989, potato cyst nematode was detected on six properties in the Perth metropolitan area. A strict eradication and quarantine program was quickly implemented, and 21 years later, no further outbreaks have been detected. Despite strong indications that WA is free of the nematode, the WA potato industry is still subject to testing and monitoring protocols, and export restrictions to important overseas markets continue to exist.

Since July 2005, Sarah has visited every potato growing region in the state, collecting soil samples for testing.

“By the end of the year I will have collected samples from each growing area of WA – from Gingin to Albany and Esperance. As a result, I’ll visit virtually every potato grower in Western Australia,” Sarah said.

Using a 5 x 5m grid, Sarah collects 400 samples per hectare, which will subsequently be tested in the lab to identify the presence of PCN. She is currently developing a molecular test to enable detection of low levels of PCN from large soil samples.

“Scientifically it is much more difficult to prove that something doesn’t exist, than proving that it does,” Sarah said. “The great challenge is to get the testing to the point where no one can point a finger at us, and dispute the results of our survey.”

A relative newcomer to agriculture, Sarah commenced her plant pathology career working in forest research. “I completed an environmental management degree, and spent my honours year investigating forest fuel loads in rehabilitated areas after mining. My PhD was concerned with the long-term survival of jarrah dieback in rehabilitated areas after mining compared to adjacent jarrah forest.”



However, she is excited by the prospects offered by working in agriculture, and enjoys working for the Department.

In addition to her research, Sarah is also an active member of the broader plant pathology community. She was recently elected as Secretary for the Australasian Association of Nematologists, and is the Western Australian regional councillor for the Australasian Plant Pathology Society. In this role, Sarah manages the WA branch, and is actively involved in engaging the plant pathology community by organising seminars and symposia.

“At the moment I am organising a student symposium, and working towards drawing younger researchers into the field of plant pathology.

“It is really important to create and maintain research links in plant pathology, and particularly to forge links between different institutions,” she said.

Sarah hopes to present her PCN findings at an international nematology conference to be held in Australia next year.

SPOTLIGHT ON:

Potato cyst nematode

(*Globodera rostochiensis* (Woll.) Skarbilovich)



Common name

Potato cyst nematode, PCN, potato root eelworm or golden nematode.

Scientific name

Globodera rostochiensis (Woll.) Skarbilovich.
Previously named *Heterodera rostochiensis*.

Potato cyst nematode (PCN) is a serious pest of potatoes world-wide and is subject to stringent quarantine and/or regulatory procedures wherever it occurs. PCN can be a devastating pest of potatoes in temperate regions if not controlled.

It was introduced into Europe from South America in the mid-1880s and was first discovered in Australia in 1986 at Munster in Western Australia. PCN was first found in Victoria in 1991 on potato crops in market gardens in the Wandin-Silvan area and subsequently in several other areas.

There are two species of PCN, *Globodera rostochiensis* and *Globodera pallida*, but only *G. rostochiensis* is known to occur in Australia.

Symptoms

Infested plants are stunted and may wilt, leaves may yellow or display a dull colour. Affected plants have a reduced root system which is abnormally branched and brownish in colour. At flowering or later, minute-white, yellow or brown spheres or cysts, about the size of a pin head (0.5mm), can be seen on the outside of roots.

Damage to the crop varies from small patches of poor growing plants to complete crop failure. Diseased plants first occur in isolated patches and these become larger with each new crop if potatoes are continually grown on the infested site. In light infestations, potato plants may show no above ground symptoms, but yield can be reduced. Light infestations can reduce tuber size, whereas heavy infestations reduce both number and size of tubers.

PCN is not greatly influenced by soil type and temperature because the nematode thrives wherever potatoes are grown.

Dispersal

PCN is a soil-borne pest and is spread by transport of infested soil. For example, cysts can be carried in soil adhering to seed tubers, farm machinery, implements, boots, bins and plants, particularly bulbs. Cysts can also be transported by wind and flood water. In very rare cases in heavily infested crops, PCN cysts can develop on the potato tubers themselves.

It can take 20 years from the time PCN is introduced into a country before it is detected, and it takes approximately six to



seven years from its introduction into a potato paddock before numbers of the nematode reach a detectable level.

Locally, PCN is usually dispersed by farming activities, eg sharing farm equipment contaminated with infested soil.

PCN has spread with the trade in new potato cultivars into the major potato producing regions of the world.

Host range

Potato (*Solanum* spp.), tomato (*Lycopersicon* spp.), egg plant (*Solanum melongena*), and some solanaceous weeds.

Although the preferred host is potato, PCN can also infest tomatoes and other solanaceous plants, including the nightshade weed. Thus populations of nematode can build up in the soil as long as solanaceous crops are grown.

Control

PCN is difficult to control because the eggs and juveniles in the cyst are protected from desiccation and chemicals and remain dormant for many years in the absence of hosts. It is only when eggs hatch that the nematode can be controlled with nematicides.

Crop rotation is an effective and practical means of control. However, rotations of up to 10 years are necessary to reduce populations.

There is good resistance to this form of the nematode in the potato cultivar Atlantic. If Ro1 is the only pathotype present and in low numbers, then continually planting Atlantic for seven years will be as effective in reducing the nematode population as treating soil with nematicides.

However, if the other PCN species is present, or if other pathotypes are present, then they will increase and become a major problem if Atlantic is used continually.

The best way to control the spread of PCN is to:

- Plant certified seed potatoes (certified seed potato crops are surveyed for the presence of PCN).
- Practise crop rotation.
- Avoid sharing farm machinery or implements.
- Avoid using second-hand containers which may contain infested soil.
- Avoid spreading soil from potato graders onto potato paddocks.
- Examine your crops for patches of poor growth, especially areas in a paddock where weeds have invaded.

Correct diagnosis is essential for effective pest and disease control.

For further information phone Crop Health Services on (03) 9210 9356 or fax (03) 9800 3521.

For further information on registered chemicals, phone Chemical Information Service.

Information sourced from Department of Primary Industry Victoria Agricultural Note AG0572 (ISSN 1329 8062), updated in April 2006 by Gordon Berg DPIV, Knoxfield.

Originally published in April 1999.

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Original author: Jillian Hinch, Plant Sciences and Biotechnology, La Trobe University, Bundoora, previously edited by Kathy Pullman.

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



FEATURE - THE FUTURE OF POTATO FARMING?

Three contrasting papers highlighted in this issue of Chips look at potential methods for optimising potato production in the future.

In the first paper (Larkin & Griffin), the process of biofumigation was investigated using six brassica crops (canola, rapeseed, radish, turnip, yellow mustard and Indian mustard). The volatile compounds released from chopped leaves inhibited growth of a range of soilborne potato pathogens in laboratory cultures, greenhouse experiments and on-farm trials. Indian mustard was particularly effective against *Rhizoctonia solani*, while rapeseed and canola showed good efficacy against powdery scab and common scab. Other non-brassica crops, such as barley and ryegrass, also showed control of some diseases in some trials. In future, this type of information can be used to design specific crops rotations to control diseases present at particular sites.

In the second paper (Mallory & Porter), data from 13 years of the Maine Potato Ecosystem Project were used to analyse the long-term effects of soil management, pest management, cultivar and rotation on the yield stability of potatoes. In all but one year, yields were up to 55 per cent higher in an amended soil system (manure, compost, green manure and supplemental fertiliser) than in a contrasting non-amended soil system (synthetic fertiliser). Yields in the amended soil system were less influenced by adverse growing conditions, particularly low rainfall. The pest management system and cultivars used also influenced long-term yield stability but crop rotation did not. Knowledge of these factors can be used to design potato production systems that will give consistent yields over the long term.

The third paper (Yokobori et al.) also considers the long-term factors that may affect potato yields and investigates precision agriculture as a management strategy to use in decision-making. Real-time satellite images have been tested as tools for analysing within-field variability and making decisions to achieve uniform crop growth, but these images are heavily dependent on weather conditions. In this study an unmanned helicopter was used to acquire images of a potato growing area that had differences in previous fertiliser history. A major factor influencing crop uniformity was differences in the organic matter content remaining from preceding crops, and elevation data from the helicopter indicated that the high organic matter was also found in a concave portion of the field. Quality decreased when excessive nitrogenous fertiliser was applied to areas with a high organic matter content, so variable-rate fertiliser applications could be based on organic matter content.

Control of soilborne potato diseases using Brassica green manures. Larkin & Griffin (2007) *Crop Protection* 26: 1067-1077.

Potato yield stability under contrasting soil management strategies. Mallory & Porter (2007) *Agronomy Journal* 99: 501-510.

Analysis and management of potato yield non-uniformity using helicopter-based remote sensing. Yokobori et al. (2005) *Agricultural Information Research* 14: 1-10.

Section One: RESEARCH SUMMARIES

AGRONOMY

Vine desiccation characteristics and influence of time and method of top kill on yields and quality of four cultivars of potato (*Solanum tuberosum L.*). Over three years and four treatment dates, potatoes were either mechanically flailed or chemically desiccated with diquat. The flailing treatment reduced yields by an average of four per cent and specific gravity was equal to or lower than chemical desiccation. Fry colour was not affected by method or timing of top kill. The chemically desiccated potatoes were not ready for harvest until at least three weeks after treatment but crops killed by flailing could be harvested immediately. This means that top kill could be delayed when using flailing, which may result in greater yields. There were differences between cultivars in the time taken to desiccate. Harvest dates and yields can be manipulated by using alternative desiccation methods in different situation. Waterer (2007) *Canadian Journal of Plant Science* 87: 129-135.

Effects of rotary tillers on potato quality. This study indicated that the incidence of greening was reduced when a tractor-pulled rotary tiller was used for cultivating potatoes in stony soils. Geischer & Buchner (2007) *Kartoffelbau* 58: 160-163.

FERTILISERS

Reducing nitrate leaching from arable agriculture: preliminary results from the Netherlands. The average farm groundwater nitrate concentration in the Netherlands is almost twice the EU target (50 mg nitrate/litre). To assist with environmental monitoring and crop management, this paper describes nitrate measurements and nutrient efficiency indicators, such as nitrogen surplus and residual mineral soil nitrogen. These can be easily measured and linked to fertiliser practices, so have a strong appeal to farmers. Langeveld et al. (2005) Nitrates in groundwater. Selected papers from the European meeting of the International Association of Hydrogeologists, Wisla, Poland, 4-7 June 2002: 259-268.

Quality and yield improvement through fertigation management. This paper discusses fertigation treatments to improve potato yield and quality. A number of studies have shown the beneficial effects of drip irrigation combined with simultaneous fertiliser application on potato composition, processing quality and sensory properties. Koehling (2007) *Kartoffelbau* 58: 130-133.

The effect of different N and K sources on tuber nutrient uptake, total and graded yield of potatoes (*Solanum tuberosum L.*) for processing. This research was carried out over three years on an organic farm in Germany. Four fertiliser treatments were applied annually in spring just before ploughing and sowing two maincrop potato cultivars (Agria and Marlen). Soil nitrate levels were measured throughout the trial and indicated that organic cropping systems are nitrogen limited. Potassium levels in soil and tubers could be increased through application of either cattle manure or potassium sulphate. Tuber yields varied between years but were strongly influenced by

fertilisers. Total and marketable tuber yields were greatest when both potassium sulphate and organic nitrogen (horn grits) were applied. Tuber yield responses to cattle manure were inconsistent. Haase et al. (2007) *European Journal of Agronomy* 26: 187-197.

PESTS AND DISEASES

Effect of mixed viral infections (Potato virus Y-Potato leafroll virus) on biology and preference of vectors *Myzus persicae* and *Macrosiphum euphorbiae* (Hemiptera: Aphididae). Recently the number of potato plants testing positive for both Potato virus Y (PVY) and Potato leafroll virus (PLRV) in Idaho, USA, has increased. These plants display more severe symptoms than singly-infected plants. This study examined the fecundity and preference of two aphid vectors of these viruses, the green peach aphid (*Myzus persicae*) and the potato aphid (*Macrosiphum euphorbiae*). The number of nymphs produced from adults caged to potato leaflets was significantly higher on doubly-infected plants than on singly-infected plants or non-infected plants. In addition, both types of aphids preferred to settle on doubly-infected than on singly-infected or non-infected plants. Srinivasan & Alvarez (2007) *Journal of Economic Entomology* 100: 646-655.

Interactions between *Pratylenchus* spp. and *Rhizoctonia solani* on resistant and susceptible potato varieties. Although the free-living nematode *Pratylenchus* spp. does not cause the level of damage to potatoes that the cyst nematodes do, this paper has shown that it can interact with *Rhizoctonia solani*, the pathogen causing black scurf. Three varieties with moderate to good resistance to black scurf showed greater disease symptoms in the presence of *Pratylenchus* spp. Other varieties susceptible to black scurf, such as Sante, did not show additional disease symptoms in the presence of *Pratylenchus* spp. Maris Piper showed no increase in the level of black scurf disease with *Pratylenchus* spp., but the nematode did cause a decrease in yield. Kenyon & Smith (2007) *Aspects of Applied Biology*: 81-84.

***Synchytrium endobioticum*.** This paper describes procedures for controlling *Synchytrium endobioticum*, the potato wart pathogen. Monitoring, which includes survey, detection and identification, is the first step. This is followed by containment and suppression, using specific techniques such as steaming tubers, incinerating debris, burying and treating with slaked lime or by using resistant cultivars. Anon (2007) *Bulletin OEPP/EPPO Bulletin* 37: 221-222.

STORAGE

Fungi causing dry tuber rots of seed potatoes in storage in Scotland. A mean rot index was calculated that combined the prevalence of a pathogen in 156 samples (each comprising up to ten rotted tubers) over three seasons with the incidence of tubers affected by the pathogen within those samples. *Phoma foveata* (gangrene) had the highest rot index, while *Fusarium avenaceum* appeared to be the greatest cause of Fusarium dry rots. The mean rot index for *Cylindrocarpon* spp. was slightly more than that for *F. avenaceum*. Region of production affected the prevalence of *P. foveata* and *F. avenaceum*. Reduced sensitivity to the fungicides thiabendazole and imazalil was seen in some isolates of *F. avenaceum*, particularly for imazalil. Choiseul et al. (2007) *Potato Research*.

Biological principles of potato storage. Pt I. This article examines the biological processes occurring during potato storage, including respiration and transpiration; wound healing; pathogen defence mechanisms; dormancy and germination; and physiological ageing. Schuhmann (2007) *Kartoffelbau* 58: 186-191.

Biological principles of potato storage. Pt II. Storage rots, blackspot, changes in composition. Following on from the previous paper, this article looks at causes, infection pathways and symptoms of Erwinia storage rots, Fusarium dry rots and Phoma dry rots; methods for prevention of potato storage rots; occurrence of black rot in stored potatoes; and changes in potato composition during storage, such as effects on nitrates, vitamin C and glycoalkaloids. Schuhmann (2007) *Kartoffelbau* 58: 244-249.

PATENT

Method of preparing novel healthy potato & taro instantly edible food. This patent describes a method of cooking raw potatoes and taro in water and drying them to obtain a bar, slice or sphere. The process does not create harmful materials during preparation and a variety of nutrients is maintained in the product. The products have a natural puffiness and crispness, taste good and are convenient to eat and store. Yi (2007) *PCT International Patent Application WO2007071111 [FSTA: 2007-Jv3937]*.

Potato Country

MAY 2007

Maximising the nutritional content of potatoes. This article discusses how only about one per cent of the genetic diversity in the potato family is used in domestic varieties of potato. It is believed that examining the more than 200 wild species from around the world may reveal species that contain high levels of vitamins, phytofactors and other potential health-promoting compounds. A study funded by the Washington State Potato Commission has shown a wide range in the concentration of folic acid in different potato varieties. Folic acid is an important component of the diet of pregnant women, because low levels have been associated with birth defects. Yellow-fleshed potatoes, such as Satina, Carola and Golden Sunburst, tended to have the highest levels of folic acid, while small, fresh ("new") potatoes had very high levels of folic acid, up to 50 per cent higher than at the traditional main harvest in autumn. Phenolic compounds, which have numerous health-promoting effects, also vary widely in potato varieties over 10-fold. These compounds are colourless, so can be found in high levels in white-fleshed potatoes such as Norkotah. Like folic acid, phenolic compounds have been found in higher levels in "new" than in autumn-harvested potatoes. 2007, May, p. 14-15.

Potato Processing International

JANUARY/FEBRUARY 2005

Potato Protector. A team of scientists at the Scottish Crop Research Institute has developed strains of Desirée and Mayan Gold potatoes that have 6-7 times the carotenoid concentration of their parent varieties. Carotenoids are fat-soluble antioxidants that are responsible for many of the red, orange and yellow colours of plants. A transgenic approach was used to develop the new varieties and the advantage and disadvantages of these potatoes must be considered carefully. The increased levels of two specific carotenoids, beta-carotene and lutein, may have significant health advantages, such as protection from eye disease and premature death, particularly in developing countries. Carotenoids may alter the flavour of the potatoes and tests must be carried out on the safety of the new strains. 2005, January/February, p. 48.

Snippets from www.potatonews

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

AUGUST 2007: NEWS HEADLINES

United Kingdom: Growers can reap the advantages of weed burning technology. This article describes how the technology associated with Thermoweed, a liquefied petroleum gas (LPG) weed burner, has recently been improved. The 6 m wide burner can be used for pre- and post-emergence weed control, desiccation and debris destruction.

Australia: South Australian potato growers got right to collectively bargain with processors. The Australian Competition and Consumer Commission has recently given the South Australian potato growers the same bargaining power as their Victorian counterparts. This gives growers some confidence in the industry and will enable them to get the prices they need to stay in business.

Australia: Tasmanian potato growers receive 12 pc price increase from Simplot. The extra \$30 a tonne for first grade potatoes and \$27.50 for all other processing potatoes will help cover rising production costs and reduce the number of growers pulling out of the industry.

JULY 2007: PRESS RELEASE

Saving the world with potatoes. At the recent Horticulture New Zealand annual conference, plans to celebrate the International Year of the Potato were announced. Activities include new resources and recipes that will be produced on the theme 'everything goes with potatoes', new cookbooks written by key food writers, a new potato buyers guide and wallet card, radio and magazine competitions and a celebrity recipe swap. An international speakers' tour will focus on nutrition, potatoes and their role in satiety (feeling full), while potatoes will be the major focus of the 5+ A Day campaign in November 2008 that includes a "Grow Your Own Potato" kit for children. More details are available at www.vegetables.co.nz and www.potato2008.org. *Press Release (31 July 2007): Horticulture New Zealand.*

AUGUST 2007: FEATURE ARTICLES

Manage potato diseases to minimize fungicide resistance. This latest issue of "Spudvine" from the University of Idaho (<http://www.uidaho.edu/~bingham/Jun%202007.pdf>) describes the processes that lead to fungicide resistance and gives recommendations on how to prevent or delay it. For example, the full manufacturer's recommended rate should be used, and fungicides should be applied early in a disease epidemic. A useful table listing chemical groups, common names and some trade names is presented.

Best management practices for nematode control. This PowerPoint presentation (<http://www.colostate.edu/Depts/SLVRC/research/2007SRMAC/2007SRMACIngham.pdf>), by researchers at Oregon State University in the USA, gives some good pictures of three nematodes (root-knot nematode, stubby-root nematode and root-lesion nematode) that may affect potato crops. It also summarises current research into control methods and damage minimisation.

JULY 2007: POTATO REPORTER ONLINE RESEARCH

Sprout inhibitors around the world! A Canadian researcher is seeking information from countries around the world about the actual use or popularity of methods for potato sprout inhibition, such as low

temperature methods, chlorpropham (CIPC), maleic hydrazide (MH), dimethyl naphthalene (DMN), carvone (Talent), jasmonates, ethylene, hydrogen peroxide, shaded huts, rustic storage, etc. Please send any details to Dr Barbara Daniels-Lake at danielslakeb@agr.gc.ca.

Prototype irrigation system 'listens' to plants. American Agricultural Research Service scientist Robert Evans has built a state-of-the-art irrigation system that uses the latest in wireless technology for "communicating" with crops. The system comprises Bluetooth technology, sensors, weather stations and traditional irrigation equipment.

World Potato Congress news

The CD of the Proceedings from the 6th World Potato Congress, held in Boise, Idaho, USA, 20-26 August 2006, was unable to be distributed to delegates. However, PowerPoint presentations are now on the website (www.potatocongress.org) for anyone to view. Topics covered include papers on potato tuber moth, future trends in global potato production, co-operatives and family partnerships, control options for a range of potato diseases, irrigation and potato storage.

The 7th World Potato Congress will be held in Paris, France, in March 2009. Two other major international agricultural events, including one focused on machinery and equipment, will be held in the same week near Paris.

The WPC Potato Tour to Australia and New Zealand will be on 10-27 February 2008. There will be 12 days in Australia, visiting Melbourne, Toolangi, Wagga Wagga, Canberra and Sydney, and five days in the South Island of New Zealand, with stays in Christchurch and Queenstown. The tour will be led by John Rich, a former WPC International Advisory Committee Member. More details at <http://quadrantaustralia.com/TOURS/TWPC2008/index.htm> or you can email John directly at enquiry@agtour.com.au.

Interesting fact

The world's biggest potato, grown in Germany in 1997, weighed 3.2 kg (7 lb).

New book - hot off the press!

Potato production and innovative technologies. This is the result of the "Potato Russia" international conference that took place in Moscow during August 2007. It covers the whole spectrum of the potato supply chain, from consumer behaviour and marketing, through seed potato multiplication systems, agronomic and crop management practices, crop protection; and plant breeding including molecular aspects, to the technology of mechanization and storage. The book will be of interest to potato producers; breeding, chemical and machinery companies; and potato specialists of all disciplines. Haverkort & Anisimov (eds) (2007) Wageningen, the Netherlands. 424 pp.

Chips is a no-frills summary of global R&D in the potato industry. We also provide you with access to full copies of all available papers for private study. To request copies, please email library@crop.cri.nz. Produced for Horticulture New Zealand and AUSVEG by Crop & Food Research. Visit www.hortnz.co.nz

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