EYES ON POTATOES

AUSTRALIAN POTATO INDUSTRY COUNCIL NEWSLETTER

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New CEO for Western Potatoes

In February, Chris Perrott took over the reins as Chief Executive Officer at Western Potatoes.

Chris has extensive experience in the corporate and financial sectors, most particularly through his family business in the industrial resources sector. After this business was sold to Brambles Industries Ltd, Chris worked for Brambles for five years in a senior management position. Since that time he has worked in various corporate consultancy capacities for a variety of companies.

Chris believes his previous experience in private enterprise will be beneficial to face the challenges ahead in the industry. He said that Western Potatoes will continue to aim to provide a good return for all participants in the potato industry and in doing so will help to support many regional communities which rely on income from potato growing.

Chris said that in order to achieve this Western Potatoes will have to concentrate on greater customer focus through improved quality and efficiency.

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Booklets

Potatoes 2000 Registration Package

World Potato Congress

STOP PRESS • STOP PRESS

John Rich, Executive Officer with the Tasmanian Farmers and Graziers Association, has been appointed to the Advisory Committee for the World Potato Congress Inc.

John's appointment will provide Australian representation to the planning process for future congresses and the Australian industry will be seen to be part of the world potato scene.

Potato Information on the Internet

Version 3 of the Potato Internet Starter Pak has just been released.

The Starter Pak makes it quick and easy to find potato information available on the internet and has links to sites with information on growing potatoes, diseases, pests, marketing, finance, exporting, machinery, chemicals, government services and more.

The latest version has many more sites than before. It will also allow you to look up sites by state for Australia, Canada and USA. So if you are interested in finding out about what is being done on a problem in Idaho, you can look up just the Idaho sites.

There is also more information on financial management which has become a bigger issue as a result of the tax reforms.

You can obtain a copy of the new version by emailing: lwalters@saff.com.au and include in the subject box - **Request for Starter Pak** (Note spelling!) In the area where you write your message, type - **Request**.

Previous users who have not changed their email address should have already received their copy of the new version.

Editorial

We have finally made it to 2000. Ever since childhood we have been promised so many things by 2000 that we have come to expect it to be a completely different world.

Whilst the changeover from December 31 to January 1 may have been uneventful, if we reflect back over even just the last few years in the potato industry, we see the world indeed has changed.

We have seen tremendous restructuring in a very short time. Like most other industries, the Australian potato industry has certainly become more globalised, very obviously in the processing sector and now we are witnessing it in the seed sector as well. For instance the introduction of Plant Breeders Rights, or PBR, has resulted in many more overseas varieties being available in Australia than ever before through companies such as Harvest Moon and Elders acting as agents for overseas breeders.

On the other side of the globalisation coin, some of our Australian- grown companies are expanding on the international scene and taking their technologies to the world, as you will see in the stories on pages 10 and 12.

In other developments during the 90's, we saw markets and consumers place increasing emphasis on quality assurance, particularly in relation to food safety. This has had big implications on the food chain with the requirements for better records and trace back capability.

We also witnessed the ongoing push for greater efficiencies in all sectors of the industry. In many instances this has resulted in larger operations and the development of strategic alliances between organisations and/or individuals. This trend has been threatening for some whilst for others it has opened up many opportunities.

The last few years of the 90's saw the beginnings of a revolution in communication technology. The internet has made information from all over the world available to us at the push of a button. Perhaps more importantly it is opening up new ways of doing business.

The role of *Eyes on Potatoes* in all of this is to help the potato industry become aware of these issues and in doing so help people understand the implications on their business.

Eyes on Potatoes is produced by the Department of Primary Industries, Water and Environment, Tasmania, on behalf of the Australian Potato Industry Council.

EYES ON POTATOES

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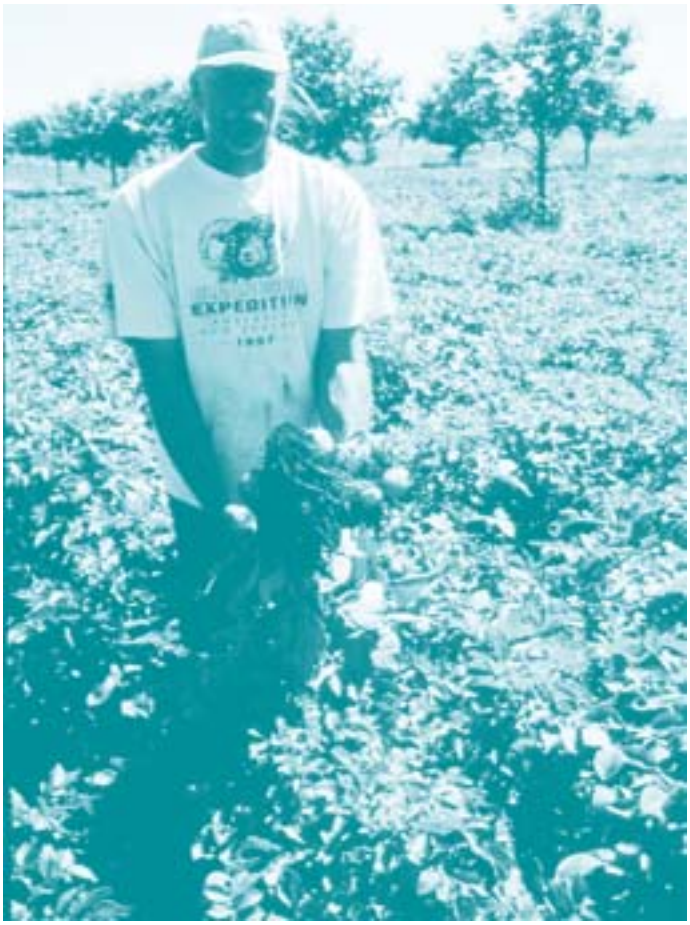


A farmer's experience with organic potatoes

Rod May grows about 4ha of potatoes, together with 6ha of other vegetables (brassicas, carrots and parsnips), on the family property near Blampied, in central Victoria. All of his crops are produced under the National Association for Sustainable Agriculture's Organic Standards Code, which prescribes the crop rotations and inputs (e.g. fertilisers) allowable for produce to be marketed as organic. Conventionally-grown potatoes have not been produced on the property since the 1930s.

My reasons for growing organic produce are philosophical rather than financial. While there are benefits for both human health and the environment, I believe that the social issues are more important. The current trends in conventional potato production are threatening family farms and causing instability. I find that operating in a specialised market such as organics gives me some insulation against this.

To grow potatoes under the Organic Standards Code, we have to make sure that our crops are isolated from any belonging to the neighbours – this means having a buffer zone of about 20m. The property and records are inspected annually and the potatoes are tested for organophosphate and organochlorine levels, which must be only 10% of those allowed in conventional produce. After passing these tests, we are allowed to use the "organic" logo on our packaging.

We have the equivalent of about 3 full-time workers on the property, with some extras employed at harvest times. Because our orders are relatively small, our potatoes are harvested by hand, which is more convenient and not much more expensive than contract harvesting. We pick into 20kg bags or sometimes into 16kg boxes and usually store 20-30t over winter.

Rotations

A typical crop rotation on our property might be: pasture (2-3 years); potatoes; brassica; carrots or parsnips; then back to pasture. The Organic Standards Code specifies a crop rotation of at least 5 years. Including sheep or cattle in the rotation is important for nutrient cycling, as are our dung beetles, worms, green manure and legumes. We also use livestock to clean up the trash from the vegetable crops.

Varieties and seed

We grow 8-10 different potato varieties, the most conventional being *Sebago, Desiree* and *Pontiac*. Specialty varieties include *Kipfler*, *Purple Congo*, *Nicola*, *Pink Fir Apple* and *Dargo Goldfields*. *Desiree* and *Pontiac* are probably the ones best-suited to organic production. We can get yields of up to 50t/ha with *Desiree* and around 25t/ha from specialty varieties.

Up to one-half of our seed comes from off-farm (all certified). At present, we are able to use conventionally-grown seed, but will be moving to certified organic seed when the market is big enough to support it.

Fertilisers

Under the Organic Code, the main limit on fertiliser application is for nitrogen. As a result, most of our nitrogen must be fixed by using green manure crops such as faba beans and adding inoculum. Oats are also used as a green manure crop.

The main fertilisers we use are reactive rock phosphate and lime. The rock phosphate is slow-release and must be put out early. Good liming is very important, both for raising soil pH and soil structure. We also apply a low-analysis fish compost at times. The Code allows us to use potassium phosphate and trace elements if needed.

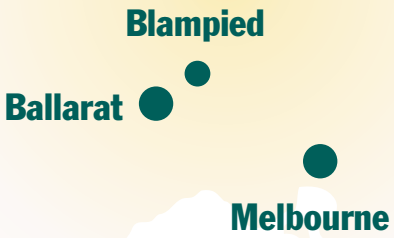
Pests and diseases

Our main disease threat is probably target spot and we try to avoid it by using resistant varieties. However, we can apply copper under the Organic Code. We also see some powdery scab, but it is not a major problem.

Insect pests are not a big problem in the potatoes either. At one stage, our crops were monitored and we released some parasitic wasps, but eventually it was agreed that monitoring was no longer needed – the wasps, along with our cultural practices, were generally doing the job. However, we sometimes use BT bacterial insecticides on the property.

Because we are in a relatively cool area, aphids (and the viruses they carry) are not a problem.

A farmer's experience with organic potatoes contined...



Weeds

Long-term weed management is important in organic farming, but weeds are not a major problem for us. In fact, flowering weeds are a valuable biological resource, because they can shelter the beneficial insects and spiders which help to control our pest species. However, the problems caused by wild radish mean that we can't include cereals in our rotations. Weeds are controlled with a machine weeder or, at the end of the season, with a flame weeder, which is both cheap and effective. We find that weeds are less of a problem in potatoes than in our other crops, which makes potatoes our easiest crop to grow.

Markets

Most of our potatoes go to wholesale markets in Brisbane and Sydney, to be sold on to organic retailers. Some of the specialty crop goes to conventional markets and the fact that the produce is organic helps with these sales.

The organic market seems to want "red" or "white" potatoes and is less concerned with variety. It is also less discerning about size than conventional markets, although large tubers are generally not in demand. However, produce being organic is not enough for the public; there must also be value for money, so a quality product is essential.

There is a ceiling on the organic potato market at present, but it is growing steadily. There are about 50 certified organic potato producers in Australia, and the three in our district produce around 500t per year. Future directions will depend on the attitudes of the supermarkets and whether or not processing of organic potatoes "takes off". At present, there is no processing of organics in Australia, although some product is imported. Unfortunately, the high inputs needed by *Russet Burbank* potatoes makes them unsuitable for organic production.

There is good potential for exporting organic potatoes, particularly because there are no genetically-modified potatoes produced in Australia. We currently send some specialty varieties (eg. *Kipfler*) into South-east Asia by airfreight. Producing processed organic potatoes would improve export possibilities.

Although there are a few restrictions in growing organic vegetables, I find it to be generally rewarding. I am very interested in what goes on in the crop and in making full use of inputs in order to improve sustainability. The organic growing lifestyle gives me the opportunity to follow up these interests without some of the pressures felt by conventional growers.

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Technology Transfer updates

Over the last year, 381 people attended 36 workshops held around Australia to find out how to get better value from their investment in research and development (R&D).

The first part of each workshop looked at past and present problems with utilising outcomes from the R&D program, information products currently available, work in progress aimed at addressing the current deficiencies and future challenges.

The second part of the workshop involved a demonstration of new technologies such as the internet, email, digital cameras and DVD.

Many of the participants to date had not been using computers or the internet and were keen to see what the technology was all about.

I would like to thank all those people who helped in the organisation of the workshops. Without local support, they would not have occurred.

Further workshops are being planned and will be run over the next six months. I would be interested in hearing from any industry groups wanting to host a session.

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Potato Review

Potato Review is an independent British potato magazine, published bi-monthly. It includes in depth review articles on market trends, technical and scientific developments and new products. European and world developments in potatoes are monitored.

Potato Review has subscribers in 47 countries throughout Europe and the rest of the world.

To obtain a regular copy, by airmail, the subscription is £42 per year. Contact Bob Meredith using the details below. Bob will send you an invoice and ensure you receive every issue of *Potato Review* during the next 12 months.

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Out & About

During January, VICSPA hosted a get together of certification officers from around Australia. The group developed uniform methodologies for field and tuber inspections for certified seed potato production and discussed the practical implications for the adoption of the National Seed Potato Certification Standards.

The group also utilised the National Potato Improvement Program seed multiplication area to refresh their variety identification skills.

Back Row: Alex Duff (Gippsland Inspection Services-Vic), Dale Spencer (Agriculture WA), Keith Blackmore (Manager ViCSPA-Vic), Philip Johnson (Agricultural Inspection Services-Vic).

Front Row: Tony Kellock (Expert Foundation-Vic), Bob Peake (PIRSA Rural Solutions-SA), Linda Wilson (DPIWE-Tas).

The variety cookbook

Considering the wide range of fresh potato varieties now available, it is important for both consumers and the industry to know which varieties are suited to particular methods of cooking. Without this information, consumers may not get the results that they are looking for from their potatoes. In the face of competition from rice and pasta, disappointed potato consumers are not what the industry needs.

Fortunately, information about cooking methods is generally available and needs only to be passed on to the consumer. The following table presents an alphabetical listing of varieties, their characteristics and their relative values for several cooking methods. The cooking values were measured with standard tests used in variety evaluation. The table is incomplete at present and feedback is invited so that we can update in the future. Please note that, to some extent, cooking values (and even tuber shape) can vary according to crop conditions, including soil type, nutrition and irrigation patterns.

Compiled by Andrew Henderson (Agriculture Victoria Knoxfield), with Graeme Wilson (Agriculture Victoria Toolangi), Peter Dawson (Agriculture WA), Western Potatoes and Kevin Clayton-Greene (Harvest Moon, Tasmania).
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Variety	Characteristics			Cooking value					
	Shape	Skin	Flesh	Boil/mash	Salad	Dry bake	Roast	Fry	Microwave
Bintje	oblong-long	cream	light yellow	✔✔	✔✔✔	✔	✔	✔✔	
Bismark	oval-long	creamy white	white	✔✔✔	✔✔✔	✔	✔	nr	
Bison	round	deep red	white	✔✔	✔✔	✔	✔✔	nr	✔
Brakelight	round	red	white	✔✔	nr	✔✔	✔	✔	
Brownell	round	brownish pink	white	✔✔✔	✔	✔	✔✔	nr	
Coliban	round	white	white	✔	✔	✔✔	✔	nr	✔✔
Crystal	round	white	cream	✔✔	✔	✔✔✔	✔✔	✔✔	✔✔
Desiree	long	pink	pale yellow	✔✔	✔✔✔	✔✔	✔✔	nr	✔✔
Delaware	long-oval	white	white	✔✔	✔✔	✔	✔	✔	✔✔
Exton	round	white	white	✔✔	✔✔	✔✔	✔✔	nr	
Gold Star	round	cream	yellow	✔✔	✔✔	✔✔	✔✔	✔✔	✔✔
Jersey Royal	oval-short	creamy white	light yellow	✔✔✔	✔✔	nr	nr	nr	✔✔✔
Katahdin	oval-round	white	white	✔✔	✔✔	✔✔	✔✔	✔✔	
Kennebec	oblong	white	white	✔✔	✔	✔✔	✔✔	✔✔✔	✔
King Edward	oval	white/pink	creamy white	✔✔	nr	✔✔✔	✔✔✔	✔	
Kipfler	cigar	yellow	light yellow	✔✔	✔✔✔	✔	✔✔	nr	
Knox	round-oblong	buff	white	✔✔	✔✔	✔✔	✔✔	✔✔✔	
La Ratte	cigar	yellow	yellow	✔✔	✔✔✔	✔✔	nr	nr	
Latona	oval	cream	cream	✔✔	✔✔	✔✔	✔✔	nr	✔✔
Nadine	oval-round	creamy white	cream	✔	✔✔✔	✔	nr	nr	✔✔✔
Nicola	oblong-long	rich yellow	yellow	✔✔	✔✔✔	✔✔	✔✔	✔	
Nooksack	oval-long	russet	white	✔	nr	✔✔✔	✔✔	✔✔✔	
Norland	round	red	white	✔✔	✔✔	✔	✔	nr	
Patrones	oblong	light yellow	light yellow	✔✔	✔✔✔	✔	✔	✔✔	
Pink Eye	round	cream/mauve	cream-yellow	✔✔✔	✔✔	✔	✔	✔	
Pink Fir Apple	cigar	light pink	cream	nr	✔✔✔	✔	✔✔	✔	

Variety	Characteristics			Cooking value					
	Shape	Skin	Flesh	Boil/mash	Salad	Dry bake	Roast	Fry	Microwave
Pontiac	round	red	white	✔✔✔	✔✔	✔✔	✔✔	nr	✔✔✔
Purple Congo	cigar	purple	purple	✔✔	✔	✔	✔	✔	
Rideau	blocky-round	red	white	✔✔	✔✔	✔✔	✔✔	nr	
Riverina Russet	oblong-long	creamy white	white	✔✔	✔✔	✔✔	✔✔	✔✔✔	✔✔
Roseval	long	deep red	yellow	✔✔	✔✔✔	✔	✔	nr	
Royal Blue	oval	purple	yellow	✔✔	✔✔	✔✔	✔✔	✔✔	✔✔
Ruby Lou	oval	deep pink	light cream	✔✔	✔✔✔	✔✔	✔✔	✔✔	✔✔
Russet Burbank	long	russet	white	✔	nr	✔✔✔	✔✔	✔✔✔	✔
Sebago	oblong	white	white	✔✔✔	✔✔	✔✔	✔✔	✔✔	
Sequoia	flat-oval	cream	white	✔✔	✔✔	✔	✔	nr	
Shepody	long/flat	white	white	✔✔	✔✔	✔	✔	✔✔✔	
Shine	round	white	white	✔✔✔	✔✔	✔✔	✔✔	✔	✔✔
Snow Gem	oblong	white	white	✔✔✔	✔✔	✔	✔✔	nr	
Spunta	long	pale yellow	pale yellow	✔✔	✔✔	✔✔	✔✔	✔	
Symfonia	oval	red	yellow	✔✔	nr	✔✔	✔✔	✔✔	✔✔
Tasman	oval-round	pink	white	✔✔✔	✔✔	✔	✔	nr	
Toolangi Delight	round	deep purple	white	✔✔✔	✔✔	✔✔	✔✔	✔	
Up to Date	oval/flat	cream	pale yellow	✔✔	✔	✔✔✔	✔✔	nr	
Wilwash	round	white	white	✔✔✔	✔✔✔	✔✔	✔✔	nr	
Winlock	round	light buff	white	✔✔	✔✔	✔✔	✔✔	✔	
Winter Gem	oval	white	white	✔✔	✔✔	✔✔	✔✔	✔✔	✔✔

Key: ✔✔✔ **Excellent** ✔✔ **Good** ✔ **Fair** nr **Not recommended**

The GMO debate

The following article has been compiled by Leigh Walters from a wide range of articles, conference papers and information leaflets from government departments.

Most people would have heard something about GMO's over the last year. It is a debate that is raging about the use of products derived from plants or animals that have been developed using techniques that enable genes to be transferred between plants, animals and micro-organisms.

The use of Genetically Modified Organisms or GMO's, as they are commonly known, has challenged current boundaries of acceptability and has resulted in a wave of opposition from sections of the community in Europe and to a lesser degree in Australia and the USA.

So why have GMO's, why are people opposed to them and what can we learn from the debate?

Why have GMO's

Anybody casually following the debate could be forgiven for thinking that it is clear what a Genetically Modified Organism is. Unfortunately the term is somewhat misleading in that breeding programs for many years have been modifying the genetic make-up of plants to produce better varieties and more productive animals.

Using traditional breeding techniques the process can take many years and the changes have often been small. A new potato variety may yield more, have better cooking characteristics or have resistance to an important disease.

In more recent times newer gene technologies have been developed to greatly speed up the breeding process and the degree of change that can be imposed.

This means for potato farmers the possibility of new varieties being developed more quickly and with benefits that would be difficult, and in some cases impossible, to achieve with traditional breeding methods.

So for farmers the new technologies could provide a range of very positive benefits such as varieties better suited to consumer needs and that are resistant to pests and diseases which would result in lower chemical use.

Besides speeding up the current breeding process the new gene technologies also create new opportunities. A US plant institute and a UK based biotechnology company are working on a genetically altered potato to vaccinate people against hepatitis B.

If it is successful and the price of the product is kept low, the impact of the technology on preventative medicine, especially in the third world, could be enormous.

Why are people opposed to them

It is easy to view this as solely an emotional debate driven by the "greenies" and not based on logic. That is not so and like any public debate the real issues can easily be buried under emotive arguments which is definitely the case in the GMO debate.

There are several important issues that need to be considered.

Ethical issues

The first is an ethical one in that we are now entering a period where we have the techniques to alter the genetic make-up of plants and animals in ways many people would never have dreamed of only a few years ago.

The insertion of animal genes into a plant is a good example. Many people are asking the question, is this something we should be doing? Is it right to play around with nature to this extent. It is a question that is likely to arise whenever we make a large advance that impacts on the way we view life.

Whenever these questions arise it is important that we have good quality public debate to improve people's understanding of the issues. Society has to determine where it wants to 'draw the line' as to what is acceptable and what is not. This will also change over time.

Ethical debates are common in societies and are important in helping people to understand the issues.

Is the food safe

The second issue is one of food safety. Do we know what effect these changes will have on the food we eat? Could we unintentionally produce toxins or allergens that would create health problems?

These issues particularly came to the forefront as a result of an experiment in Scotland where a researcher produced a GMO potato that turned out to be toxic. Many scientists have questioned the validity of the science and people opposing GMO's have used it as a reason for not using the technology.

This part of the debate has got quite confused. Undoubtedly, using the new techniques, we could produce toxic products in much the same way as we could with the old methods of breeding.

The question should not be whether we can produce toxins or allergens but do we have the procedures in place to ensure the products with undesirable traits never reach the marketplace.

In the oilseed industry we have had a major focus on breeding canola with low levels of glycosinalates. In large quantities glycosinalates are toxic to humans. The results of the breeding work, much of it done with conventional breeding techniques, has been canola varieties with very low levels of glycosinalates, which can be used for margarine.

We are also selecting more toxic varieties of the same species that can be used to fumigate the soil through a process called biofumigation. Eventually we should also have varieties that are toxic in their roots and non-toxic in their seed. So we have the best of both worlds.

The new genetic techniques simply speed up the process and gives the breeder greater scope for change. At the end of the day the varieties have to be suitable for the marketplace before they are released for whatever purpose they are designed.

What about the environment

The third issue is the impact of GMO organisms spreading into the environment and cross breeding with native vegetation or animals. For example, a herbicide resistant canola may become a weed or cross with a wild oilseed such as wild turnip and produce a new herbicide resistant weed.

Crops becoming weeds is not a new phenomenon and definitely not something unique to GMO's. Let us not assume that just because we breed a superior crop that it will survive well in the wild. High performance crops often have a greater need for nutrients which restricts their ability to compete and perform on unfertilised native soils. Crops tend to be weeds in other crops more so than in native vegetation.

This does not mean that we should not remain vigilant about the possibility. If new gentically modified plants are produced that could perform better in native soils then these varieties could become a problem.

Checks and balances

The issue of food and environmental safety raises an important question. Do we have adequate checks and balances in place to ensure that safe products will be produced and we do not contaminate or interfere with native vegetation or animal populations?

The Australian Government has been very active in this area to address people's concerns and has been reviewing and upgrading regulatory systems to ensure they can cope with the challenges that will be faced. That is not to say that people should not be interested in what is going on or not input into the process if they have concerns.

A lot of information about what is happening is available, particularly over the internet. Public input is also being sought on a range of issues.

Public perceptions

Many people are concerned about food safety and if there is any doubt about whether food produced from GMO crops is safe they could choose to avoid these products.

In response to these concerns there has been considerable debate on the need for labelling to indicate whether foods contain any GMOs. By labelling the people make the choice as to whether they use GMO products and not the multinationals and governments.

At first labelling was rejected by many groups as unworkable as many foods consisted of a number of different ingredients including additives of which any one could be derived from a GMO. As many companies buy in ingredients the task of identifying and labelling a GMO product was never going to be easy.

The Australian Government is currently considering a proposal to label all GMO foods. The Prime Minister recently deferred a decision on its adoption until a more detailed costing for implementing the changes could be determined.

Supermarkets and processing companies

Processors and supermarkets are currently developing or have policies on GMOs. It appears many companies will take the cautious approach and not use them in the short term. At the end of the day these companies are there to sell product to generate profits. So these companies are likely to react to public concern rather than jeopardise their markets.

Another point that needs to be considered is if the supermarkets and processors can get a similar product to the GMO product why would they take the risk of using the GMO product if there is public concern?

If labelling of GMO products goes ahead then supermarkets are more likely to stock the products as the decision as to whether to buy is left with the consumer. If the GMO line did not sell the supermarket would simply not stock it.

Alternatively, if it was perceived that the public was not concerned about GMO products then the companies would simply treat them as another product.

What can we learn from the debate

At present the debate is very emotional, especially in Europe, and quite polarised. We are lucky in Australia because we do have a lot of expertise in gene technology and have regulatory systems in place that appear to work very well and respond to community concerns.

In Britain the debate has been a lot more polarised following the loss of public confidence in the regulatory systems due to the handling of "Mad Cow Disease". In Europe the situation is one of vastly different cultures, attitudes and political systems. This diversity is a recipe for differences to emerge.

For Australians the overseas reactions are important because, regardless of what we think, we are linked into a global economy. We will be influenced by what Europe and the USA do with regard to this issue.

The potato industry needs to be mindful that there are many people who have real concerns about the technology. These concerns will only be addressed through education and confidence in the government regulatory systems.

It is important to "air the issues" and have them discussed rather than discounting them. The potato industry in Australia is in a very good position. We have the technology to produce and use GMOs if we want to but there is no urgent reason to do so. (See *Potato Australia* for reports on current work).

At present many businesses are not likely to use GMOs until the public concerns are adequately addressed.

The Regulators

The Australian government has responded to the GMO issue by setting up the Interim Office of the Gene Technology Regulator (IOGTR) under the Department of Health and Aged Care. Advising it is the Genetic Manipulation Advisory Committee or GMAC. Their role is to assess the health and environmental risks associated with genetically modified organisms or GMOs.

Research

GMAC monitors and assesses all research from the original design concept through to when GMOs are ready for release for use. At each stage GMAC must be satisfied that all the risks associated with the work are being managed, especially risks that relate to public health and safety, and environmental safety. If GMAC is concerned about the GMOs impact on any of these issues the research is not permitted to continue until the concerns are addressed.

To assess risk GMAC also works with Institutional Biosafety Committees (IBCs) of which there is one associated at every research institute where gene technology research takes place.

The IBCs are responsible for the day to day monitoring of GMO work under guidelines put out by GMAC.

GMAC and its predecessors have been in operation since the early days of gene technology in the 1970's.

IOGTR is currently developing a regulatory framework to support the work of GMAC and this should be in place by January 2001.

Other agencies involved

There are also a number of other agencies that can influence the introduction of a GMO. Some of these are:

- GMO's destined for the food supply are assessed and approved on a case by case basis by the Australia New Zealand Food Authority (ANZFA).
- If the GMO is to be imported or exported, it must meet the requirements of the Australian Quarantine and Inspection Service (AQIS), the Australian Customs Service and in some cases environmental legislation administered by Environment Australia.

For GMOs developed overseas, field trials are required to provide information on the GMO in the Australian environment, even if it has been approved for release in another country.

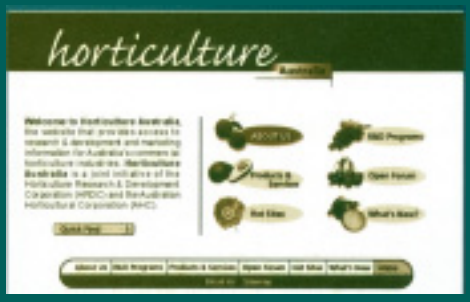
Sources of Information

There is a lot of information on the internet. Key government sites are:

CSIRO
genetech@csiro.au

IOGTR and GMAC
www.health.gov.au/tga/genetech.htm

ANZFA
www.anzfa.gov.au/GMO/



Horticulture Australia the website

www.horticulture.com.au

Horticulture Australia is a new internet site that provides access to research, development and marketing information for Australia's commercial horticultural industries. It is a joint initiative of the Horticulture Research & Development Corporation (HRDC) and the Australian Horticultural Corporation (AHC).

What does it do?

The new internet site enables growers and other people working in the industry to access the programs of HRDC and AHC more effectively and interact more easily with key people in the industry.

Project information

There will be information on all projects in progress and reports published. Email links will enable you to find out more about the work by making it easier to contact the researcher directly.

Where projects have been completed a full report can be ordered from the internet site.

If you are not sure what reports are available on a topic, a search engine is included which allows you to request a list of what projects there are on a particular topic.

Reports and market information

A wide range of reports including analyses of overseas market trends and training guides can be ordered from the site.

Discussion forums

If you have a point of view you want to express, an issue to air, a problem to solve why not join a discussion forum. These interactive forums will enable you to have your say and get feedback on any horticultural subject you choose.

Links to other sites of interest

Links to a range of sites have been included. These sites have been reviewed for relevance and value. You will also be able to contribute by suggesting a link that you have found valuable.

Keeping up to date

The site provides the latest news and information on R&D and marketing in commercial horticulture and there is also a conference and events calendar to which groups can add their own activities.

Kevin Clayton-Greene of Harvest Moon with a sample of Bintje destined for Korea

the expansion bug has bitten this year

Tasmanian based packer/exporter Harvest Moon is becoming a major force in the Australian vegetable industry with its expansion both at home and internationally. Since its foundation as a trader in potatoes in 1981, Harvest Moon has maintained a strong interest in potatoes.

Harvest Moon has invested into a potato, carrot and onion pre-packing operation, GroPak, based in Palmerston North, on the southern tip of New Zealand's north island. GroPak currently serves local supermarket trade with these lines and with this investment, has expanded into carrot production and export. This will enable Harvest Moon to offer a wider service to overseas customers and supplement supply to export markets when production difficulties occur in Tasmania.

At home, Harvest Moon co-owners and directors, Neil Armstrong and Mark Kable have welcomed a new partner, Chas Kelly, into their Forth based operation in northwest Tasmania. Chas brings 25 years of business knowledge and experience as Tasmania's major transport operator and his capital investment will enable future expansion plans to be met.

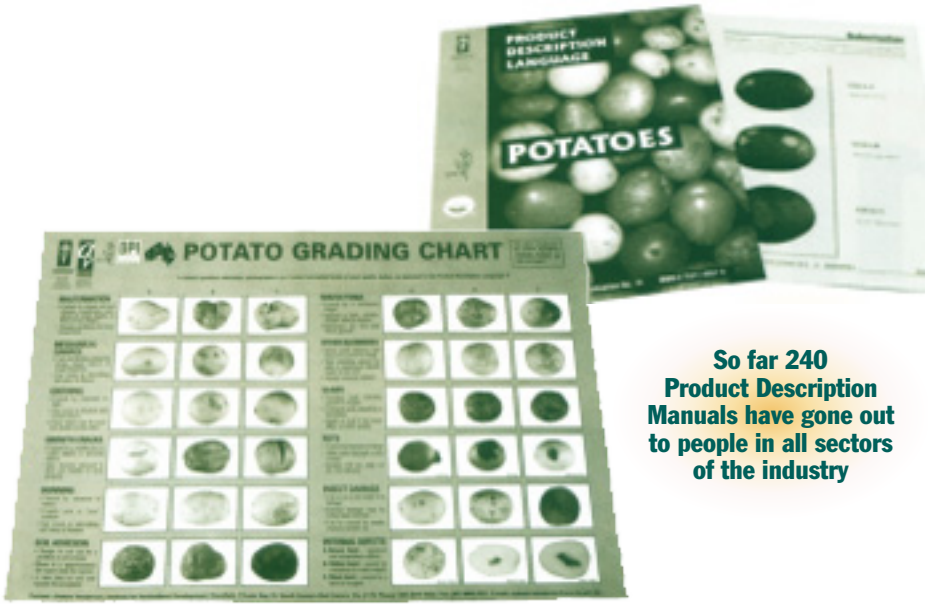
A new potato shed has just been built housing lines for washed and brushed potatoes. Storage capacity will again be increased this year to meet growing production.

Harvest Moon is continuing its potato variety evaluation program searching for varieties that have outstanding culinary characteristics. Harvest Moon is the Australian agent for HZPC (the new company formed by last year's merger of Dutch companies Hettema and ZPC) and has imported and registered several HZPC varieties in Australia.

One of the most promising varieties is *Royal Blue*. Its distinctive purple skin sets it apart from other varieties and it is suitable for a wide range of culinary uses. The first harvest of another new line, *Celeste*, took place in early January with very impressive results both on the packing line and on the dinner table. *Celeste* has a smooth, buttery texture and is ideal for roasting and chipping.

In other developments, during December Harvest Moon said farewell to Graham Hall, who has played an integral part in the marketing team and the seed potato program for almost 10 years. Kevin Clayton-Greene and Fraser Mearns are now managing the seed program at Harvest Moon.

Gary Gilling is now responsible for ware potato marketing and is in the process of implementing promotional campaigns at store level to educate consumers about these new varieties.



So far 240 Product Description Manuals have gone out to people in all sectors of the industry

How does a spud-man turn a carrot into a passion fruit?

Potato Grading Chart now available

Following the publication of the Product Description Language – Potatoes manual in 1999, a poster which summarises the main quality defects has also been produced. The Potato Grading Chart complements the manual by using the same groups of photographs to illustrate three levels of each defect. Like the manual, the Chart is not designed to set standards but to provide a common language from which traders can set their own standards.

The Potato Grading Chart has been produced jointly by Agriculture Victoria (CQ-Potato project), DPI Queensland and HRDC. It is suitable for display in a shed and has a plastic coating on both sides for added durability.

The Potato Grading Chart is available free of charge (unless special postage is required). A number of industry people in each State are assisting with distribution (for which thanks are extended). To find your most convenient distribution point, please contact one of the following:

Victoria
Andrew Henderson ☎ (03) 9210 9222
Queensland
Eric Coleman ☎ (07) 5466 2222
South Australia
Leigh Walters ☎ (08) 8232 5555
Tasmania
Nathalie Jarosz ☎ (03) 6421 7637
Western Australia
Paul Pilay ☎ (08) 9335 8999
New South Wales
Stephen Wade ☎ (03) 5883 1644

The more detailed Product Description Language manual (which includes photographs of 40 varieties, plus aids to assessing quality) is available for $85.00

Contact Andrew Henderson at Knoxfield.

One of our potato industry people establishing good will with Coralie, the local carrot, at the Forthside Vegetable Research Station Open Day in Tasmania.

World Potato Congress 2000

Netherlands 3rd-8th September 2000 incorporating the trade and field days in Emmeloord

Crookwell Potato Association Inc and Traveland Wagga Wagga have been appointed the Official Australian representatives. We invite you to join our escorted group departure to WPC2000 departing Australia 1 September and returning 12 September.

PLEASE ENQUIRE ABOUT INDIVIDUAL TAILOR MADE ITINERARIES FOR MID OR POST CONGRESS TRAVEL ARRANGEMENTS

From $4525* per delegate and $3595* for delegates partner
*Subject to currency exchange fluctuations

Inclusions:
- Return airfares to Amsterdam flying Cathay Pacific
- Congress registration that includes official welcome functions
- 7 nights in 3 star accommodation (based on twin share) in the Netherlands
- 1 night stop-over in Hong Kong in 3 star accommodation (based on twin share) including airport transfers.
- Comprehensive travel insurance

For the Congress program or field days information, contact
Crookwell Potato Association Inc.
PO Box 64
CROOKWELL NSW 2583
Tel: 02 4832 1800
Fax: 02 4832 1830
E-mail:
seed.potato.shop@interact.net.au

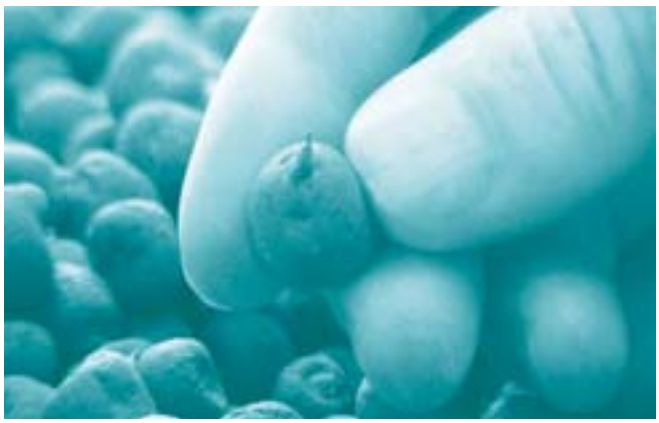
For travel options and information, contact
Jeremy Riethmuller
Traveland Wagga Wagga ®
PO Box 610
WAGGA WAGGA NSW 2650
Tel: 02 6921 5144
Fax: 02 6921 4712
E-mail: jeremy@travelandwaggawagga.com.au

Technico GOES GLOBAL

Technico has geared up to take a share of the global US$100 billion potato market with expansion both at home and internationally. The following is a brief update of the extent of Technico operations.

Planting operations

Technico has recently completed the commercial planting of over 25 ha using more than 2,000,000 TECHNITUBER® seed. Eighty hectares of G1 and G2 seed were also planted across New South Wales, Victoria, South Australia and Western Australia.



Presprouted TECHNITUBER® seed ready for planting

These plantings are being supported by an extensive R&D program aimed at enhancing our field production systems and thereby maximising the yield and quality of crops grown from technitubers.

Overseas, early plantings in Thailand and China are in excess of 200 hectares using significant numbers of TECHNITUBER® seed and early generation seed derived from technitubers.

So far this season Technico has sold over 1,600 tonnes of 2nd Field Generation (G2) seed to commercial growers. Additional tonnages have been utilised byTechnico's Australian commercial field production operations and significant volumes have been exported to Thailand for Technico's commercial operations there. Next year Technico is targeting significant increases in the volume of seed to be made available for sale to the commercial market.

Seed production facilities

Technico is applying its technology to the global market. There are now four established TECHNITUBER® seed production facilities in various locations around the world. One in the US and one in Mexico operated by global snack food giant, Frito Lay, one in Australia and one in China operated by Technico. Construction on a fifth facility, located in India, commenced in December '99.

TECHNITUBER® seed production facility in Kuming China. Initial production capacity is 10 million TECHNITUBER® seeds per year.

In January 1999 Technico acquired the operations of Plant Biotics, the largest producer of minitubers in the United States with a capacity exceeding three million minitubers per year. The company has a developed market for minitubers in the US, Canada and Mexico as well developing growth markets in South America. Technico will launch its TECHNITUBER® seed technology into the Americas through this company.

A major development for the company has been the establishment of its own field multiplication operations in Australia, China, Thailand and the US which will allow the company to fully leverage its TECHNITUBER® technology into a full supply chain management program. Field operations in India will commence in July 2000.

Keith de Franck
Marketing Services Manager, Technico
☎ (02) 4861 6169
e keith.de.franck@technituber.com.au

Technico
planting operations commence in Thailand

Australian company, Technico Pty Limited is set to deliver on the recently signed contracts with Frito Lay for the production of over 140,000 tonnes of seed and commercial potatoes in Thailand and China worth over US $35million (AU $54 million).

Signing of supply contracts for 60,000 tonnes of seed and commercial potatoes valued at US$15.6 million.
(LtoR) Mr Murray Hegney, Technico Country Manager, Thailand, Dr Dan Sun, Senior Trade Commissioner, Randal Jones, Manager Australasia Region, Technico Pty Limited, Mr Tim Minges, President and Mr Dennis Antilla Vice President, Pepsi Foods, Asia.

To carry out the production operations, Mr. Murray Hegney and Dr John Bowman have recently been appointed to the position of Country Manager, in Thailand and China respectively. Mr Hegney relocated to Thailand in August of 1999 and Dr Bowman relocated to China in December 1999.

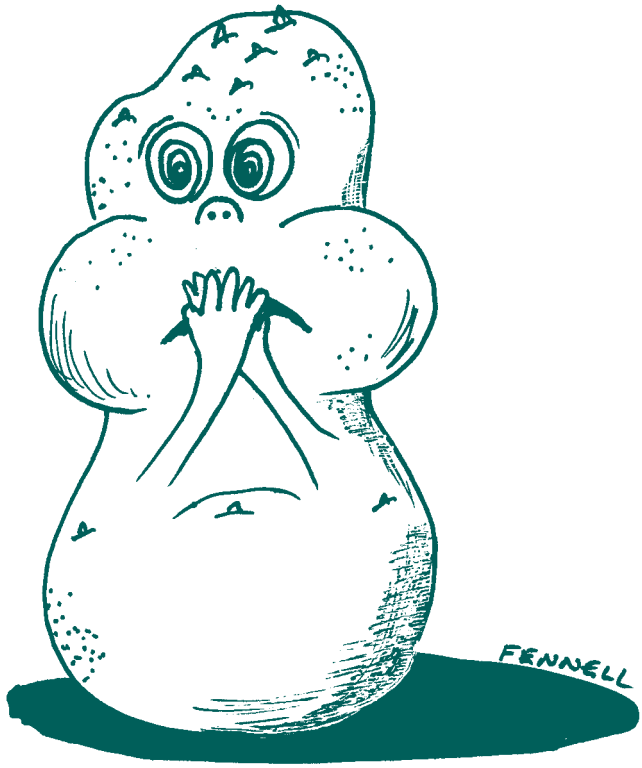
Both the Country Managers are now overseeing the implementation of advanced potato production systems for the long-term delivery to Frito Lay of both seed and commercial chipstock crops, under the testing conditions found in northern Thailand and southern China.

These conditions are known for their disease challenge and Technico believes the only economically viable option for in-situ potato production is the utilisation of TECHNITUBER® seed.

The company now has 11 full time staff employed in Thailand, including expatriate Queensland Farm Manager, Richard Abbott based near Chiang Rai. There are over 40 staff in China including expatriate Western NSW Farm Manager, Will Cannon, who will be based in Southern China.

Technico recently planted over 1,600,000 million TECHNITUBER® seed in northern Thailand with this purpose designed vacuum seeder

Tater-toon



Regurgitater

Jeff Peterson on the move

Jeff has finished up with Smiths Snackfood Company and started up his own consultancy company, *Agricultural Supply Chain Services*.

Previously Jeff has been actively involved in APIC as the deputy chairman and as a member of the APIC R&D Committee. He made a significant contribution to the industry in these roles.

We wish Jeff all the best in his new business.

He can be contacted on
☎ (02) 9489 7949 or 0410 69794.

State ROUND-UP

Western Australia

Fresh market

Through mid summer and autumn potatoes are harvested from Manjimup and Pemberton. Quality problems this year have affected the early harvests. Stained skin after the hot December weather has been common. There have also been unusually high levels of flesh faults. Hollow heart and translucent flesh have been noticed in many varieties.

Western Potatoes has appointed a new CEO. Welcome to Chris Perrott.

Crisp

Brett Pemberton of The Smith's Snackfood Company has moved from Perth to Brisbane. He will still oversee field operations in WA with the help of a local crop scout. Brett reports that quality is very good this season with no hollow heart problems. Maybe the crisp growers' specialised management has helped them to avoid the problems of the fresh market growers.

Export

Sales are steady. There is still much interest in the potential of this trade. Western Potatoes and the Potato Growers Association of WA are actively investigating the potential for export of value added product.

Peter Dawson
Development Officer, Horticulture
Agriculture Western Australia

Tasmania

The season has continued to be one of variation. Plantings commenced in October 1999 under ideal conditions. Tasmania experienced unseasonably cold conditions during November. This did not delay planting but had the effect of slowing crop emergence.

Heavy rains have occurred during the early summer months in the North East and the East Coast areas of Tasmania while some rivers in the North and parts of the North Western areas have irrigation limitations imposed because of dry conditions. Growers without adequate water access this year are experiencing some difficulties.

McCain and Simplot Field Service report that early variety harvesting commenced towards the end of January with very few problems. Whilst it is too early to predict how the main crop may harvest, the crops generally look to be in good condition.

The availability of adequate process potato storage facility is always an issue of concern and interest to growers. Simplot advise that the commitment given during price negotiations to increase storage should see additional storage being built at Ulverstone and in the Tasmanian Midlands.

Production in Tasmania is predicted to be a record this year. Both processing companies have increased tonnage and the forecast is for Tasmania to produce over 400,000 tonnes of potatoes. This tonnage includes fresh market, processing and seed.

John Rich
Executive Officer
Tasmanian Farmers & Graziers Association

Victoria

Cooler-than-average January temperatures, along with some reasonable falls of rain, have brought some relief from the long dry spell. The rainfall distribution has been a bit patchy so some growers are happier than others.

With good rains at Ballarat, processing crops have progressed well, only requiring some heat to finish them off. Target spot is a potential threat under these humid conditions and has been found on the Koo Wee Rup Swamp, where many growers have been spraying for it.

Crisping crops on the Swamp are doing very well and good quality is expected. Seed crops throughout the state have generally also made good progress.

Fresh market prices have been kept down recently by an oversupply of potatoes. This situation may continue because yields of early fresh market crops have been quite good with many around Thorpdale producing about 50t/ha.

Tomato spotted wilt virus has appeared in a number of crops this season, so growers need to be on the lookout for western flower thrips which are the main carrier of this disease. Common scab has also been spotted on a few properties. Otherwise, no problems of note have been reported – let's hope that continues!

Andrew Henderson
Technology Transfer, Potatoes
Agriculture Victoria

South Australia

The summer weather pattern has been very variable with relatively mild conditions early on, followed by isolated thunderstorms with heavy rain events and then very hot weather.

These conditions have reduced the potential yield and quality of the summer crops. The potential crop losses from tomato spotted wilt virus is of great concern this season. The symptoms are most severe in susceptible varieties but the symptoms are more apparent in *Russet Burbank* crops this season.

Bacterial wilt outbreak

In mid-November bacterial wilt was confirmed on one plant from a crop on the Northern Adelaide Plains. The plant was detected during a routine inspection undertaken as part of the requirements for export of washed ware potatoes from South Australia to Western Australia.

The outbreak has been managed to meet Western Australian export requirements with secure handling of the affected crop, machinery disinfection, etc. Western Australian regulations require a 20km radius suspension zone in relation to a property where bacterial wilt has been detected within the past five years. This suspension zone will prevent the export of potatoes to Western Australia from the Northern Adelaide Plains region for a five-year period.

New seed production area

Several graziers on Kangaroo Island have commenced growing seed under contract for commercial companies. Kangaroo Island enjoys a mild, relatively frost-free climate that may allow two crops in a year. The soils vary from sand, loams and ironstone laterite of varying depths and mixtures.

Water is sourced from dams and is generally of very high quality. There have been some small ware crops grown on the Island but the broadacre soils have minimal disease levels. The focus at present is on G0 to G1 crops, with a keen interest to move into G1 to G2. The contact person for more information is Andrew Ewers, Industry Development Officer, PIRSA Rural Solutions, Kingscote (08) 8553 2222.

Bob Peake
Senior Consultant Potatoes
PIRSA Rural Solutions

Queensland

The spring crop in the Lockyer and Fassifern Valleys in 1999 were planted in one of the mildest seasons recorded. Conditions were cool with regular rainfall and little pressure from the usual westerly winds. This saw exceptionally high yields in most areas and crops grew out for up to 2 weeks longer than normal. This was followed by similar conditions for the Southern Downs and Killarney regions.

Due to the mild weather there were still potatoes available around the Lockyer well into December when a lot of other districts in Queensland and interstate had started. The early part of the crop in October saw reasonable prices up around the $400/ tonne mark at farm gate.

The Atherton Tablelands also saw very good growing conditions with many main season growers producing above average to excellent crops and receiving prices of $400 - $500/tonne. While most growers were happy, the Tablelands did not escape without a few problems. At the start of the season there were some soft rots in seed but luckily growing conditions meant they did not spread.

In mid-season a few growers were affected by severe target spot infections, resulting in their crops dying off as early as 12 weeks. Late grown crops could not be sold due to over supply caused by harvest periods in a number of districts overlapping. In December there were potatoes available from the Lockyer, Downs, Dorrigo and Hillston areas, in addition to Atherton.

Mike Hughes
Extension Agronomist
Department of Primary Industry

New South Wales

The last three months have provided mixed blessings for the State's potato growers. Thanks to the favourable seasonal conditions, all districts have achieved high yields and excellent pack outs with their early crops. However increased cropping areas and decreased consumer demand saw fresh market prices crash, with many growers accepting negative returns just to finish digging. Fortunately the processing growers have received better returns with the high dry matter contents of most crisping and French fry crops.

The spring harvest commenced along the coastal districts in early November. Although wet weather delayed digging, quality was excellent due to the mild day temperatures, cool nights and regular falls of rain during the growing season. Early crop areas were up with the return of some outer Sydney growers to the industry. The Maitland crops averaged 35 t/ha with on-farm prices as low as seven dollars per fifty kilogram bag ($140/t) over November. Because of the poor prices, some crops were ploughed in for the first time.

Digging of the Riverina crops started in mid-November with good crop yields of 38-42 t/ha. Crop areas also increased due to earlier sowing by a few growers. On-farm prices dropped from $180/t (the break-even price) in early December to $120/t by early February. Harvesting was very slow due to the oversupplied ware market.

Conversely there was a firm demand for crisping potatoes on both the domestic and export markets. Dry matter contents were exceptional, with some Atlantic crops achieving specific gravities of 1.095 (24 percent dry matter). Planting of the late crop started in mid-January, with crop areas expected to be similar to last season.

Although planting of the main crop in the Tableland districts was delayed by wet weather, crop areas are also slightly up on last season, in part due to the strong demand for certified seed. Crop growth has been excellent, while pest, disease and irrigation problems have been minimal. Digging of the Tableland crops is expected to start in early March, with good yields and excellent quality expected in most districts.

Stephen Wade
District Horticulturist
NSW Agriculture

Gary O'Neill

joins Elders in South Australia

Gary O'Neill has moved on to Elders in South Australia to take on the role of State Potato Agronomist. Gary previously worked for 10 years in the crisping industry with the Smiths company including seven in Queensland. Best wishes to Gary and his family as he embarks on his new challenge.

Gary can be contacted on
☎ 08 8349 4834 or 0408 980 055
fax 08 8260 2927
goneill@elders.com.au

Here's just some of the food the typical Aussie will eat over a 75 year lifespan

- 17 cows
- 92 sheep
- 15 pigs
- 1,200 chickens
- 500 kg fish
- 16,500 eggs
- 7,700 litres milk
- 1.5 tonnes fats and oils
- 4,000 loaves bread
- **4 tonnes potatoes**
- 8 tonnes fruit
- 10 tonnes vegetables
- 800 kg chocolate and sweets
- 400 kg nuts
- 3 tonnes sugar
- 5,500 litres soft drink
- 1,500 litres wine
- 18,000 litres beer

Each year we eat a figure-wrecking 530 kg of food!

Our appreciation to Allan Borushek's Pocket Calorie and fat counter, 26th Edition for permission to reproduce this article.