

potatoes australia

Informing and connecting
Australia's Potato Industry
December 2007



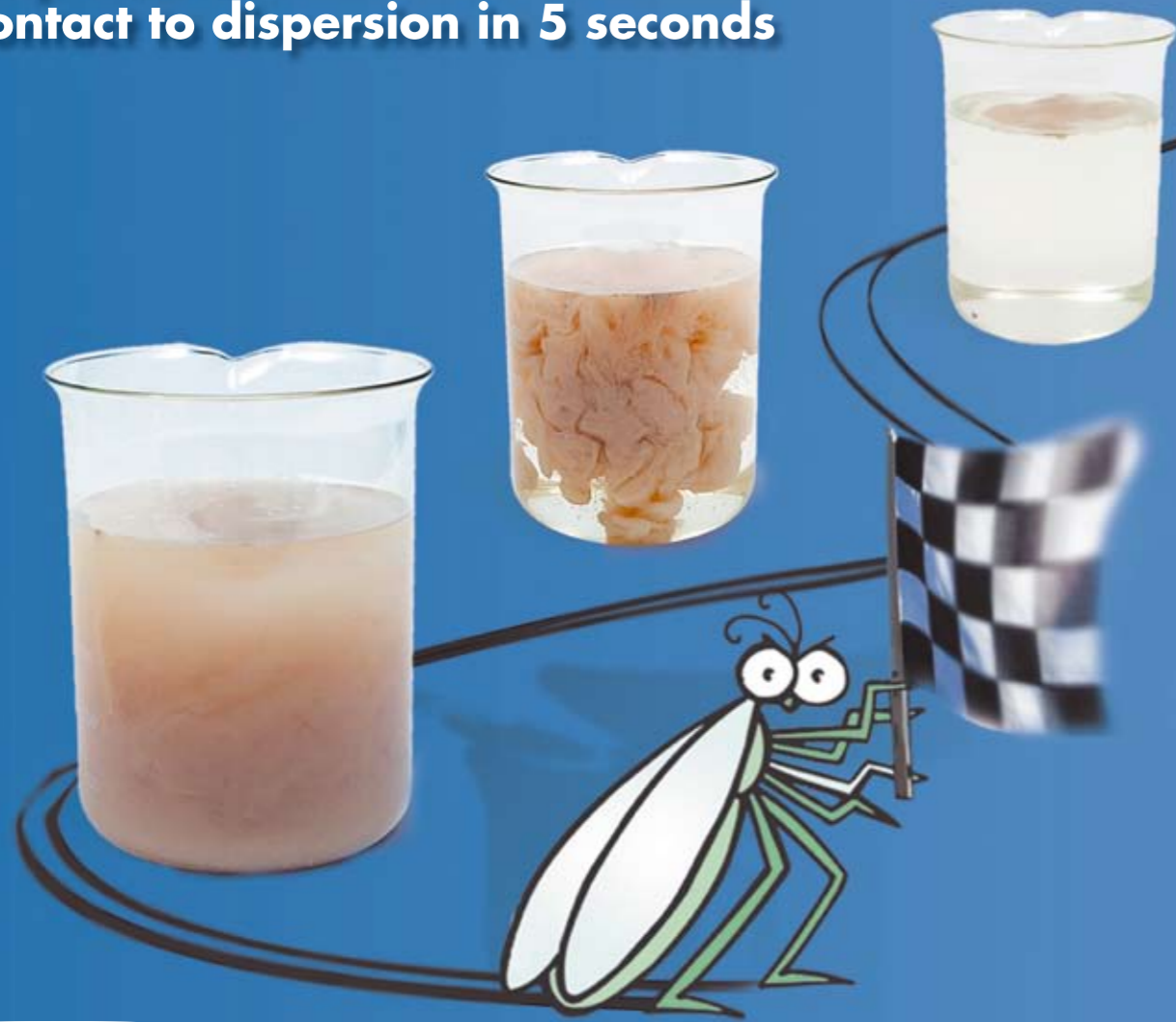
Profile : Leigh Elphinstone

2007 Federal Election Coverage

International Year of the Potato 2008



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AUSVEG Chairman

Michael Badcock

Editor

Simon Adams
AUSVEG
Ph: (03) 9544 8098
Fax: (03) 9558 6199
M: 0419 732 446
simon.adams@ausveg.com.au

Communications Coordinator

Toni Davies
AUSVEG
Ph: (03) 9544 8098
Fax: (03) 9558 6199
M: 0400 242 713
toni.davies@ausveg.com.au

Advertising

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

Design, Print and Distribution

at+m integrated marketing
Ph: (03) 6334 3577
Fax: (03) 6331 5006
info@atmmarketing.com.au
www.atmmarketing.com.au

Editorial Committee

Michael Hughes (QLD)
Department of Primary Industries
& Fisheries
Ph: (07) 4095 8229
Fax: (07) 4095 8258
michael.hughes@dpi.qld.gov.au

Bob Peake (SA)
Primary Industries and Resources SA
Ph: (08) 8389 8800
Fax: (08) 8389 8899
peake.bob@sau.gov.sa.gov.au

Iain Kirkwood (TAS)
Department of Primary Industries
and Water
Ph: (03) 6421 7698
Fax: (03) 6424 5142
iain.kirkwood@dpiw.tas.gov.au

Rachel Lancaster (WA)
Department of Agriculture and Food WA
Ph: (08) 9780 6210
Fax: (08) 9780 6163
rlancaster@agric.wa.gov.au

Steven Page (SA)
Golden Sunrise Fresh Produce
Ph: (08) 8577 8577
Fax: (08) 8577 8544
spage@goldensunrise.com.au

David Antrobus (VIC)
McCain Foods (AUST) Pty Ltd
Ph: (03) 5339 2241
Fax: (03) 5338 0633
dantrobus@mccain.com.au



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MEDIA
RELEASE



Women the key to increasing vegetable consumption

Women are emerging as the key role within the family unit who can have a major impact on increasing vegetable consumption within Australia.

Initial results from consumer research carried out by the industry is showing wives and mothers have often tried everything they know to increase vegetable consumption in the family, and would welcome help to achieve this, particularly when it comes to their children.

Many have grown up in the "meat and three veg" era and are keen to learn about new varieties and discover more interesting ways to prepare vegetables.

The qualitative research and face to face interviews with key target audience groups are being carried out to help inform the development of an overarching domestic marketing strategy and implementation framework for the Australian vegetable industry.

The strategy is a critical part of the industry's strategic plan, Vegvision 2020, and represents the largest investment to date by the Australian Vegetable Industry Development Group (AVIDG).

The Domestic Marketing Strategy will have the dual objective of increasing consumer demand for vegetables, as well as increasing their value in the Australian domestic market.

The project is using a process that combines face to face interviews and qualitative research to supplement existing information. Already 60 stakeholder interviews and over 100 in-depth interviews with consumers have taken place. The next steps include further consultative meetings with retailers and

wholesalers, stakeholders in the food service industry, processors, packers, marketers and government.

The first major milestone will be a situation report which will cover the analysis of the entire vegetable industry. From here a strategic SWOT analysis will be developed which will prioritise key initiatives for the plan.

The consumer and domestic marketing industry advisory groups that have been set up to inform the vegetable industry's Industry Advisory Committee have been presented with the project plan and will continue to be engaged throughout the course of the project.

In addition to these groups, a dedicated reference group consisting of key industry stakeholders across the supply chain will act as a sounding board for the project team to ensure the project produces outcomes that are both commercially viable and can be implemented.

The final marketing strategy developed will need to complement and leverage the marketing and communications activities being undertaken by commercial players in the industry, as well as government and non-government organisations. It will produce a detailed implementation plan that will demonstrate what resources are needed and which organisations will invest time and money to ensure it is implemented.

Horticulture Australia Limited (HAL) is responsible for managing the project which is being undertaken by APIS Business Services Pty Ltd.



Know-how for Horticulture™

AUSVEG Potato Group Chairman's message

Congratulations to the newly elected Rudd Labor Government. The Australian Potato and Vegetable industry looks forward to working very closely with your new government in the coming three years. To the new Minister for Agriculture, Fisheries and Forestry, the Hon. Tony Burke MP, we welcome the opportunity to develop a spirit of industry and government working closely together. To The Hon. Peter McGauran MP, we say farewell and thank you for all the assistance you have provided to our great industry in the past.

The Federal Government has signalled to the Australian people that it will ratify the Kyoto Protocol on climate change. What impact this will have on our industry in Australia is yet to be determined. AUSVEG will follow this very closely and be able to keep the industry informed as the position becomes clearer.

The progress of the marketing managers program is starting to take shape. Market Development Manager, Matthew Wickham is clearly laying down a plan for the whole of the supply chain to be involved. This will enable industry for the first time to take control of its own destiny.

As reported in the AUSVEG weekly news (Friday 30 November 2007) the AUSVEG board has clearly signalled a change for the better in policy, structure and the capacity to better serve you, our growers. As the draft constitution is going out to the members with the modernisation of AUSVEG you will be kept informed. The alignment with strategy and structures in the Veg Vision 2020 document will clearly lift the functions carried out by the peak industry body. As Michael Luscombe, Managing Director and Chief Executive Officer of Woolworths Ltd, said at the "vegetables claim centre plate" conference, "you have a peak industry body, get involved at some level."

2008 marks the commencement of the International Year of the Potato providing the Australian industry a prime opportunity to celebrate our achievements locally and take part in an international industry celebration. Potatoes are the highest return per one mega litre of water. Developing countries are looking to maximise water use in a drying climate. Changing from some traditional crops like rice to potatoes can be seen as a more efficient use of water. As a rule of thumb (subject to some variables) two Olympic-sized swimming pools produce one semi-trailer of potatoes which is about 150,000 meal portions.

Seasons greeting to all and a prosperous 2008.

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



David Anderson
AUSVEG Potato Group Chairman

Editor's message

Welcome to the last *Potatoes Australia* issue for 2007, capping off a big year for the industry. Recent events are also setting the scene for a huge 2008, with a new federal government and the International Year of the Potato launched at the United Nations.

Thank-you to everyone who responded to our grower survey included in last issue's magazine. Your feedback was greatly appreciated and will help shape future issues of the magazine to focus on issues important to you. Also, congratulations to Neil Graeber in South Australia, who won the survey's GPS prize.

This issue sees the launch of a regular feature for 2008 covering the International Year of the Potato 2008 (IYP 2008), throwing the spotlight on the spuds around the globe. International buzz has been steadily increasing and we'll be giving you a glimpse into the workings of spud growers around the world, starting with a look at the UK industry and IYP 2008 plans for South Africa and New Zealand. Not forgetting the local industry, we cover a recent visit from Dr Pamela Anderson, Director General of the International Potato Centre (CIP), who presented at a forum in Melbourne.

With climate change an increasingly prominent issue, Ian James gives us an overview of implications for the industry, and Tom Rafferty takes a look at supply chain hot topics.

By now you should have received your copy of the *Potatoes Australia Review* which provides a roundup of R&D work conducted on your behalf. If you haven't received a copy or know of someone who should have, please get in touch and we'll forward one as soon as possible.

Finally, thank-you for your support for the magazine during the year and we look forward to continuing next year with IYP 2008 representing an opportunity for spuds to take centre stage. If you have any events planned, drop me a line and let me know so we can spread the word.

Have a great Christmas and New Year. See you in 2008!



Simon Adams
Editor
AUSVEG

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PROFILE Leigh Elphinstone

Tasmanian potato grower

Leigh Elphinstone is confident about his future in processed potatoes.

Katie Fisher finds out why.

Leigh Elphinstone is optimistic about the future of Tasmania's processing potato industry. In fact, the accomplished young grower believes that "variety development is one of the key drivers for the future of the industry".

"The rewards are there for growers if they can produce the higher yields, and with the right soils and varieties the future should be exciting," Leigh said.

Leigh, who was the recipient of the inaugural Simplot Young grower of the year award last season, is a second generation grower. Now 26 years old, he returned to the family farm at Sisters Creek on the North West coast of Tasmania at the age of 22, after completing an apprenticeship as a boiler maker and welder.

The skills learnt from his previous trade have been invaluable on the 291 hectare farm which he manages alongside his parents and his wife.

The farm comprises rich red basalt soils making it ideal for growing vegetables. Water has not been a problem to date with a creek in the middle of the property that flows year round, which is complemented by on farm winter storage dams.

While potatoes are the main enterprise grown on 32 hectares at any one time, Leigh said the family also grows poppies, beans, wheat and pastures to fatten about 600 head of beef cattle which are bought as weaned calves and sold to a local abattoir.

However, Leigh's main focus is on the potato crop with one of his main aims being to increase yields but not to the detriment of returns or quality.

On average, the property annually produces about 2200 tonnes of Russett Burbank potatoes from 80 acres, or 28t/acre.

The potatoes are grown in a five to eight year rotation with winter grass, poppies, beans, and pastures and then potatoes again.

Leigh said they were one of the few growers in the region that supplied Simplot, who he found easy to work with. "With the right growing and harvest methods we can grade our potatoes to a quality that offers us rewards through an incentive system, in particular for quality and size," he said.

For Leigh, the season starts in early October, with planting, and harvest begins 22 weeks later in late March. Leigh said at

planting a "band" of fertiliser was applied under the seeds at a rate of 2.5t/acre. At six weeks the plants are top dressed with Nitrogen through the farm's fertigation system. The irrigation system is both a boom and gun operation.

Leigh said that leaf analysis tests to check the plants' nutrient levels were the key in applying the correct amount of fertiliser. Also, Leigh added that the family were continually doing trial work to ascertain the best application rates.

A helicopter is used for spraying fungicides instead of a tractor and sprayer which would cause too much soil compaction and crop damage. Leigh said the cost of using the helicopter was similar to a ground rig. Pests and diseases that are sprayed include Rhizoctonia, Pink Rot, Blight and Target Spot.

The harvest season in late March to June is an intense period. Leigh and his father use a tractor drawn harvester that digs about 6-10t/hour.

"It is an efficient process which allows us to grade a good quality sample," Leigh said.

Typically the potatoes are stored on site at Simplot and then processed from July through to Christmas.

So why processing and not fresh potatoes? Leigh said growers were guaranteed the "dollars" before you even planted a crop. He said he had already signed a contract for the next season - it gives you that security which is hard to find in the agricultural industry.

He added that if you had quality issues the processing line was also able to handle the potatoes.

Leigh said Simplot price incentive specifications included a potato sized between 250-850 grams; bruise free and with minimal quality defects.

"Simplot offer price incentives to growers who supply AAA graded potatoes and pay according to tonnes delivered and the quality of the crop," he said. "It means we are constantly striving to grow a better quality potato with higher yields."

And while the future does look tough with many growers turning to the fresh market or getting out of the industry due to high costs of production, Leigh said he was "in it for the long haul".



"Our family are in the process of doing succession planning with Mum and Dad eventually looking at taking a step back," Leigh said.

"In my eyes Rome wasn't built in a day - and you can't get big fast. But I have the confidence that our farm can continue to produce high yielding, quality crops for the industry."

miedema AKV box fillers

The AKV 42 fills layer by layer. This prevents the potatoes from rolling in the box. Ventilation of the homogeneously filled box becomes more effective, more efficient and cheaper.

New head for Growcom

Lockyer Valley tropical fruit grower John Bishop has been elected the new Chairman of Queensland horticulture organisation, Growcom.

A tropical fruit grower, John has been a Growcom Board Director since 1999 and has 30 years' experience in the large scale production of horticultural crops on his Lockyer Valley property.

John was appointed after a member's ballot held in Brisbane in late November. Two new directors, Kent West and Lorelle McShane were also appointed to the seven member board. Reportedly a longstanding critic of Growcom, Kent was also appointed Vice Chairman.

Kent is a vegetable grower from Kalbar in south east Queensland and Lorelle McShane is a vegetable grower from the Burdekin region in North Queensland.

Incoming Chairman John Bishop paid tribute to former Chairman Paul Ziebarth and departing director, Allen Jenkin for their service to the Growcom board.

Ballarat growers win price rise for Russets

Ballarat potato growers have negotiated an unprecedented \$32.75 increase on the contract price for Russet Burbanks sold to McCain Foods in 2008.

Following six months of negotiation, the Ballarat McCain Growers Group has settled the contract price for 2008 with McCain Foods.

The Russet Burbank price has had an unprecedented \$32.75 increase on the 2007 price, bringing it to \$270/tonne for the 2008 season. Other varieties supplied to McCain Foods also had individual increases that fell in a similar price increase to Russet Burbank.

The result has been attributed to the immovable stance adopted by the Ballarat Negotiating Executive which is a sub-group of the main McCain Grower Group authorised to negotiate the price with McCains.

This is the first year that the negotiations have taken place under authorisation by the ACCC.

WA grower gives away crops

Lancelin grower Steve Brkusich has indicated he will start giving away up to a tonne a week of Nadine variety potatoes to major retailers in Western Australia (WA) who support his stance against the state's regulation of the potato industry.

Steve is currently involved in a dispute with the WA Potato Marketing Corporation (PMC) over a subsidy to grow potatoes over winter which he believes he is owed. When he withheld delivery of potatoes for three weeks, the PMC declined to purchase them and revoked his licences, effectively making it impossible for him to legally sell his potatoes in WA. Steve faces penalties if he sells potatoes directly to the public or even gives them away.

Steve's case is similar to that of Baldivis potato grower Tony Galati who also ran afoul of the PMC by selling potatoes directly to the public rather than through the corporation and is now challenging the system through the Federal Court.

WA is the only remaining state in Australia which regulates the commercial growing and selling of potatoes through a regulatory body (the PMC).

PCN Update

The PCN Management Project has been granted more funding through the Fresh and Processing IACs to continue another year.

The three meetings in 2007 saw a great deal of information and research undertaken to start putting together the PCN Management Plan Document. This information is now currently being drawn together into one document that will then be taken back to another meeting in early 2008 for discussion and further addition of information as it comes in.

The project is expected to tie up at the end of 2008, however the IACs have put pressure on the committee to have a working document in place by mid year. The document that is produced by this committee will have National implications for potato growing businesses so can not be rushed. It will be produced for industry comment when the committee is satisfied that it contains enough information and direction for industry to be able to work with, as well as cover the needs of PCN management in Australia.

The next meeting for the Management Group is expected to be in early February 2008.

ACCC ensures compliant template agreements across horticulture industry

Compliant horticulture produce agreements are now available to growers and traders throughout the horticulture industry after cooperation between the Australian Competition and Consumer Commission, individual traders and trader associations.

"The ACCC has investigated complaints that produce agreements distributed by a number of individual traders did not comply with the Horticulture Code," ACCC Chairman, Mr Graeme Samuel, said.

"After discussions with the ACCC, these agreements have been revised to ensure compliance. Additionally, the traders have agreed to implement a Horticulture Code compliance strategy for their staff and growers," he said.

"The ACCC is pleased that trader associations are now actively distributing compliant agreements and encourages members to operate within the law and get on with business under the new arrangements," Graeme said.

"The ACCC would encourage any trader who is using a template agreement to check with their association to ensure that they have a copy of the most recent template. Traders should also terminate any agreements with growers based on the old non-compliant templates and enter into new agreements which comply with the code," he said.

MOU opens up vegetable industry horizons

The vegetable industry is set for increased success after AUSVEG and the Northern Territory Horticultural Association (NTHA) formalised their commitment to working together by signing a historic Memorandum of Understanding (MOU).

AUSVEG Chairman Michael Badcock and the NTHA CEO, Tracey Leo, recently conducted the signing ceremony in front of the AUSVEG Board in Sydney.

The agreement signals an increase in communication and participation in national workshops.

"This is a major step forward for the industry in improving collaboration and increasing the positive profile for the vegetable industry and the business environment for growers", Michael said.

AUSVEG is the peak national industry body representing the interests of Australian vegetable and potato growers. The NTHA is the peak representative body for horticulture in the Northern Territory and surrounding regions.

Graeber grabs survey GPS

Lobethal grower, Neil Graeber has won the Navigator 3000, recently offered in the *Potatoes Australia* Reader's Survey.

Based in South Australia, Neil has been in the potato industry for 35 years.

The survey sought information on growers' satisfaction levels with the *Potatoes Australia* magazine and encouraged them to provide suggestions for future focuses and issues.





Following the Federal election result, Tony Burke MP has been appointed Minister for Agriculture, Fisheries and Forestry. He previously held the shadow Immigration portfolio.

"I will be travelling widely across rural and regional Australia to hear from as many people as possible. I intend to consult with Australia's farmers, their industry representatives and representatives from the fishing and forestry industries, along with the many small businesses in rural and regional Australia who make an extraordinarily valuable contribution to Australia's economy."

"It is a privilege to be appointed to such an important portfolio and I look forward to working with regional and rural communities to promote the continued development of Australia's primary industries."

Undertakings made by the ALP:

- Reform to exceptional circumstances (EC) policy, including reconsidering the meaning of EC in the face of seven years of drought and the established scientific link between the current drought and human induced climate change
- Rethink on the links between climate change preparedness, drought relief, primary industry policy and natural resource management with \$130 million over four years to assist farmers to adapt and respond to climate change. \$130 million to help farmers adapt to climate change (\$60 million); fund climate change research by rural research and development companies (\$15 million); advice and re-adjustment grants (\$55 million)
- Review of functions of both Biosecurity Australia and the Australian Quarantine and Inspection Service (AQIS). Extra \$15.3 million to fight weeds
- Continued support for Landcare as a means of engaging farmers and landholders to improve practices at farm level
- The establishment of a formal taskforce to review NSW grain branch lines and \$248 million towards enhancing Victoria's regional freight and export supply chains
- A commitment to fund 450,000 skilled training places but FarmBis training scheme will be scrapped

IR Overhaul

- Abolish AWAs, returning to collective agreements and common law contracts
- Unfair dismissal laws to be restored. Companies with fewer than 15 employees gain an exemption for employees' first year
- Existing five minimum award conditions to be extended to '10 national employment standards', including notice of termination and redundancy, long service leave and flexibility clauses for individual rosters and pay rates
- Government department 'Fair Work Australia' to replace Workplace Authority and Workplace Ombudsman agencies

Murray-Darling Basin

- Bring forward funding in the \$10 billion national plan for water security, to tackle urgent water problems in the Murray-Darling Basin
- Bring forward funding to buy licences from willing irrigators to speed up the reform process
- Spend up to \$400m fixing evaporation at Menindee Lakes and a further \$124m on the Wimmera Mallee pipeline
- Partner Adelaide if it proceeds with a desalination plant and give \$12m to fund a the "missing link" in a pipeline between Warren and Nyngan, in Western NSW
- Labor has promised to "streamline" the Federal water bureaucracy and reduce the number of bodies involved in managing the basin

What they said:

"We look forward to working with Prime Minister Kevin Rudd and new Federal Agriculture, Fisheries and Forestry Minister, Tony Burke, along with their colleagues, in pursuing our vision for a modern and sustainable Australian farm sector – one that not only meets these challenges, but capitalises on the opportunities ahead.

While differences remain – especially in industrial relations and Labor's broadband policy, which fails to provide for rural Australia's future by syphoning the \$2 billion Communications Fund's perpetual investment in the bush to pay for it – it's business as usual for the NFF."

- *National Farmer's Federation President, David Crombie*

"Post drought, the future of Australian agriculture is bright. Farmers need strong leadership to continue to advance our industry. Whilst Mr Rudd has said that he will present new leadership, whether or not he can present Australian agriculture with a strong plan for our future will be telling in whether his leadership is right."

- *Victorian Farmer's Federation President, Simon Ramsay*

"Key parts of the new Labor Government's plan for Primary Industries includes a focus on climate change, quarantine arrangements, research and development and red tape reduction.

A review of the Horticulture Code of Conduct has also been promised. This review is welcomed given what had been the Coalition's ongoing refusal to commit to a cost effective, workable and commercial outcome of this issue."

- *Brisbane Markets Chief Executive Officer, Andrew Young*

"Ministers (Tony) Burke, (Penny) Wong, (Anthony) Albanese and (Peter) Garrett all bring to the table their own experience and knowledge, and the NSW Farmers Association is keen to open it's doors to each of them in an effort to continue the flow of information between rural and regional communities and government.

Our rural communities need positive outcomes on issues affecting drought assistance, telecommunications, quarantine, climate change, water, the Single Desk, FarmBis and Industrial Relations."

- *NSW Farmers' Association President, Jock Laurie*

"AUSVEG welcomes the opportunity to work with the new Federal Government in a partnership to take our vegetable industry forward in an ever changing world.

We plan on meeting with the Minister for Agriculture, Fisheries and Forestry, Tony Burke in the very near future to explore ways to further develop recent initiatives undertaken by our industry."

- *AUSVEG Chairman, Michael Badcock*

Potato peels cool burn injuries



Doctors are turning to potato peels to treat burn victims. Toni Davies tells us more.

Potato peel is no longer being discarded into the kitchen bin as doctors in Kerala, South West India are using it on burn victims as bandages.

The Jubilee Mission Medical College and Research Institute have proven over a 15 year period that bandages made of potato peel are more effective than conventional bandages on minor burns. Dr P. V. Naryanan, a Plastic Surgeon at the Institute, said that the anti-bacterial properties in the potato peel sped up the healing process.

There are approximately 27 million burn cases each year worldwide of which seven million require hospitalisation. Bearing these figures in mind and that a large percentage of these people are from poor nations where access to medical facilities and supplies are limited, or in some cases non-existent, the treatment of burns presents a huge problem.

Dr Dattareya, an Indian born doctor working in Holland visited Jubilee Mission Medical College and Research Institute where he was amazed at the healing qualities of the peel. So impressed with what he had seen in India, he arranged for the material to be comprehensively tested in Holland.

Dr Dattareya said that research found the healing process of the potato peel bandage was quicker than a conventional bandage, yet the constituent of the healing substance couldn't be actually pinpointed.

The preparation of the bandages requires the potatoes to be soaked, washed and boiled for 20 minutes in clean water. The peel is then removed without any adherent pulp. The peel can then be stored in cotton gauze saturated in saline refrigerated at a temperature of four degrees Celsius.

The peels are then washed in saline and the inner surface of the peel is placed against the burn. The potato peel is then covered with two layers of saline treated gauze secured by a conventional bandage.

Patients are monitored for infection on a daily basis. If infection does occur a new dressing is applied, but if not, re-dressing only happens every four to eight days. The potato bandages can be cleaned and re-used.

Using potato peel bandages for minor burns has several advantages; it is cheap, non-sticky and heals quickly. Burn patients lose a lot of water from their wounds and the moisture contained in the potato peel slows the evaporation. Another benefit of this ancient healing method is the peel doesn't stick to wounds, alleviating the often excruciating removal of bandages.

Many aid organisations are training their medical staff in the uses of potato peel bandages, their excellent healing qualities and the cost effectiveness of this treatment.



Vegetable Industry Awards 08

Nominate now for the 2008 Australian Vegetable Industry Awards!

The annual Australian Vegetable Industry Awards pay tribute to and acknowledge the individuals who have set a benchmark for excellence in the vegetable industry.

The 2008 award categories, Grower of the Year, Young Grower of the Year, Researcher of the Year, Innovative Marketing Award and AUSVEG Chairman's Award recognise all of industry and we need your help to find the best our industry has to offer.

AUSVEG is seeking quality nominations from growers, industry organisations and committees, service providers, researchers - anyone who knows someone who is worthy of recognition. Even nominate yourself.

Nomination forms are included with this issue *Potatoes Australia*. Nominations close Friday, 29 February 2008.

For more information visit www.vegetableindustryawards.com.au or call the AUSVEG office on 03 9544 8098.



The Vegetables WA 60th Anniversary Dinner will proudly host the award presentations, taking place at Burswood Entertainment Complex, Perth on 31 May 2008. Tables at the dinner can be arranged through Vegetables WA on 08 9481 0834.

The Australian Vegetable Industry Awards aim to:

- Identify and reward excellence across the vegetable industry
- Help unite the industry
- Demonstrate and share achievements and successful, innovative farming practices with the wider vegetable industry
- Promote vegetable industry excellence to the broader Australian community

AUSVEG is pleased to announce the 2008 award sponsors:

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



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Fresh potato marketing development

Healthy spuds – ‘we dig ’em’

Health concerns are a strong driver of food consumption and product differentiation. For example, the Australian food industry has vowed to reduce trans-fat within its products by the end of 2007 to meet consumers demand for healthier foods. It is critical that fresh potatoes are not left behind and takes steps to educate end users on the healthy benefits of spuds. Market Development Manager, Matt Wickham explains.

Consumer trends significantly shape our markets and it is important to keep abreast and in tune with our customers. Of particular concern is health and nutritional claims on food products. In fact, many countries are enforcing legislation on food producers to prove health and nutritional claims. Food producers will only then be allowed to make these claims after they are approved by the relevant food safety authority. Many companies are already seeking approval by several independent experts to not only substantiate their nutritional claims, but to also reassure customers and give their organisation a marketing edge over competition.

As we know, the potato is a somewhat misunderstood vegetable. It unfortunately takes a lot of blame for excess flab thanks to the myths surrounding carbohydrates. Potatoes however are a tremendous source of vitamin C, potassium, fibre and contain natural energy our bodies require to function. As a fresh vegetable, potatoes already qualify for the Heart Foundation tick of approval. Did I mention that they are virtually fat free?

Fresh potatoes are an incredible healthy and natural part of a well balanced diet, and we should take advantage of this fact. Nutritional information from a credible independent spokesperson who is an expert in their field provides vital literature that can be used to remind consumers about potato goodness. It is important that the claims are relevant, precise and

in no way misleading. Nutritional claims need to build trust and confidence in our market to encourage sales. This information also becomes a useful source for debunking any negative or damaging claims.

Part of the marketing development project is the provision of the health and nutritional attributes of fresh potatoes. Hence upon completion, this information will be made available for the industry to engage and educate customers. It is a useful tool to distinguish and remind consumers about fresh potatoes amongst a cluttered and competitive marketplace and reverse the trend of declining consumption.

PT06022

The Bottom Line

- Health and nutritional claims on food products can have a major effect on availability and market demand
- Many countries are enforcing legislation forcing companies to prove their claims, creating an opportunity for potatoes
- The marketing development project will provide educational information for use in informing the consumer

Further information can be found at www.ausveg.com.au/levy-payers/login.cfm



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New report to provide benchmarks for improved growth

Recently completed research has provided growers with a valuable measuring tool. David Jarwood discovers how.

Chris Russell, Senior Research & Development Agronomist with Simplot Australia, has put together a comprehensive collection of data that Australian potato growers can compare their results to and look for possible improvements on their practices.

Farmers can observe their conditions and compare them against various growing conditions encountered during an extensive four-year study in Tasmania to work out exactly what adjustments to make regarding irrigation and fertiliser for maximum results.

Chris conducted field trial in different regions of Tasmania and has closely scrutinised the results in order to collate the data into a detailed report.

The report examines the critical factors for successful crops – irrigation, plant populations, soil pH, NPK, rotation periods and planting dates.

According to Chris good record keeping is vital when establishing what improvements and alterations are needed on the farm.

“You need to be able to observe what’s happening with the crop, and then be able to work out why it is happening,” he said.

And it is from these records that farmers can go through the report and work out exactly where they fit among the different field trial sites and ascertain what improvements they could make.

Chris said the four-year study did not produce the one definitive answer for successful spud growing, as this would not apply to every different soil, climate and nutrient conditions throughout Australia’s potato growing regions.

Rather the report provides many suggestions and approaches for farmers depending on their individual circumstances.

He said the report would allow farmers to compare their own soil types and tests with the top five producing crops in the trial.



“They can then make any fertiliser adjustments and compare their irrigation to what produced the best results,” he said.

During the trials, which looked mainly at the Russet Burbank – the most common potato grown in Tasmania, readings were taken on soil and air temperatures, soil moisture level, and the types of fertilisers applied and amounts used. Every two weeks the insect and disease presence was also recorded.

Conducting field trials can be a tricky business, as they are open to the vagaries of the weather. Chris said in the four years of the trial the research team had to put up with many extremes in the weather.

In the first year severe winds caused significant damage, the following year the crops were inundated with too much rain, and then the following season was a drought.

So to get some consistent results the data was “seasonalised” so as to compensate for the extremes in the weather.

Chris cautioned farmers from using these or any results to implement wholesale changes to their operation.

“Making major changes to an already successful approach can be a big risk,” he said.

“The best idea is to trial new ideas on a small area before extending to larger areas.”

Chris said that one of the things to come out of the program was the need for farmers to find the right balance in their growing and to look beyond simply adding more fertiliser in the hope that that would see improved yield and quality.

“There is no guarantee that simply putting extra fertiliser on will get good results,” he said.

“Farmers need to take a hands-on approach with their farming to understand what is happening to the crop, and get dirty to see how deep the roots are growing.”

Chris said the root depth would give a good indication as to the level of compaction of the soil. He said normal root growth was about 40 centimetres, but with a good soil structure a root depth of up 1.5 metres was possible.

“Compaction is an area that we don’t yet have a good handle on in potatoes locally,” he said.

“Balancing the soil will achieve better root development and then more productive and stronger plants.

“It is a major area for improvement and gives us a number of advantages with the roots getting deeper than they normally do. This would allow the plants to cope with excessive heat and enable access moisture and nutrients at a deeper level.”

Chris said increasing organic matter was an important way to improve the soil structure – “get the nutrient levels at the best possible rates”.



He said other key ways to minimise soil compaction were:

- No excess tillage,
- Minimal ground preparation,
- Work the soil when the moisture level is right.

While the issue of soil compaction was dealt with in the report, it is the area that Chris plans to investigate further.

He is working with the New Zealand Crop and Food Research, an organisation that has done extensive work in this area and has developed a computer system – the Potato Calculator – that can estimate the root depth and crop performance from the soil type/condition and other parameters.

“Spuds are such an interesting crop because there are so many things that you can look at,” Chris said.

PT05027

The Bottom Line

- Field data on successful crops, mainly Russet Burbanks, is now available for Tasmanian growers to compare with their own crops
- Data is available on irrigation, plant population, soil nutrient levels, rotation periods and planting dates

Further information can be found at www.aveg.com.au/levy-payers/login.cfm





Dr Sarah Collins
(right) on the
PCN trail

Fighting for freedom from potato cyst nematode

Since 2005, researchers in Western Australia have been conducting a state-wide survey for potato cyst nematode, in the hopes of proving its eradication.

Youna Angevin-Castro investigates.

Western Australia may soon become the world's first potato growing region to be proven and declared completely free of potato cyst nematode (PCN), as researchers from the Department of Agriculture and Food, Western Australia (DAFWA) work towards providing the evidence necessary to pronounce Western Australian Area Freedom.

Potato cyst nematode (*Globodera rostochiensis*), a serious potato pest affecting potato crops worldwide, was first identified in Western Australia in the mid-1980's. The disease is identified by the presence of small pin-head sized cysts containing hundreds

of nematode eggs, and leads to crop destruction when the eggs hatch, and the growing nematodes feed on the plant roots.

"PCN was only ever found on six properties in the Perth metropolitan area between 1986 and 1989," said research officer, Dr Sarah Collins.

"At the time they did such a good job of sanitising and placing restrictions within the exclusion zones of those areas, that PCN has never been detected since."

Despite this, for the last two decades, growers in Western Australia have been subject to rigorous monitoring and testing protocols, designed to eradicate the nematode, and protect local and export trade.

"Currently, all growers in WA are required to conduct tests if they wish to send their crops internationally, which is a costly exercise. In addition, growers within the exclusion zones are required to grow PCN resistant varieties, just in case there is a recurrence."

Since July 2005, Sarah has been working within the nematology group at DAFWA to gather conclusive evidence that PCN has been eradicated from Western Australia. Working under the supervision of Senior Nematologist Dr Vivien Vanstone, Sarah

has travelled across the state collecting soil samples from each potato growing district in the State.

As she visits growers' properties, Sarah selects the most "interesting" paddock from which to collect her samples. This is usually identified by low crop rotation, the use of PCN susceptible varieties, and whether or not the grower uses nematicides. Using a 5x5m grid, she collects 400 soil samples per hectare, creating bulk samples of 20kg per hectare.

"Most of the sampling is now complete, and the samples will be processed to remove the organic fraction of the soil where PCN resides. The next step will be to conduct a molecular test on these organic samples to detect the presence of PCN."

As part of the project, Sarah is working to develop a new molecular testing kit which will identify very low levels of PCN in large soil samples.

"This is probably one of the more challenging aspects of the project. We have set very high standards for ourselves by essentially trying to detect 'zero' levels of PCN," Sarah said

"To put this into perspective, the test we are developing is looking to identify a very small number of cysts per hectare.

"In the field, by the time a PCN-affected paddock gets to the point of being visually identifiable through crop losses, tests indicate there are 10 million cysts per acre [0.4 hectares], which is equivalent to seven years of infection."

With the transport of PCN-infected material into WA being strictly prohibited, one of Sarah's challenges has been to develop the molecular test without access to the nematode.

"We've worked around this by using another nematode, cereal cyst nematode (CCN), as a model system. CCN has the same growing characteristics as PCN, and we have developed genetic markers for CCN, which allow us to identify its presence. Once the test is up and running, we'll take it to New Zealand, where we can test its effectiveness on PCN."

If Sarah is able to supply the necessary evidence to declare Area Freedom, Western Australia will become the only territory worldwide to be officially declared free of PCN.

"What we are trying to do is quite novel," Sarah said. "Overseas, in Holland and the United Kingdom, where PCN is quite extensive, they have taken a different approach. Rather than seeking to eradicate the disease, they choose to work with it - using resistant varieties, crop rotations - to the point where it doesn't impact their production.

"Not only is it great international prowess for Western Australia to prove Area Freedom, it also has great economic value to the industry. Seed potato growers will have access to export markets which were previously restricted," Sarah said.

Despite the extreme levels imposed by Area Freedom, Sarah is confident that she can provide the evidence to declare Western Australia free of PCN.

"Scientifically it is much more difficult to prove that something doesn't exist, than proving that it does, and 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.

"However all indications suggest that PCN has been eradicated in Western Australia, and the benefits for growers, both financially and in terms of international kudos, go a long way to justify the hard work."

PT04004

The Bottom Line

- Surveys have been undertaken to prove WA is free of PCN
- A new molecular testing kit is being developed to identify very low levels of PCN in soil
- If the work is successful, WA will become the only territory in the world to be officially declared free of PCN

Further information can be found at www.ausveg.com.au/levy-payers/login.cfm



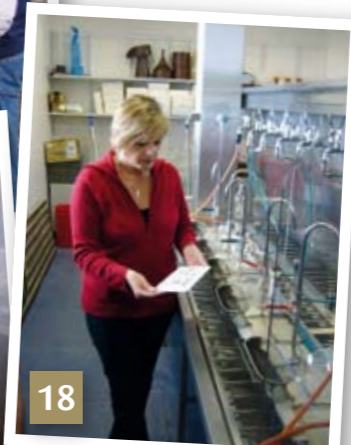
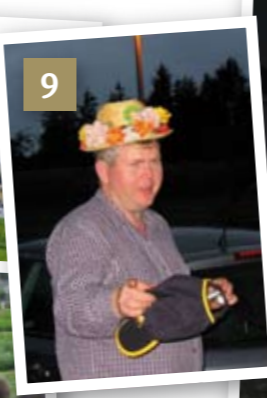
Talkin' tatties in Scotland

Dr Nigel Crump takes a look at Scottish potato production on a recent trip to the UK.

Potatoes or spuds as they are known in Australia, are referred to as "tatties" in Scotland. Despite the Scot's using a different name, there is a lot more in common with the Australian potato industry and also a lot that we can learn from one of the world's largest seed potato producing countries. As part of a trip to the UK, Nigel Crump travelled with Tony Slater, Des Jennings, Frank Rovers looking at different aspects of potato production. This trip involved attending potatoes in practice, meeting with seed and ware growers, packers, seed co-operatives, research organisations, and PCN affected growers. We also included a bit of fun along the way, such as Des Jennings getting kitted out in a Morris dancing outfit courtesy of Stuart Wale.

Potatoes in Practice is a one day event held by SCRI, SAC, CSC potato care and the British Potato Council. It has a range of field trials, demonstrations and seminars covering everything of the A to Z of potato production and storage. The day was attended by around 600 people. Des Jennings and Tony Slater bumped into Jack Dunnett at the Caithness Potatoes display. Jack is attributed with breeding varieties such as Nadine.

Frank and Des funded their own trip to the UK. Tony and Nigel were funded through the National Potato Levy via the PPR&D program. We are grateful to Stuart Wale (SAC), Alison Lees (SCRI), Finlay Dale (SCRI) and Gerry Saddler (SASA) for their input in helping organise our trip and ensuring it was a great success.



- 1 Potatoes in Practice 2007, the event had field displays, marquee information areas and seminars
- 2 Stuart Wale (SAC) talks on seed treatments
- 3 Des Jennings, Jack Dunnett and Tony Slater at PIP
- 4 Colin Backall from TLC mintubers produces over 50 varieties of potatoes
- 5 Connie Powell and Frank Rovers arrive at Potatoes and Practice - Wiping feet on Foot and Mouth disinfectant station
- 6 Dr John Bradshaw (SCRI) giving us an overview of the SCRI breeding program in a nutshell
- 7 Dr David Cooke talking to Tony Slater and Des Jennings about new strains of Late blight in the UK
- 8 Dr Stuart Wale from SAC showing us a seed grower's store. The growers that we visited all used positive ventilation (forced air) for drying potato prior to store. A difference in temperature between the potato and the air of 4°C or more can cause condensation on the surface of the tuber resulting in an increase in blemish diseases such as silver scurf and reduced seed quality.
- 9 Nigel Crump watches as ...
- 10 Des does Morris dancing
- 11 Ware potatoes harvested in Scotland. The conditions were extremely wet
- 12 Frank and Des eye off a good potato crop
- 13 In the field with Stuart Wale and a seed grower discussion group. The discussion group were counting number of stems, size and number of tubers. In the discussion group growers were gaining know how from each other.
- 14 Crop monitoring with Stuart Wale. Assessing the yield of a crop sprayed down to suit market specifications.
- 15 Visiting packers - Taypack in Dundee
 - With an annual throughput of 140,000 tonnes, Taypack supplies 100 ASDA stores through 3 of their distribution depots, Taypack supplies approximately 40 per cent of the ASDA UK fresh potato business
 - Taypack operates a full traceability system which allows coding of individual packs to identify the grower and field where the product was grown through to the finished pack on shelf.
- 16 Luffness Mains farm manager Robert Harvey show us potato production on land with PCN. Land infested with PCN can still grow processing and ware crops in the UK - only seed production is restricted.
- 17 PCN testing at SASA in the UK is a similar process to what is done in Australia. Cysts are extracted from soil samples using the Fenwick can in which the cysts float and soil sinks
- 18 An additional flotation of the cysts using a "fish bowl" device improves the clarification of the sample. SASA are the certification body of the seed industry in Scotland.



Grampian Growers
 ■ Co-operative of seed growers
 ■ Produce and market 17-18,000 tonnes of seed potatoes.
 ■ Logie, Montrose, 35 miles south of Aberdeen





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



Year of the Spud launched by UN

The International Year of the Potato (IYP 2008) was officially launched on 18 October 2007 at the United Nations (UN) Headquarters in New York by the Director General

of the UN's Rome-based Food and Agricultural Organisation (FAO), Mr Jacques Diouf.

The official launching ceremony was held in conjunction with observation of World Food Day 2007, with the theme "Right to food". It was attended by high-ranking United Nations officials, representatives of country missions to the UN, members of the IYP Informal International Steering Committee, representatives of the US "potato community", and 300 schoolchildren from the Washington DC area.

The observance of IYP 2008 will provide an opportunity to raise awareness – among policy-makers, donors and the general public, especially young people – of the importance of the potato in particular, and agriculture in general, in addressing issues of global concern, such as food insecurity, malnutrition, poverty and threats to the environment.

"The international year will allow the UN to raise awareness of the potato and participate in activities in World Food Day," Jacques said, referring to the event on each October 16 to call for renewed actions to end chronic hunger affecting nearly 1 billion people around the world.

To alleviate hunger and poverty around the world, FAO and UN specialised agencies said food and agricultural production should be increased by 60 per cent over the current food availability, and the potato plays an important role.

The move to "increase awareness of the importance of the potato as a food in developing nations" was proposed by the UN's Rome-based Food and Agricultural Organisation (FAO) and adopted by the General Assembly in 2005.



Throughout 2008, the International Year of the Potato (IYP) will seek to underline the humble spud's role in improving food security and poverty alleviation while serving as a catalyst for information exchange and the initiation of medium and long-term programmes on potato development.

While consumption of potatoes has decreased in Europe, it has doubled over the last 40 years in developing countries, though the total remains less than a quarter of that in Europe.

China has become the world's top potato producer, ahead of Russia, Europe and the US, traditionally the biggest producers and consumers of the tuber. China and India alone produce a third of the world's potatoes.

Of the 315 million tonnes produced yearly, 162 million, or more than half, are now farmed in developing nations.



(L-R) The Crawford Fund's Bob Clements, Dr Pamela Anderson and DPI Victoria's Tony Slater at DPI Toolangi.

Let them eat potatoes!

Potatoes are easy to take for granted, but in fact they are the most important root and tuber crop in the world, according to the International Potato Centre's Dr Pamela Anderson.

The humble potato holds enormous promise to contribute to meeting the needs of the developing world. In fact, the adjective "humble" is a complete misnomer. Picking up a bag of potatoes in the supermarket puts you directly in touch with a treasure trove of history. The potato did not come from Idaho, Ireland or Germany. Its origin stretches back 8,000 years, past 16th century scholars, Spanish conquistadors, the Inca civilization and pre-Columbian cultures to the shores of Lake Titicaca high up in the Andes.

Early Andean people first took the potato from the wild and started domesticating and adapting it to their needs on the freezing altiplano 4,000 metres above sea level in what is now Peru. Already adapted to the harsh environment, the tubers of the potato were a valuable source of food that freed the Andean peoples from hunger.

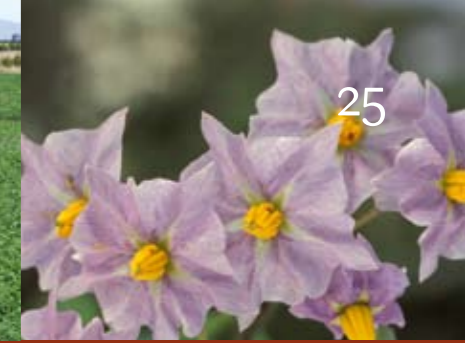
First recorded as being eaten by patient in hospital in Seville in Spain in 1753, the potato played a crucial role in freeing Europe's peasantry from hunger and providing cheap and nutritious food for the workers of the Industrial Revolution.

Today, it's grown in over 130 countries and over a billion worldwide eat it. The people of Belarus are the world champion potato eaters, eating 171.2 kg each per year.

China is currently the world's biggest producer, growing over 70 million tonnes per year.

Almost 213 million tonnes of potato are grown to eat every year, making it the third most important food crop in the world after rice and wheat. More than half of the global output comes from developing countries.

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

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Potatoes are ideally suited to places where land is limited and labor is abundant, conditions found in much of the developing world. What's more, the potato yields more nutritious food more quickly on less land and in harsher climates than any other major crop. They produce more food per unit of water than any other major crop and they are an excellent source of complex carbohydrates, which release their energy slowly and keep the blood sugar level steadier for longer.

One of the potato's secrets is its adaptability. Farmers in the tropics can harvest them within 50 days of planting – a third of the time it takes in colder climates. In highland areas of southern China and Vietnam, the potato is emerging as an off-season crop; planted in rotation with rice and maize, it brings relatively high prices at the market. Similarly, in the lowlands of Bangladesh and eastern India it's importance as a winter cash crop is rising dramatically. And in China, the tuber is increasingly being viewed by the state as an alternative crop to feed its rice-dependent population. As farmland there continues to be threatened by urbanization, the potato indeed could become an important food crop, as it can be planted in dry areas not suitable for rice and is easy and cheap to produce.

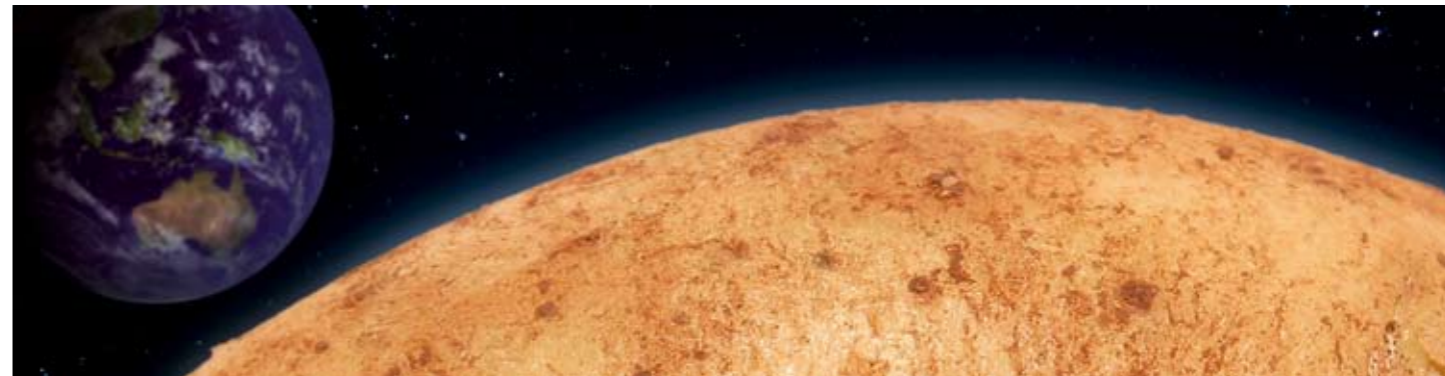
For poor potato farmers in developing countries, improving yields is essential to their ability to achieve economic independence and food security. While average yields in North America and western Europe often reach 40 tonnes per hectare, yields in developing countries are usually below 20 tonnes

per hectare - a persistent and sizable yield gap. I represent the International Potato Center, which is based in Peru. We seek to reduce poverty and achieve food security on a sustained basis in developing countries through scientific research and related activities on potato, sweetpotato and other root and tuber crops.

We need to develop sustainable and robust systems to support developing country agriculture, as well as to improve the access of people in the developing countries to the benefits of new knowledge and technologies. The United Nations has recognized the contribution that the potato can make by declaring 2008 the International Year of the Potato, providing us with the opportunity to increase the public's awareness of the importance of this crop. During this Year, my centre will be working closely with its collaborating institutions and donors to highlight the importance of the contribution that the potato can make.

The potato has come a long way since it was blamed for causing everything from lust to leprosy, yet many misconceptions—and a lack of information—still surround the crop. We firmly believe that this healthy tuber will increasingly play a vital role in alleviating hunger and improving the livelihoods and health of different populations around the world. In this way we can contribute to achieving fair, healthy and sustainable human development.

Dr Pamela K. Anderson is the Director General of the International Potato Center in Peru.



Planet Potato

As the start of the year-long United Nations homage to the potato draws close and the program of events finalised, it is the perfect time to examine what exactly other countries have prepared to help celebrate the International Year of the Potato 2008 (IYP 2008). Matt Wickham takes a look into what's been planned in two distinctly different markets; South Africa and New Zealand.

Potatoes South Africa's (SA) marketing objectives for 2008 are to positively influence potato consumption and reposition potatoes in the mind of the South African consumer. Potatoes SA has in recognising the International Year the Potato aligned their projects with the theme and purpose of the occasion. They aim to inform consumers and influence perceptions about potatoes by targeting dietitians, nutritionists, fitness and diet companies.

The hub of the Potatoes SA campaign will be the continued development of their consumer website. The website will be used to communicate the IYP 2008 key messages and encourage consumers to participate in the planned events and competitions. National in-store promotions with selected retail groups in South Africa will target consumers using interactive competitions and in-store demonstrations. Important nutritional and potato facts will be communicated through posters, promotional material and leaflets at point of sale.

Potatoes SA have an exciting widespread media awareness program planned. Television, radio, newspapers and magazines will all be employed to boost the profile of the potato. A distinctive TV commercial with a strong emphasis on the Year of the Potato will stress the nutritional value of potatoes and its versatility, a fantastic way to generate expansive appreciation. Further hype will be cultivated through press releases, campaigns and media relations.

Schools will also be targeted as part of the celebrating events. In 2008 South African children will have the opportunity to enter an inter-school competition that awards prizes for the school that grows the best potato crop. While the kids plant

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The International Potato Centre



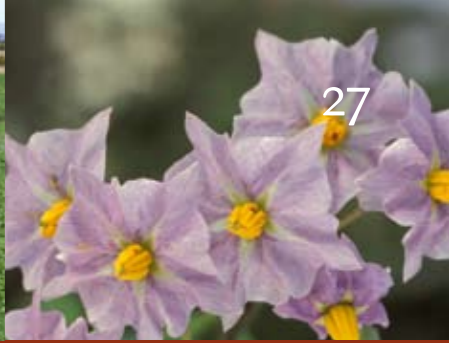
Based in Peru, the International Potato Center (known by its Spanish acronym, CIP) seeks to reduce poverty and achieve food security on a sustained basis in developing countries through scientific research and related activities on potato, sweetpotato, other root and tuber crops, and on the improved management of natural resources in the Andes and other mountain areas.

CIP headquarters are in La Molina, outside of Lima, Peru's capital, in an irrigated coastal valley. CIP also has experimental stations in Huancayo in the high Andes and in San Ramón on the eastern, rainforest-covered slopes, taking advantage of

Peru's varied geography and climate. The Center has another high Andes experiment station in Quito, Ecuador, and a worldwide network of regional offices and collaborators.

CIP has recruited an international team of scientists from 25 countries, supported by nationally recruited staff. In its first year of operation, CIP was funded by five donors. It is now funded by over 40 donors.

CIP is a member of the Alliance of the 15 centers of the Consultative Group on International Agricultural Research (CGIAR) and so receives its principal funding from the 58 governments, private foundations and international and regional organizations that constitute the CGIAR.



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and grow their own spuds, using educational packs, posters and colouring books they learn about the history and the importance of the potato. Some schools will even be lucky enough to have a visit from 'Mr. Spuddy', Potatoes SA's mascot!

Additional communication for the IYP 2008 will continue through regional Potato shows and festivals. Potatoes SA sponsors the events and provides promotional material to drive the message. It is an opportunity to advertise the brand and image of the Potatoes SA and of course the International celebration. Food and wine shows will also be targeted, only with a slightly more elegant edge. Information on cooking tips, potato facts and different variety characteristics are always on high demand at these types of exhibitions.

Lastly, Potatoes SA will aim to take advantage of the well known 5-a-day campaign. 5-a-Day conducts independent promotions aimed at increasing consumption of fruit and vegetables within the country. As the IYP 2008 and Potatoes SA focus on the nutritional benefits of the potato, joining the 5-a-day program only adds credibility and scope to the campaign.

South Africa is one of the world leaders in promoting potatoes and they have certainly attempted to capture and build upon the momentum behind the International Year of the Potato.

New Zealand has a very different market to South Africa with only a population of four million people. However NZ are very active in promoting tubers and have seized the once in a lifetime opportunity to work with the United Nations to underline potatoes.

Horticulture NZ have several strategies planned for the IYP 2008. Firstly they also plan to target schools to promote the message. School activities include teaching children (in about a thousand schools) to grow potatoes and how to prepare them. The children will learn important facts and how healthy spuds are.

A special potato cookbook is planned to encourage people to use spuds at home and teach those in the food service industry the best cooking methods.

NZ are also working with the fast food industry to encourage the reduction of fat in deep fried chips. They have a strategy to remove 2500 tonnes of fat from the New Zealand food supply, which has the potential to have a huge impact on the population given Kiwi's eat 7 million serves of deep fried potatoes per week. This project is in conjunction with the New Zealand Ministry of Health and other industry groups. An internet site will be developed to launch an interactive programme that highlights best frying practice.

Finally, NZ also have a strategy with regional health camps to help disadvantaged children understand the role of potatoes in a healthy well-balanced diet and to pass on cooking skills.

The United Nations has recognised the importance of potatoes and is striving to educate and promote the value of this crop. So, while plans to celebrate the International Year of the Potato may vary between different countries, potato messages are consistent. Nutritional, versatile, popular and delicious.

International expert attends Melbourne potato forum

Dr Pamela Anderson, Director General of the International Potato Center (CIP), was the key note speaker at a Potato Forum held at the University of Melbourne on the 20 November, 2007. In her presentation, she discussed global and regional potato industry issues, trends for potatoes and CIP's global research programme. The forum included presentations by Dolf de Boer and Tony Slater from DPI Victoria and Dr Richard Roush from the University.

Dr Anderson is a leading expert on emerging plant diseases. Her research has also included extensive work in agricultural entomology and plant virus epidemiology related to food security and income generation for resource-poor populations.

CIP is currently linked to DPIV through an Australian Centre for International Agricultural Research (ACIAR) project on the Management of Potato Late Blight in Papua New Guinea.

While in Victoria, Dr Anderson visited DPI Bundoora, hosted by John Forster, and DPI Toolangi where she met DPIV staff involved in the potato breeding and disease management programs. At Toolangi, Dr Anderson discussed with staff potential opportunities for collaborative work relating to biosecurity issues for the Australian potato industry and potato disease threats in South East Asian countries.

Dr Anderson's visit to Australia was hosted by the Crawford Fund, which funds training programs for farmers and agricultural specialists from developing countries. The Crawford Fund is an initiative of the Australian Academy of Technological Sciences and Engineering.

Letter from the UK

In the first update of a regular insight into the UK industry, Stuart Wale of the Scottish Agricultural College (SAC), Aberdeen takes a look at the state of the UK potato industry through 2007.

No two seasons are the same! In 2006, Europe suffered a season-long drought (or to Australian readers our version of a drought) which resulted in shortfalls in production and generally good prices. 2007 couldn't have been more different. Whilst April and early May brought a warm dry spring and enabled almost the entire crop to be planted early in an uninterrupted spell, from June to early August the heavens opened and it never seemed to stop raining. Some 2-3 times the normal amount of rainfall fell during this period. Fields remained waterlogged for weeks and some were flooded completely.

Of course, Britain is climatically diverse and different parts suffered worse than others. Unusually, Scotland fared much better than England. The downsides of all the rain were multiple. At worst, there was extensive rotting where tubers sat in water for weeks. More typically, the wet conditions had a major effect on tuber quality

The effect of the rain on yield was variable. Wet years are always the best years for yield but in the worst affected crops - including many processing and pre-packing crops - not only was growth affected and yield down on average but the proportion of tubers requiring grading out was much higher. The main reasons were rots, cracking and greens. Some pack houses reported 40 per cent losses at grading out.

Storability of many crops has been suspect and off-loading of stocks that went store onto the market pre-Christmas could well affect prices in the short term. Company agronomists have been evaluating stocks intensively to assess whether they will store into the New Year. Anyone with free-market potatoes of good



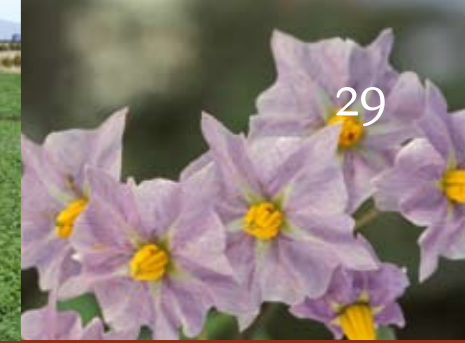
Yorkshire 2007. An irrigation pipe laid out in May and never used.

quality that will store well should get a good price, perhaps a very good price.

Some processing growers were so short of tonnage to meet contracts. With little on the free market available to buy, they are likely to make substantial losses.

Rampant potato blight

During the wet part of the season, potato blight went rampant. Favourable weather (minimum temperature of 10oC and prolonged high humidity) for this disease came early and was sustained for two months. Normally, a regular blight fungicide spray programme can keep the disease in check but the continued wet weather meant growers were unable, at times, to even drive a vehicle through their crops (there was many a tale of sprayers stranded in fields!). With extended spray intervals, blight took hold and we were always chasing our tails. With blight established, when ground conditions permitted, growers were spraying susceptible varieties every 3-4 days. In the end some growers sprayed against blight 20 times, some desiccated their crops early. Fungicide spray costs were frequently double.



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

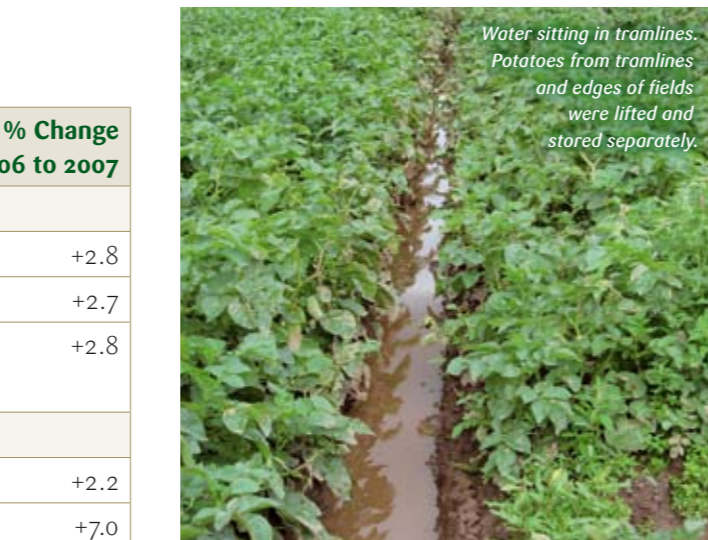
Table: Great Britain area, yield and production 2005 to provisional forecast for 2007

| | 2007p | 2006 | 2005 | % Change 2006 to 2007 |
|------------------------------|--------|--------|--------|--------------------------|
| BPC Area (ha) | | | | |
| GB registered growers | 122800 | 119500 | 116600 | +2.8 |
| Unregistered (small) growers | 7958 | 7749 | 9311 | +2.7 |
| GB Total | 130758 | 127249 | 125911 | +2.8 |
| Defra Census (ha) | | | | |
| England | 108335 | 106003 | 102410 | +2.2 |
| Wales | 2120 | 1981 | 2190 | +7.0 |
| Scotland | 29450 | 28180 | 27830 | +4.5 |
| GB Total | 139905 | 136164 | 132430 | 2.7 |
| Av yield (t/ha) | | | | |
| GB planted | 44.43 | 43.44 | 44.94 | +2.3 |
| GB Production ('000t) | | | | |
| | 5810 | 5528 | 5659 | +5.1 |
| Av price (£/t) | | | | |
| Maincrop average | 100 | 142.9 | 107.7 | -30.0 |
| Free-buy average | 100 | 160.1 | 111.0 | -37.5 |

Sources: BPC (British Potato Council), Defra (Department of Food and Rural Affairs)

Fears were rife in August that tuber blight would be particularly severe. These fears were not allayed when it was realised a great deal of the stock of the best blight fungicides was diverted to protect the more valuable vineyard crops on continental Europe.

In the event, just as a stream of Australian visitors came to the UK in August, the rain stopped and bizarrely dry weather continued right through to November. The feared tuber blight never materialised, or was limited in extent, and lifting took place in perfect conditions. Like planting, harvest was virtually unbroken. The only difficulties were that the soil became so dry that bruising risk increased – but on the whole no-one complained too much after the wet summer.



Water sitting in tramlines. Potatoes from tramlines and edges of fields were lifted and stored separately.

Over - or under-supply?

Every year in the spring, there is a great deal of crystal ball gazing and scratching of the head to determine what the acreage planted is. Of course, some estimates are issued but until final figures are released there is always a large room for error. In the event areas were up by around 2.5 per cent (see Table). Of course, what happens in the rest of Western Europe is also important as success or failure of production here can impact on the home market greatly. This year, Holland, France and Germany suffered with wet conditions as badly as the UK.

After the area is confirmed comes the speculation about total yield and quality. This year, even though yield and total production are up, the grading losses will once again see demand probably out of balance with supply and prices should be favourable for those who managed to avoid the worst ravages of the season and hold the crop well in store.

In the seed sector, Scotland had an excellent year in 2006 and the omens are good for 2007. Of course the Dutch dominate the seed export market in Europe, the Mediterranean and North Africa (by almost a factor of 10 over the UK) but, steadily, the export trade from the UK, Scotland mostly, is building. We can be thankful that we do not have some of the quarantine diseases that Holland have had to face in recent years (Brown rot, Ring rot and *Erwinia chrysanthemi*) – much touching of wood all round.

Research in commerce bearing fruit

It is a surprising fact that many of the areas of research that are being carried out in the UK, funded largely by the British Potato Council, are also supported in Australia. These include diagnostics and studies on specific diseases such as black dot, common scab and powdery scab. In the UK commercial companies are also active in research and their activities have created a lot of interest. Take for example the use of ethylene as a sprout suppressant.

CIPC has been the mainstay of sprout control in long term storage of processing crops and, to an extent, fresh market crops. A maximum residue limit (MRL) of 10 ppm was introduced in April 2007 and considerable activity has been taken to ensure more effective and uniform treatment by CIPC – notably by BPC funded R&D at its own storage research centre at Sutton Bridge. However, supermarkets are pressing to limit CIPC use in fresh production at least. When Greenvale AP, the largest potato company in the UK, introduced the idea of using ethylene into stores as a sprout suppressant for the fresh potato sector, there was much interest. As a 'natural' chemical which is already present in the potato, ethylene would seem a good option. The use of ethylene was brought over from work in North America. A second company soon appeared on the market promoting ethylene, BioFresh. Unlike Greenvale who generate ethylene on demand from ethanol, BioFresh use ethylene from pressurised cylinders.

In the best British fashion, uptake has been slow but steady. There were issues to sort out, change in texture and flavour in certain varieties, for example. But as time proceeds it seems likely that this sprout suppressant will become more popular. Of course, there are very many excellent refrigerated stores and low temperatures remains a key part in sprout control but, correctly applied, ethylene does avoid many of the residue issues that CIPC brings. In the processing sector, uptake of ethylene as a sprout suppressant is virtually non-existent because of the effect on fry colour. However, different ways of introducing the gas may yet see some uptake by processors.



Patches of potato late blight desiccated with Reglone to reduce the risk of spread within the crop.

Market pressures affecting potatoes

As almost everywhere in Europe, the potato market is in the middle of change. Grower numbers have steadily fallen and acreage is rising for those left. But there are new and, unexpected, pressures now for growers who are on the margins of profitability to get out of potatoes. These pressures come from the sudden rise in cereal prices and from increases in production costs. Cereal yields of 10 t/ha or more in winter wheat, and not far short of that in winter barley, are readily achievable. Cereals are much more straightforward to grow and most farmers already have sufficient equipment to expand in acreage. Why bother with a high risk crop like potatoes when a good margin can be made from cereals – especially now the grain price has more than doubled?

It is too early to say whether there will be a substantial move out of potatoes. Many of those growing potatoes are in it for the long term, have invested in the enterprise heavily and are committed to the crop. For those considering a shift out of potatoes, there is always the worry that cereal prices may not stay at the current unprecedented levels for long. Only time will tell. Perhaps by the time of the next letter from the UK we will have a better idea.

Until then we are all off to British Potato 2007, the two-day BPC event no person interested in potatoes can afford to miss. It will draw a crowd of, perhaps, 5000-6000 visitors and is the GB shop window event.

The business of climate change

There has been much talk about the impact of climate change on Australian agriculture. Most of the talk has centred around changing weather patterns, the impact on the supply of irrigation water and the best location for different forms of agriculture. But there is another deep and less understood impact of climate change which has the potential to have a major impact on potato growers' incomes. Proving a commitment to tackling the issue of climate change will impact on the ability to access markets, according to AUSVEG's Economic Policy and Research Manager, Ian James.

Just another fad you might say. And what's all this gobbledegook about food miles, carbon footprints and greenhouse gas emissions from potato growing? These people are out in cuckoo land. This is not for me to judge. But as your economist, it is my responsibility to make you aware of the impact that this issue will have on your business. Make no mistake. Climate change is now a mainstream business issue. Professor Michael Porter writing in the October edition of the Harvard Business Review made the following statement "Periodically, major new forces dramatically reshape the business world - as globalisation and the information technology revolution have been doing for the past several decades. Climate change in its complexity and potential impact, may rival them both."

AUSVEG understands the implications of this issue on the industry and prior to the recent Federal Election lobbied for a \$4 million grant to provide a national audit of the potato and vegetable industry's carbon footprint. The incoming Government has promised \$130 million over four years to assist Australian agriculture to adapt and respond to climate change. Of this \$60 million will be for a "Climate Change Adaptation Partnerships Program." AUSVEG will be seeking to access this program on behalf of potato growers. As well, Matthew Wickham, Market Development Manager for AUSVEG is working on the implications climate change poses on marketing of potatoes.

But what is a carbon footprint and what relevance does it have to me growing spuds? The first point to recognise, is that potato growing is a business whose bottom line is to make money. The second, is that there are global factors which now seriously impact on the rates of return derived from different business activities. The third, is that one of the major global concerns is rising world temperatures due to carbon emissions. The fourth, is the commitment by the world community to stave off climatic catastrophe by a commitment to tackling the issue of climate change as represented through the Kyoto protocol. And last, that business has recognized the marketing advantage in having a commitment to play a positive role in reducing carbon emissions.

Climate change is now a major political issue, especially so for higher income earners and generation Y. This is the end of the market where margins are greatest and where commitment to environmentally friendly practices is likely to return the biggest dividends. The corporate sector, and importantly for growers, the supermarket chains are very aware of the impact that climate change issues are having on consumer attitudes and need I say profitability. There will need to be an industry commitment in partnership with supply line participants in establishing a carbon footprint for the industry. And if you are expecting that supermarkets in Australia will take up the full cost of the potato industry proving its environmental credentials, think again.

So what do growers need to know? Awareness of the terminology and issues surrounding the business side of climate change is a good starting point.

Food Miles

The term food miles is a term to describe the distance that food travels from producer to consumer. This has been a big issue in the UK, Germany and to a lesser extent the other European Union members and is now finding voice in Japan and the U.S.A. In simple terms, proponents argue that to be environmentally responsible consumers should buy local product and reject food from distance sources such as Australia because the further food travels the more energy is consumed, the more greenhouse gases are emitted and the environmental damage greater. Economists intuitively smelt a protectionist rat dressed up in green clothing. Recently a number of studies have shown that the carbon emissions associated with long distance transport are less than the emissions from the transport of local product to market and that in any case the carbon emissions associated with the intensive nature of agriculture in Europe were greater than those in agriculture exporting countries such as Australia. Nonetheless, it appears to have had an impact on consumers. Consumption of potatoes grown by local producers in the U.K. is on the rise and now outranks the consumption of pasta and rice which is imported.

Carbon footprints

The food miles issue is still having a powerful impact in the media and probably amongst some consumers but the supermarkets and government authorities have moved on from this to the concept of carbon foot printing. This requires an industry to demonstrate the impact on the environment from grower to consumer and to provide evidence of a commitment by the industry to reduce its carbon emissions.

Supermarkets in the UK are taking the lead. For instance, Tesco is investing over one billion dollars to ensure that all products in their supermarkets receive a carbon rating; Marks and Spencer are investing \$450 million to reduce its carbon footprint by 80 per cent over five years. And a carbon rating and labeling scheme is being trialled which will require labels stating the carbon dioxide emitted during the life cycle of the food item and requiring the producer to commit to reducing their carbon footprint.

Common Agricultural Policy

There will be major changes to the way potatoes are treated under the Common Agricultural Policy (CAP) in the European Union from next year. Under the reform to the CAP announced in 2003 farmers receive a single farm payment rather than a subsidy for production. The vegetable sector will be integrated into this framework over a five year transitional period. Climate change issues will be included as part of this payment. European farmers will be required to audit their farms to measure the carbon footprint and access to the payment will depend on reducing this footprint. Once an audit has occurred it becomes a powerful tool to use against other nations and virtually forces competitors to undertake their own carbon footprint.



In short, climate change is moving rapidly from being an issue to an integral part of doing business. In the end it's a business decision as to how seriously you as a grower will take the issue. But there are obvious benefits for the Australian potato industry in being in front of the pack on carbon foot printing rather than look back and moan the loss of markets.



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CEO's message

As the year draws to a close it is a good time to reflect that despite the hardships climate has placed on the potato industry, the spirit of growers on the whole remains strong.

With this feeling, the AUSVEG Potato Group, a sub committee of the Board, endorsed a consumer marketing campaign to be conducted along side the declared 2008 International Year of the Potato. An exciting year long campaign has been developed to debunk some of the negative myths about potatoes and encourage people to make potatoes a regular part of their daily healthy diet.

The campaign involves activities such as celebrity ambassadorship, nutritionist endorsement, potato website, media campaign, events, a school competition, potato recipe book and more. Watch this space as spuds become super.

A sponsorship prospectus has been developed to fund the campaign and the response so far has been very positive. Expressions of interest to sponsor close by the end of January. More details of the campaign can be found by visiting www.ausveg.com.au or by contacting the Melbourne office. The campaign provides excellent branding and relationship opportunities.

I would also like to welcome the new Federal Minister of Agriculture, Tony Burke. AUSVEG looks forward to working closely to achieve the goals of the potato industry. Our election

platform and the policies of the new government seem well aligned with key issues such as climate change, health and high speed broadband all high on the agenda.

Nominations for the 2008 Australian Vegetable Industry Awards are now open. I am sure there are many deserving potato industry members so please put their names forward. The awards presentations will be held at the WA industry's 60th Anniversary dinner to be held in Perth on 31 May, which is an industry night not to be missed.

In other news, the final round of consultations for the handling of security sensitive chemicals are to be conducted starting February and ending in March next year. AUSVEG has been a member of the Prime Minister and Cabinet working party on the issue and will ensure potato growers provide their view.

Best wishes to you and your families for the festive season and I look forward to International Year of the Potato celebrations in 2008!



John Roach

Chief Executive Officer
AUSVEG
Representing Australian potato and vegetable growers

A good start ... but don't stop worrying!

STO Director Tom Rafferty takes a look at Sustainable Distribution and how it affects the supply chain.



Late last year, Horticulture Australia Ltd provided some funding for travel to a supply chain conference in London. There were some big hitters present, and I mean big. Senior Managers from Tesco, Asda (Wal Mart's UK outfit) and Morrison's all gave presentations.

There was the usual palaver that you get from big retail ... low prices, squeezing supplier's harder, taking out supply chain costs, etc. The importance of fresh produce received an honourable mention; this might have had something to do with the very big margins that fresh produce generates, but we didn't talk about that (talking about money is rather lower class, old chap!).

Interestingly enough, a real big topic that got a lot of coverage was "Sustainable Distribution". Sustainable Distribution is coming to a supermarket near you. This is despite the fact that in Australia, we are enjoying non-core-global-warming! It isn't happening, it's not getting drier, it's not getting hotter and we're not running out of water! There ... I feel better for getting that out of the way.

However, other parts of the world - take the UK for example - appear to be suffering with core-global-warming. Or maybe the weather God's are on holiday on a Spanish costa! I'm not a meteorologist or a climate change specialist, but it seems that the weather over there is getting, as Alice cried, "Curiouser and curiouser!"

Meanwhile, what is Sustainable Distribution? It is the "new age" equivalent of regular distribution! Our British cousins have a plan called the Food Industry Sustainability Strategy (FISS) - we probably need a Produce Industry Sustainability Strategy, but I won't go there! Anyway, a key goal of the FISS is "to reduce the economic, environmental and social impacts of food transport ... by 20 per cent by 2012."

By 2012, we may be well into our second term of a Labor Government and should be in a better position to understand the core-ness of our environmental issues. If it is "core", rather than "non-core" we might want to check out what they're doing in old Blighty.

The central issues that they (the FISS'ers) see are all to do about transport utilisation, or more correctly, mal-utilisation. The

solution will be to travel fewer miles and to travel "friendlier miles". I understand the former; the latter has me a little confused ... when your dealing with big retail, you rarely get that "friendly" feeling!

They have identified six key initiatives. Moving to larger capacity vehicles is high on the agenda. In the Australian context, we're pretty much already there, but the trucking industry is putting more pressure on government for even larger vehicles and less constraints on the large ones we already have.

Making the vehicles more fuel efficient is also on the drawing board. We'll see engine specifications changing and more attention paid to emission control. Also, they want to see more "out-of-hours" deliveries, at distribution centres (DC's) and at local stores. This raises a number of issues, especially if large vehicles are going to travel through suburban areas at all hours of the day and night. It will also mean that large retail will have to change their mode of operation and be more flexible with time-slotting at DC's. This may excite transport operators, but unless there is significant cultural change through out the supply chain, the queues will remain and the drivers will still be exhausted.

Other issues identified include vehicle telematics (remote monitoring of truck and driver), optimisation of logistics systems and transport collaboration.

The last point has real legs. In the UK, it is estimated that the food chain accounts for at least 22 per cent total of greenhouse gas emissions and 25 per cent of all heavy vehicle kilometres. Now, companies like Coca-Cola and Boots (a large pharmacy chain) are working on "collaborative green transport". In a pilot study they reckon they've taken 78 loads per week off the road. This equates to about 650,000 kms per year - that's more than 700 trips between Melbourne and Sydney.

So, what does it all mean to growers? In the long term, I suspect you'll have to consider the impact of your outputs. How do you get to market and what effect is that mechanism having on the environment. As if you hadn't enough to worry about!

Tom Rafferty is the Director of Supply Chain STO and can be contacted at 07 3843 5712, 0409 781 264 or tom@sto.au.com.



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INTERNATIONAL SPECIALISTS IN CROP NUTRITION

PPR&D Update



Workshop to Rile Rhizoctonia!!

Why is Rhizoctonia still a major issue to the Australian potato industry? What works in managing this disease, and what does not work? What can be done to improve the management of this disease? These were questions that needed to be addressed. Therefore, a two day technical workshop was held in Melbourne on 16-17 October to discuss Rhizoctonia of vegetable and potato crops. The objective of this workshop was to consolidate the existing knowledge on Rhizoctonia, identify gaps and issues regarding Rhizoctonia management and look at ways of improving the existing Rhizoctonia management strategies to reduce the impact of Rhizoctonia on crop yield and quality. The workshop was supported by the National Vegetable Levy through the IPM vegetable project.

The workshop was attended by 30 delegates made up of researchers, agri-chemical companies, processing companies, industry advisors and growers from around Australia. This was the first time that such a diverse range of industry experts had assembled to discuss this intractable disease of potatoes and vegetables. The attendees discussed the current knowledge and management of Rhizoctonia on a range of commodities including beans, brassica's, onions and potatoes. The workshop was a great success, thanks largely to the attendees for their involvement and active participation in the discussions.

What were the key messages?

Key practical messages from the workshop relevant to the potato industry were:

- When using fungicides, the correct rate and application method are critical
- Use good quality seed that is primed and ready to plant
- Avoid planting in cold, wet conditions. There is anecdotal evidence to suggest that potato plants with good vigour and growth tend to be at lower risk to attack by Rhizoctonia. Encouraging rapid emergence by shallow planting can also reduce the risk of Rhizoctonia
- Seed tuber treatments are effective in reducing Rhizoctonia that is carried on the seed piece, soil applied "in-furrow" treatments are effective in reducing Rhizoctonia that survives in the soil
- In high disease risk situations, consider using a seed treatment and soil treatment
- No one treatment is going to give 100 per cent control. Management of Rhizoctonia requires a multi-prong approach



A list of the fungicides that are registered for use on Rhizoctonia of potatoes is in the table below. Always check to label for recommended rates and method of application.

| Product name | Active Ingredient | Fungicide Group | Targets Rhizoctonia on the |
|--------------|-------------------|-----------------|---------------------------------|
| Amistar™ | Azoxystrobin | Group K | Soil |
| Maxim™ | Fludioxonil | Group L | Seed |
| Monceren™ | Pencycuron | Group X | Seed |
| Rizolex™ | Tolclofos-methyl | Group X | Soil |
| Rovral™ | Iprodione | Group B | Soil |
| Moncut™ | Flutolanil | Group G | Seed |

The workshop also identified areas that need to be addressed in order to improve the management of Rhizoctonia. These areas included:

- Improve the understanding of Rhizoctonia, the fungus itself. This included getting a better understanding of the different strains of Rhizoctonia that cause disease on potatoes and impact on management strategies
- Improve understanding of managing Rhizoctonia with improved soil health
- Improve the understanding of the impact of crop rotation on Rhizoctonia
- Conduct training and education, particularly on application methods, and the current best practice management strategies

These areas will be addressed in the development of future research and extension programs.

PPR&D Researchers



Growers show researchers tricks of the trade



Interaction with growers is one of the best parts of DPI Victoria Tonya Wiechel's job. Graham Gosper finds out why.

There are few work activities that Tonya Wiechel considers more rewarding than increasing her expertise about potato disease through discussions with growers.

"Researchers can all learn a lot from growers," she said. "Because they deal with crop and disease issues 24/7 growers offer valuable insights that can greatly enhance research efforts."

Tonya is a Plant Pathologist with the Department of Primary Industries Victoria (DPIV) Biosciences Research Unit based at Knoxfield on the outskirts of Melbourne.

She regards effective communication as vital to the success of industry efforts to combat disease. And that doesn't just mean a flow of information between researchers and growers. "Communication between growers is just as important," she said. "I regularly see the benefits of potato growers in a particular district getting together to identify, recognise and deal with disease problems."

Tonya has extensive experience in agriculture, completing a Ph.D on the blackleg disease of canola and has worked on diseases of grapevines before joining the Processing Potato R&D (PPR&D) program in 2004. Tonya is currently working with two PPR&D funded projects. One, led by DPIV scientist Nigel Crump, is examining soil improvements for control of potato diseases including common scab, powdery scab and Rhizoctonia. The other, led by SARDI Crop Pathology Unit leader Kathy Ophel-Keller, is developing DNA monitoring tools for soilborne diseases of potatoes.

Tonya has had a special interest in common scab since she received a grant to participate in a study of *Streptomyces*, the pathogen which causes the disease, while she was a research associate at Monash University. During the 3 years she has been at Knoxfield Tonya has isolated many cultures of the pathogen from potato growing areas across south-eastern Australia,

"With water identified as the key limiting factor for the industry, increasing the water use efficiency of potato varieties and production processes has become a key priority," Tonya said. "With that in mind researchers will need to discover more about the effect of drier soil profiles on the spread of common scab and other diseases. *Streptomyces* is already known to thrive in dry conditions and we may well see an increase in the level common scab disease across potato growing areas."

Tonya said her work at Knoxfield provides interesting variety that includes laboratory testing, field work and regular discussions with growers. She is also a supervisor for a program which allows students studying laboratory techniques from the nearby Box Hill Institute of TAFE to work with the research team during the year. "Each student is given a small project to work on," Tonya said. "With the help of the program we have made progress on the effect of symptom development in common scab disease, evaluated a large scale soil DNA extraction method from the UK and evaluated the effect of variety and *Streptomyces* strains on common scab symptom development. The program is another example of where effective communication can benefit the industry."

SPOTLIGHT ON:

Silver scurf

(*Helminthosporium solani*)



Common name

Silver scurf.

Scientific name

Helminthosporium solani.

Previously named *Spondylocladium atrovirens*.

What is silver scurf?

Silver scurf, caused by the fungus *Helminthosporium solani*, is one of the most common diseases in potato production areas of the world including Australia. Until recently it was considered to be one of the least important of the tuber diseases. However, the demand for washed, clean-skinned potatoes has put silver scurf and other blemishing diseases in the limelight. The disease significantly reduces the attractiveness and marketability of washed potatoes. It also reduces the quality of potato crisps because the diseased skin shows up as a dark discolouration on the edges of the crisps after cooking.

Symptoms of silver scurf

Silver scurf first appears on tubers as more or less round, brownish patches which increase in number when the tuber is severely affected, eventually coalescing and turning silvery in colour. The entire tuber surface can be covered with silver scurf. The fungus lives in the outermost cell layers of the skin of the tuber. The outer cells become detached allowing air to penetrate causing the silvery sheen. The affected skin is more permeable resulting in moisture loss and shrivelling of the skin. Generally, silver scurf does not affect crop growth, productivity or eating quality. However, severe infection can result in weight loss in stored tubers and severe shrivelling can reduce sprout vigour.

Managing silver scurf

The management of silver scurf involves the integration of cultural and chemical control strategies. Research in Europe has shown that minimising the build-up of silver scurf in successive generations of seed potatoes is the most important strategy in managing silver scurf.

Integrated Management

Hygiene

Preventing the contamination of elite seed stocks during handling and storage will help minimise the build-up of the disease from generation to generation.

Storage conditions

Silver scurf spreads extensively under relatively warm and humid conditions. Ensuring that tubers are allowed to dry as soon as possible after harvest helps prevent disease spread, especially if potatoes are harvested under wet conditions.

Time of harvest

Silver scurf continues to develop on tubers left in the ground after tops have died off. Harvesting as soon as practicable after plant senescence minimises the development of the disease on tubers.

Chemical treatments

Post-harvest fungicide treatments prevent the fungus from producing spores, thereby minimising build-up and spread in storage and the subsequent transmission from seed to daughter tubers.

Growers should look at rotating chemicals and not relying on a single control strategy. For example, moisture on the surface of potato tubers in store allows the germination spores and hence promote the development of disease. Preventing the formation of free moisture through use of positive (forced) ventilation and good store management can reduce the incidence of silver scurf in store.

Reference: Nigel Crump and Dolf de Boer



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



FEATURE – BIOLOGICAL CONTROL FOR POTATOES

Biological control is about using a living organism to control the growth and development of a pest or disease.

In some situations, the biocontrol agent is a natural enemy of the pest in its native range, but has been left behind when the pest moves to a new area. The biocontrol agent may just need to be introduced and will continue to control the pest. In other cases, the biocontrol agent is present at low levels in the pest population, but ongoing applications of the biocontrol agent may be needed to prevent the pest causing economic damage to a crop.

Three scientific papers describing various biocontrol agents for pests and diseases of potatoes are featured in this issue of Chips. In the first paper (Kearar & Sadeh), a parasitoid (*Copidosoma koehleri*) that controls potato tuber moth in the field in some countries was tested to see whether it could reduce moth populations in storage. During an 8-week storage period, tubers with controlled initial levels of moth infestation received 1-2 releases of adult parasitoids. For potatoes stored indoors, populations of the parasitoids increased and tuber moth populations were significantly reduced. However, tuber moth infestation still reached 100 per cent in both parasitoid-treated and untreated controls. In tubers stored outdoors, parasitised moths were rarely recovered, and infestation levels did not differ between treated and untreated heaps.

In the second paper (Slininger et al.), 18 patented bacterial strains were tested for their ability to suppress late blight disease caused by *Phytophthora infestans* (US-8, mating type A2) in wounded potato tubers. Disease suppression was evaluated after tubers were stored for 1 week at 15°C and 90 per cent relative humidity. Late blight was reduced by up to 60 per cent and four strains were selected for further testing. Suspensions of *P. infestans* were sprayed onto unwounded potatoes, followed by the bacterial treatments alone and in combination. The potatoes were stored for 4 weeks at 7.2°C and 95 per cent relative humidity. All treatments significantly reduced disease, ranging from 35-86 per cent in the first year to 35-91 per cent in the second year. Best control was achieved with the four strain mixture followed by individual treatments of two *Pseudomonas fluorescens* strains. These bacterial strains had also previously shown suppression of dry rot and sprouting, indicating that they have excellent potential in post-harvest treatment of stored potatoes.

The third paper (Johnson) evaluated suppression of silver scurf disease, caused by *Helminthosporium solani*, by the biological control agent 'Serenade ASO™'. Over 2 years Serenade ASO reduced both the incidence and the severity of silver scurf under low disease pressure and delayed the onset of silver scurf until 5 months of storage. At high disease pressure, only the severity of silver scurf was reduced by Serenade ASO.

The parasitoid *Copidosoma koehleri* provides limited control of the potato tuber moth, *Phthorimaea operculella*, in stored potatoes. Kearar & Sadeh (2007) *Biological Control* 42: 55-60.

Biological control of post-harvest late blight of potatoes. Slininger et al. (2007) *Biocontrol Science and Technology* 17: 647-663.

Evaluation of a biological agent for control of *Helminthosporium solani*. Johnson (2007) *Plant Pathology Journal (Faisalabad)* 6: 99-101.

Section One: Research Summaries

DISEASE CONTROL

Application of some natural compounds for management of potato late and early blights. A series of greenhouse and field experiments investigated antioxidants (mannitol, oxalic acid, citric acid and ascorbic acid), spermine, ornithine and antitranspirants (bio-Film, nu-Film and kaolin) as control agents for the foliar pathogens *Phytophthora infestans* (late blight) and *Alternaria solani* (early blight). In the field, applications of these compounds at the 3-4-leaf and the 10-leaf growth stages on Sponta potatoes decreased disease severity, the overall level of disease, and sporulation. The leaves of potatoes sprayed with some of the compounds had higher levels of chlorophyll-a, chlorophyll-b and carotenoid pigment than untreated leaves, and total tuber yield was increased by some compounds, in particular spermine. Haggag & El-Khair (2007) *Journal of Food, Agriculture & Environment* 5: 157-163.

Effect of strobilurin fungicides on control of early blight (*Alternaria solani*) and yield of potatoes grown under two N fertility regimes. Field trials were carried out over 2 years in Prince Edward Island, Canada. The two strobilurin analogs tested, azoxystrobin and pyraclostrobin, were linked to higher total tuber yield for Russet Burbank in 2003 and Shepody in 2004 compared with plots receiving no fungicides. However, no early blight was recorded in 2003, indicating that the response to the fungicides may have been due to physiological and developmental alterations. In 2004, early blight was severe and was suppressed by the fungicides in both cultivars and at both high and low nitrogen fertility regimes. There was no significant difference in total tuber yield between N fertility treatments, although the high N rate decreased disease in Russet Burbank control plots in 2004. MacDonald et al. (2007) *Phytoprotection* 88: 9-15.

Seed treatment application-timing options for control of *Fusarium* decay and sprout rot of cut seed pieces. Cut potato seedpieces were inoculated with *Fusarium sambucinum*, the causative agent of seedpiece decay and rotting of sprouts. Ten, 5 or 2 days prior to planting, seedpieces were treated with a commercially formulated mixture of fludioxonil plus mancozeb (Maxim MZ) or left untreated. The fungicide treatment at all three time-points significantly reduced the percentage of diseased sprouts per seedpiece and seedpiece decay, indicating that this can provide effective control of the disease. Wharton et al. (2007) *American Journal of Potato Research* 84: 237-244.

AGRONOMY – IRRIGATION AND SOIL COMPACTION

Water dynamics in drip and overhead sprinkler irrigated potato hills and development of dry zones. Time domain reflectometry (TDR) probes were installed into potato hills and water content was monitored every 15 minutes at various positions in the potato hill under drip and sprinkler irrigation regimes. Water content values within the centre of the potato hill, where there is the highest root density, were generally greater under drip than sprinkler irrigation. Concurrently, water

content values were lower in the furrow of drip than sprinkler irrigation. The difference between the two irrigation regimes in water content in the centre of the hill became more prominent as the growing season progressed. Cooley et al. (2007) *Hydrological Processes* 21: 2390-2399.

Response of potato tuber yield components to gel-polymer soil amendments and irrigation regimes. Field experiments were carried out at the Hatfield Experimental Farm of the University of Pretoria, South Africa, to investigate pure and fertiliser-fused gel-polymer formulations at four levels of soil moisture. Although fusing the fertiliser to the gel polymer did not improve potato tuber yields compared with standard fertiliser application, using the pure gel polymer did improve total and marketable tuber yield. Marketable tuber number and yield decreased as soil moisture depletion increased, and the incidence of common scab was inversely related to the irrigation frequency. Eiasu et al. (2007) *New Zealand Journal of Crop and Horticultural Science* 35: 25-31.

Effects of soil compaction in potato crops. The timing of planting of potato crops in spring means that there is potential for compaction in many soils. The use of powered cultivators to produce a fine seedbed increases the risk of soil compaction, and is both time and energy inefficient. A series of experiments in the UK showed that soil compaction had a range of physiological effects on potato crops, resulting in reduced tuber yields. Measurements established a relationship between rate of root penetration and soil resistance, and a survey of 602 commercial fields indicated that two-thirds had soil resistance values that would severely restrict root growth. This shallow root depth would lead to inefficient water and nutrient utilisation. It is suggested that there may be major yield advantages of delaying planting until the soil is dry to reduce losses caused by soil compaction. Stalham et al. (2007) *Journal of Agricultural Science* 145: 295-312.

NUTRITION

Determination of folate concentrations in diverse potato germplasm using a trienzyme extraction and a microbiological assay. Folate is an important dietary nutrient and deficiency can lead to birth defects. This study examined total folate concentrations of potato tubers from 67 cultivars, advanced breeding lines, or wild species. Highest folate concentrations tended to be found in coloured potatoes, and in general, folate content increased over a 7 month storage period. Goyer & Navarre (2007) *Journal of Agricultural and Food Chemistry* 55: 3523-3528.

Metabolic engineering of carotenoid levels for improvement of plants as food. Carotenoids are important in human health for normal vision and for preventing degenerative diseases and cancer. These coloured compounds are not produced by mammals and need to be included in the diet. Most major crops, including rice, wheat and potato, have low levels of carotenoids and efforts have been made to increase than through genetic modifications. More recently, potatoes with 'golden tubers' have been produced that contain very high levels of carotenoids. Diretto et al. (2007) *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources* 2: 10 p.

The effects of low-dose gamma irradiation and storage time on carotenoids, antioxidant activity, and phenolics in the potato cultivar Atlantic. Low-dose ionising irradiation is being considered to prevent shrinkage and sprouting of stored potatoes. Tubers were subjected to different levels of irradiation and stored at 20°C for 0, 10, 20, 75 or 110 days. The patterns of change in nutrient concentration during storage differed between nutrients, with some increasing and others decreasing. However, in general the effects of storage on nutrient content were much greater than the effects of low-dose

gamma irradiation. Blessington et al. (2007) *American Journal of Potato Research* 84: 125-131.

PROCESSING

Nutrient cycling in the vegetable processing industry: utilization of potato by-products. There is a huge amount of biological waste from potato processing and cull potatoes. In the past, solid waste and cull potatoes have been put into landfills or disposed of on agricultural land as a fertiliser, and liquid waste can be applied to agricultural land under strict environmental controls. However, recent research has shown that potato processing waste can be used as a high-quality animal feed, particularly in beef feedlots, replacing maize and barley without negative effects on growth or meat quality. In fact, efficiency of animal growth per unit diet intake even improved with diets of up to 80 per cent potato processing waste. Charmley et al. (2006) *Canadian Journal of Soil Science* 86: 621-629.

Treating potato processing wastewater. This paper discusses a number of ways of treating potato processing effluent. The detailed analyses include consideration of the composition of the effluent and the financial benefits of efficient treatment processes. Included in the paper are case studies that illustrate the issues raised. Koen & Clayton (2007) *Food Review* 34: 36-39.

Development of sorting system based on potato starch content using visible and near-infrared spectroscopy. The starch content of potato tubers has a major influence on their taste, method of cooking and processing options, and can vary widely under different growing conditions. This research examined the non-destructive determination of starch content using visible and near-infrared spectroscopy, by passing tubers under a sensor on a conveyor system. The accuracy of prediction of starch content was very high, and this technique has potential for use in packing houses. Komiyama et al. (2007) *Journal of the Japanese Society for Food Science and Technology* 54: 304-309.

Potato Review

JULY 2007

Fungicides: Euroblight ratings help spray choice. In the UK, a group of independent scientists meets with representatives from the crop protection industry every year to assess products for their effectiveness against blight. The Euroblight ratings (www.euroblight.net) are given for the effectiveness and characteristics of blight fungicides and assist growers with choosing the right fungicide for their situation. It is emphasised that label information must still be read and complied with. *July 2007, pp. 12-13.*

Machinery: Padco design breaks with tradition. Two potato growers in Essex, UK, have developed a radical new harvester. Working with an engineering company, the Psix was built to harvest six rows planted by their three-row planter but can still handle a two-row system. The problem of road width was overcome by pivoting the two digger units into a vertical position for transport. The front wheels are mounted on swing arms, while the engine is rear-mounted and the driver has an unobstructed view from the front. The harvester will be able to handle 1000 tonnes/day. *July 2007, pp. 22-23.*

Environment: Some growers get a buzz out of potatoes. Sainsbury's is encouraging its fresh produce growers to participate in Operation Bumblebee, a project initiated by Syngenta in the UK to establish habitats with plentiful supplies of pollen and nectar for insects. In just over 2 years, bumblebees have increased by 200 per cent, butterflies by over

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230 per cent and spiders by 120 per cent, through sowing specially designated areas with special seed mixtures that include clovers, treefoil and sainfoin. Little productive land is lost since awkward corners, difficult-to-irrigate areas and compacted soil spots can be used, while the benefits to crops that require pollination are huge. *July 2007, pp. 28-29.*

Stewardship: Wild flowers, beetle banks and potatoes. A similar scheme to Operation Bumblebee is being run by ADAS on behalf of "Natural England". The principle of environmental stewardship is being applied to balance agricultural productivity with conservation and protection of the environment. Hedgerows are being planted and natural wetlands being re-created, while buffer strips, grass margins and fertiliser-free headlands are used along with fallow crops in the arable rotation. *July 2007, pp. 32-33.*

Storage: Hidden losses are revealed to cut costs. As electricity prices rise in the UK (and elsewhere in the world) there is increasing focus on energy losses from potato stores. Unlike leaky irrigation, energy losses cannot be seen and are often ignored. However, a potential saving of £11 million is possible by implementing some basic measures. An infra-red or thermal imaging camera can show where energy is being lost. Particularly important are doors and louvres, but insulation in the roof can also be very significant. Equipment such as variable speed drives for fans offer considerable savings if used properly. *July 2007, pp. 42-43.*

Snippets from www.potatonews.com

Listed below are 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 shown.

SEPTEMBER 2007: NEWS HEADLINES

Australia: MOU signed to enhance Australian potato industry's future. A historic Memorandum of Understanding was signed on 24 September 2007 between AUSVEG and the Potato Processors Association of Australia, as a commitment to work together for the betterment of the Australian potato industry. This is considered to be a big step forward in delivering improved benefits for growers and processors.

Scotland: Chinese import market offers opportunities for Scottish potato growers. Four companies have met the requirements for propagation, packaging, storage and transportation of Scottish seed potato mini tubers to China. This is a major breakthrough, as China has operated a universal ban on the importation of seed potatoes for many years. Several large potato-producing countries, including The Netherlands, Canada and the USA, have previously attempted to negotiate access for their seed potatoes, but so far no commercial quantities have been exported.

United Kingdom: Grimme unveils new generation of potato planters. Grimme, a firm specialising in potato machinery, has recently released a new series of planters and harvesters. The four-row GL44T planter uses ridged belts to accurately deliver seed to each planting downpipe, with a conveyor belt running in the opposite direction to avoid pile-ups. The machine also has an automatic levelling system to allow precise spacing even on slopes. In addition, fertiliser placement and liquid seed treatment options are also available. The new generation 490 hp four-row Tectron self-propelled harvester has features to improve lifting of soil and tubers, along with wheels that take some of the load off the front axle and help to reduce soil compaction.



United States: USPB moves forward with 'new generation' of potato nutrition messaging. Using consumer focus group testing, a potato industry working group has developed four creative ideas that will be developed into advertising aimed at reversing the decline in consumption of fresh potatoes. After further testing, a strategy to release the messaging will be developed.

SEPTEMBER 2007: FEATURE ARTICLE

Nematode, PVY shows why battle to protect crops is never-ending. This article (<http://www.ars.usda.gov/is/AR/archive/aug07/potatoes0807.htm>) explains why research into pests and diseases of potatoes needs to be ongoing. Twenty years ago, it seemed as if the golden or potato cyst nematode (*Globodera rostochiensis*) and potato virus Y (PVY) were under control. However, recently a new race of the nematode has been found to attack previously resistant potato varieties, while symptomless carriers of PVY have allowed that disease to re-emerge. New tools are needed to rapidly identify the resistant nematode, as is a survey of the genetic diversity and distribution of PVY strains.



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