

EYES ON POTATOES

A U S T R A L I A N P O T A T O I N D U S T R Y C O U N C I L N E W S L E T T E R

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New nutrient information package

A new nutrient information package called *Crop Test* Potato Crop Nutrient Evaluation System has been developed to assist growers, agronomists and field officers. The package can also be used by anyone wanting to develop a better understanding of crop nutrition in potatoes.

Crop Test summarises our current knowledge of crop nutrition in potatoes and includes information from research carried out in Australia and overseas.

Users of the package can identify symptoms of nutrient stress, interpret plant test data and access information on plant analysis and nutrition of potatoes.

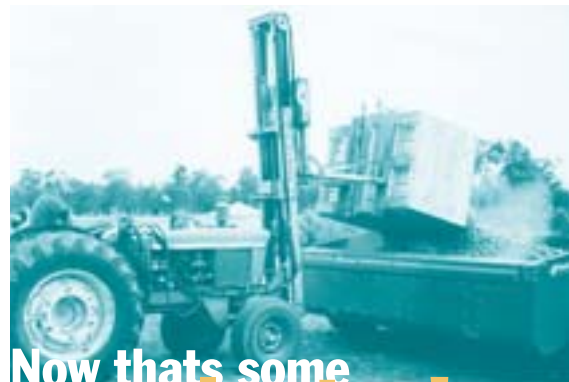
The package consists of a computer CD-ROM, manual and user guide. Most of the information on the CD-ROM is also in the manual. The CD-ROM has the added advantage though of providing users with tools to interpret test results for petioles and leaves and then presenting the results as easy to understand charts.

The cost of the package is \$390. To find out more about *Crop Test* send a request and your contact details (Name, organisation, address, phone and fax) to :

Norbert Maier
SA Research and Development Institute
GPO Box 397
Adelaide SA 5001
☎ (08) 8303 9400
or fax (08) 8303 9424.

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Now that's some planter!

Seed growers from southern Victoria visited growers in the Riverina and Northern Victoria to gain a better understanding of their needs. While on Geoff Moar's property at Berrigan the growers watched a paddock being sown. One grower quipped as the seeder completed the return run, "That would have been a days work for me!"



Welcome...

Another year has nearly passed. And we haven't even blinked yet. Where's it gone?

The year of 1998 has presented us with a number of changes and challenges, many of which we have discussed in *Eyes on Potatoes*. Water reform, competition policy, QA and new seed technologies to name a few.

In this issue we confront the new electronic technologies. John Doyle, a potato grower from Berrigan in NSW, tells us about his experiences with

learning about the Internet and we look at how the Internet is being used in the US potato industry - thanks to a report from Barry Philp who was in the US recently. We also take a look at how the millennium bug might affect people in the potato industry and give some tips for making sure it doesn't affect your business.



The Eyes on Potatoes editorial team wish everyone a very happy Christmas and extend our best wishes for 1999.

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

EYES ON POTATOES



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Eyes on Potatoes is distributed free of charge to all participants of the Australian Potato Industry with assistance from the Horticultural Research and Development Corporation and the Potato Levy.

A farmers experience with the Internet



The first time I started to get interested in the internet was at a Cobram Computer Store where I went in and asked them about it. Later on I saw an article in the Land magazine where Rural Press was offering the facility called Farming Online. It wasn't very expensive. I faxed them one of their coupons and they sent back the instructions on how to install it. That would have been two years ago.

My main aim of getting the internet was to access information from overseas for our business, but there were lots of other things on it. Through Rural Press they pointed out the good things about it, such as the weather. It has also become a big part of the kids life as well - school projects etc.

It was a bit awkward at first when we only had one telephone line as we would have trouble getting on. Now we have another line just for the internet, it is really good.

It probably took us about half an hour to set up. If we had any problems we could call Access One (ed - one of many Internet Service Providers or ISPs that users can use to hook into the internet), they had a 24 hour problem line. It was very simple.

To use the internet it costs us \$5 an hour plus STD charges, which is a problem. I try to call out of hours if I can, like after 7.00pm when the rates are cheaper. I mostly use it when the kids have gone to bed, after 9.00pm. If I want to find something out though I will look at it at any time of the day. It does not really worry me if I am paying a bit extra for the phone call.

John Doyle's major enterprise is potatoes. He grows around 220 ha of potatoes in two crops per year on his farm at Berrigan. About 100 ha is grown for processing using the varieties Shepody for French fries and Atlantic for crisping. He also grows around 100 ha of Coliban and Sebago for the fresh market. John also grows about 20 ha of his own seed.

Email came later. It took us a while to realise what email was and how to use it. It will be a major thing in time. We are using the email more as we get used to it. Not being a good typer was a little bit hard. I am still not a good typer!

Once we had an email address I found a lot of other people also had them. Friends I had met over the years. We could communicate that way. We will be using more email I imagine as we get better at it. The kids are using it to mail to their cousins.

Frito-Lay were using email a bit with us last year. The agronomists were up here taking photos of trials and they sent back the photos on the internet using a program called Winzip. They were very clear on the computer and we could print them out.

Initially I wanted to look up potato diseases so I went into the World Wide Web and chose Yahoo or Lycos (ed - these are referred to as search engines and they enable users to find what they want on the internet) and put in powdery scab for instance. Thousands of references would pop up and I would have a look at a few.

One thing about potatoes worldwide, we all have the same diseases. It is amazing how relevant a lot of the information from overseas is to what we are doing in the Riverina. All the diseases, the management and the chemicals.

Anything I thought would be relevant to potatoes I would look up. Chemicals we use - metham sodium for one. I looked at the different sorts of nutrition work such as calcium in tubers. Over the years there has also been a lot more machinery companies that have photos of machines, specifications and whatever.

We use the internet for the Murray Irrigation Water Exchange. If you have water to sell it is listed on the exchange - the megalitres you have for sale and the price you want. If I want to buy water I can view the options on the internet and ring Murray Irrigation to tell them to hold a particular parcel. I then have 24hrs to go and pay for it. It is an automatic transfer onto my water allocation where as with the old system it was a monthly exchange or a tender system which took two to three weeks to get the transfer from their farm to my farm.

Since we got the internet we have had a lot of people come and have a look at how we use it. Most of my friends I would say are on it now, all are farmers.

As to what I would like on the internet, it would be good to have a bit more market reporting, potato prices. In time I may take orders on the internet instead of taking them on the phone or fax.

The Potato Internet Starter Pak has made it a lot easier. Hopefully it will be kept being updated. (ed - The Starter Pak is a series of internet pages with links to potato sites throughout the world. See article elsewhere in this newsletter on how to get the latest version.)

The idea of the internet with all those computers hooked up world wide makes you think. We are only a little suburb of the world now. We are part of it really. We can get information from anywhere at any time of the day. It had to be a good investment.

*John Doyle
Potato Grower - Berrigan, NSW
☎ (03) 5885 8255*

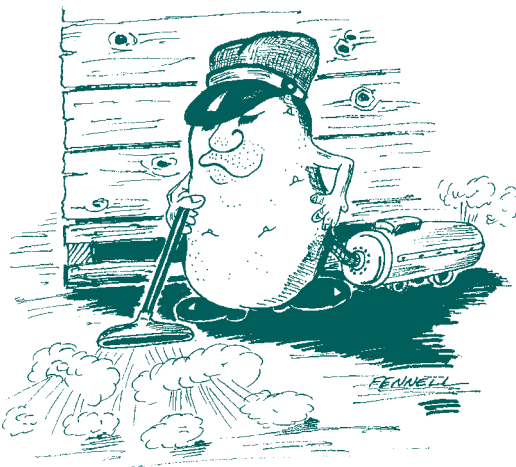
Berrigan

• **Sydney**

• **Canberra**

Dirty potato sheds

are for suckers



During recent workshops and farm visits in Victoria, Dr Stuart Wale of the Scottish Agricultural College, Aberdeen, recommended a once or twice daily vacuuming of the major traffic areas in seed potato sheds. This is one of several hygiene measures being implemented by seed growers in Scotland as they tackle the war against skin diseases.

One of the major challenges facing both the Scottish and the Australian potato industries is skin blemishing diseases. Dust in grading sheds and stores has been identified as a source of the organisms that cause powdery scab, *Phoma dry rot* (gangrene), *Fusarium dry rot* and silver scurf. This dust can then cause contamination of otherwise healthy tubers in the store.

Contaminated rollers on grading lines have also been shown to spread disease to healthy tubers. Also, the silver scurf fungus can produce thousands of spores on diseased tubers in storage resulting in contamination of relatively healthy stocks as well as increased disease levels overall.

The Scottish potato industry sees hygiene practices as being integral to disease management. It has been shown that considerably less disease developed on tubers kept in a cleaned store than in a typical commercial seed store. Seed growers are encouraged to use high pressure hoses with disinfectant to wash down equipment, bins, shed and store floors, walls and ceilings before harvest time.

Vacuuming of the major traffic routes in sheds during grading operations, perhaps at lunch time and at the end of the day reduces the dust load in the air. This allows us to reduce the risk of contaminating seed stocks as well as meeting Occupational Health & Safety Laws such as those recently introduced in the United Kingdom.

Researchers found that sweeping only redistributed the dust around the shed adding to the risk of contaminating potatoes. Vacuuming is better than sweeping for minimising dust levels with a ride-on cleaner considered to be one of the best options.

Some growers have gone even further and have separated the handling, grading and storage of early generation seed (G1 & G2) from that of later generations. This includes separate stores for the early and late generation seed. Storage areas and grading areas are in separate 'rooms' within the shed complex.

A new APIC/HRDC project will develop cleaning and disinfection practices for Australian potato farms. One important aspect of this project is to evaluate the effectiveness of a range of disinfectants against the organisms causing the major potato diseases.

Dolf de Boer
Agriculture Victoria
☎ (03) 9210 9277

WANTED LATE BLIGHT!

Anyone suspecting they may have late blight (Irish blight) in their potato crop please contact Dolf de Boer (Victoria), Jason Dennis (Tasmania) or André Drenth (Queensland).

This team of pathologists needs samples of late blight from anywhere around the country so they can identify (fingerprint) each of the strains of the fungus that occur in Australia. The purpose of this HRDC funded work is firstly so that the industry can be sure that we don't have the very destructive strains that are now prevalent in the USA, Europe and some parts of Asia and secondly to recommend steps to make sure it stays that way.

These very destructive new strains attack crops earlier in the growing season than the older strains and are more aggressive, attacking stems directly leading to rapid

and large-scale destruction of the crop. They have a greater chance of being spread on seed potatoes and will survive in soil for several years between one crop and the next. These strains are resistant to Ridomil®, which is the current means of control for late blight in Australia.

If the new strains get to Australia, late blight is likely to become more widespread and common and will be very costly and difficult to control. So action is needed now.

If you think you have late blight, please contact one of the team on the numbers below.

Dolf de Boer, Vic, (03) 9210 9222
Jason Dennis, Tas (03) 6421 7695
André Drenth, Qld (07) 3365 4772



First seen as small pale to dark green, irregularly shaped spots. Under warm, still and moist conditions these spots grow within hours to large brown to purplish black lesions which eventually kill the entire leaflet and spread to the stem killing the entire plant.

A pale green halo is often present around the outside of the lesions. Under moist conditions, a white downy mildew appears at the edge of the lesions, mostly on the underside of the leaf. The disease first appears as 'islands' of affected plants in a crop.



Neville Beaumont (left) from Dorrigo who represents merchants and Dom Della (right) WA grower representative talk to Dr Dolf deBoer (centre) a disease specialist from the Institute.



Annual General Meeting

At the Annual General Meeting four new councillors were appointed to APIC. Two new processor representatives, Milton Rodda (Deputy Chairman) from McCain and Tony Gletzel from Snack Brands Australia, and two new merchant representatives, Geoff Biggs from Victoria and Peter Toohill from Queensland. The grower representatives remain unchanged, Ian Rickuss (Chairman) from Queensland and Max McKenna from Tasmania, as does the Secretary/Treasurer Max Walker from Tasmania.

I would like to thank the outgoing councillors Jeff Peterson from Smiths, Phillip O'Keefe from Simplot, Ron Cumming from Queensland and Les Horsfield from Victoria for their contribution to APIC.

Strategic Plan

After changes are made to the draft of the Strategic Plan by APIC Councillors it will be sent out to industry and government groups around Australia for comment. The revised plan will then be reviewed at the APIC meeting next May.

Proposed change of structure

A discussion paper on a new structure for the potato peak body has been presented to APIC by Geoff Moar, Chairman of the AUSVEG Potato Group. The paper had also been presented to the AUSVEG Potato Group the previous day for consideration. APIC will discuss the issue at its May Meeting.

HRDC Report

The AusHort R&D Committee, which has the responsibility for funding major projects that have relevance to a range of horticultural industries, have agreed to support three projects in 1998/2000. These are :

- An environmental audit to enable the horticultural industry to identify any critical R&D issues in the area of environmental management.
- Plan for managing the input from horticultural industries to the review of existing chemicals by the National Registration Authority. The first chemical to be considered under this plan will be endosulfan.
- Improved labelling of pesticides. This project will address inadequacies and inconsistencies in pesticide labelling.

Ian Rickuss
APIC Chairman
☎ (07) 5465 8247

R&D Committee considers funding proposals

The APIC R&D Committee met at the Institute for Horticultural Development at Knoxfield in Victoria on the 20-21st October to assess the applications for funding that had been submitted to the Horticultural Research and Development Corporation (HRDC).

Fifty seven concept development proposals had been submitted, seeking a total of nearly \$3 million. Of these 31 were rejected. The authors of the remaining project proposals will be requested to submit a full proposal by the 31st December for consideration at the R&D meeting in March.

While at the Institute, the R&D Committee took the opportunity to talk to researchers and learn more about the work being carried out at Knoxfield for the potato industry.

The need to interact more with researchers had been identified by the committee as something important for both committee members and researchers. R&D Committee meetings are now rotated between research centres to promote greater interaction. The next R&D meeting will be held in Devonport Tasmania in March.

Dr Jack Meagher
Chairman

The APIC R&D Committee consists of one grower representative from each state, a representative from each of the crisping and french fry processing industries, a merchant, the Program Manager for potatoes from the Horticultural Research and Development Corporation, Secretary, an adviser on Technology Transfer and an independent chairman with scientific training.



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Pt Adelaide Business Centre 5015

FOR YOUR NEAREST RESELLER

National Seed Potato Certification Standards

The Australian Potato Industry Council (APIC) has initiated a project to develop national seed certification standards.

The first stage of this project is to determine if national standards are needed. We are in a period of major change such as the introduction of new seed technologies, ownership of propriety lines protected by Plant Breeders Rights, establishment of propriety breeding programs and establishment of seed and supply chain management companies. It is therefore necessary to determine if our current need for national seed certification standards will continue given the way the industry is evolving. Otherwise money could be wasted on a system that may become redundant.

The first stage was due to be completed by the end of November. The Steering Committee will review the outcome and determine if the project continues. If the project is given the go ahead then the next stage is to develop the standards.

Why do we need the standards

Certification of Australian seed crops is currently administered by individual states, with each having a different standard, terminology and system of administration. This creates confusion for purchasers of seed on both the domestic and overseas markets and makes it difficult to effectively market and promote Australian seed, especially in the rapidly growing South-east Asian markets.

National Seed Certification Standards would simplify our system making it easier for customers domestically and overseas, and enable the seed industry to more effectively capitalise on opportunities for growth.

Project team

This work is being undertaken by a Melbourne-based consultancy group, The Expert Foundation, who have put together a team of people with a lot of

expertise in potatoes. The team includes:

- Dr Rob Brown, Chairman of the Foundation, Melbourne;
- Dr Tony Kellock, formerly Industry Manager, Potatoes at the Institute for Horticultural Development, Toolangi;
- Dr John Marshall, Institute of Crop & Food Research, Christchurch, New Zealand; and
- Dr Ian Muirhead, formerly Director, Division of Plant Protection, QDPI, Brisbane.

The project is managed on behalf of APIC by Russell Sully at IHD Knoxfield (phone 03 9210 9222), with a steering committee of Jeff Peterson, Geoff Moar, Keith Blackmore, Malcolm Kentish, David Montgomery and Frank Mulcahy.

The consultants will be talking to many people throughout the industry but also welcome comments from individuals and groups. In the first instance contact:

Dr Rob Brown
The Expert Foundation
 Level 50, Rialto South Tower
 525 Collins St
 Melbourne Vic. 3000
 ☎ (03) 9614 3088
 Fax (03) 9614 3099
 Email rob.brown@rialto.com.au

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-HWH TECHNOLOGY-

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 Fax: (03) 5336 3977

Larry Hilder

PCN Inhibiting interstate trade in potatoes

AUSVEG Potato Group will investigate current restrictions placed on interstate trade in potatoes due to Potato Cyst Nematode (PCN) and other soil borne diseases. They will seek development of national protocols based on scientific evidence rather than state boundaries.

Fresh Marketing Levy

The Fresh Marketing Levy is in the final stages with it likely to be in place by the end of April 1999. On this basis AUSVEG and the Australian Horticultural Corporation will shortly be bringing together the Project Management Group to commence the first planning stages of a National Marketing Program.

R&D grower information sessions

The Potato Group of AUSVEG has agreed to work with the Vegetable Group to run grower Research & Development (R&D) information sessions in each state in the second half of 1999.

Growers invest a significant amount of money into R&D and it is important they have the opportunity to talk to researchers and hear the results of their work.

The new Industry Development Plans, which are in the process of being developed, will also be discussed.

Minor use chemicals

As reported in the last *Eyes on Potatoes*, the Vegetable R&D Committee approved a project to develop a system to assist in the registration of minor use chemicals. Industry groups including RIRDC and AVCARE are contributing to this project.

The project is progressing well and a system should be in place by early next year. Growers and grower organisations will then be able to nominate chemicals for minor use registration. These nominations will be considered and prioritised by the R&D Committee before allocating funding.

Brian Newman
Executive Director
AUSVEG
☎ (03) 5790 5247

Pink rot research update

Work is continuing on the development of management strategies for the control of the soil borne fungus disease, pink rot.

New paddock test

If you have had a problem with pink rot in the past and would like to help us 'test' out a new test for the disease please phone us on (08) 8303 9587. The test aims to help identify paddocks that may give rise to problems or indicate sections of paddocks where excessive irrigation should be avoided.

Checking for Ridomil resistant strains

Recent work in North America has shown that some strains, which are common in many of their potato growing areas, are not controlled by Ridomil®. The reason for this may be the development of strains that are tolerant to the chemical. This may have occurred due to the widespread use of Ridomil and related products to control late blight, which has been a major problem in the United States.

In Australia these products are not used as often which may explain why the strains of pink rot fungus tested here are still controlled by Ridomil.

We need to continue monitoring the situation in Australia so we are testing a large number of Australian samples to determine if the disease strains we have can be controlled by Ridomil. We would be interested in receiving more samples and welcome growers sending infected tuber or root samples for testing. This would also be done at no cost to the grower except for postage.

Due to our reliance on Ridomil for pink rot control we are continuing to evaluate alternative chemicals as well as biological methods of control.

Pink rot survival

Our investigations have also shown that the pink rot fungus can survive inside the tuber and in infected soil on the tuber surface. Washing the tubers to remove the soil or soaking the seed in Ridomil reduced the incidence of pink rot. Further work is required in this area to develop seed treatments to reduce the spread of pink rot through infected seed.

Bill Davoren and Trevor Wicks
South Australian Research and Development Institute
☎ (08) 8303 9587

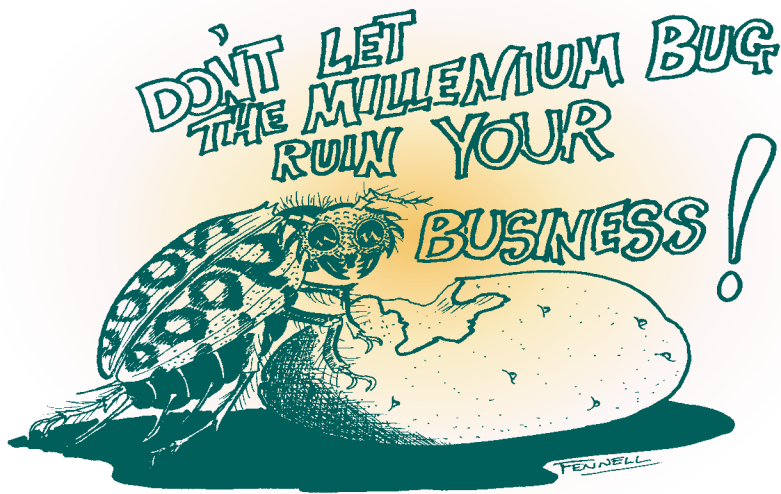
Don't forget...

Agriculture Victoria's - Potato Field Day "Potatoes for Quality & Profit" on Thursday, February 18, 1999

at *Institute for Horticultural Development - Toolangi*

Research & development demonstrations
breeding
post harvest
biotechnology
Trade displays
pest & disease
export
benchmarking
Guest speakers

For further information, contact Tony Allen at IHD Knoxfield
☎ (03) 9210 9222



Most people by now should have heard of the Millenium Bug or Year 2000 problem. If you haven't, then you better pay attention, you could be in for a very rude shock!

The problem

The Millenium Bug is due to computer chips being programmed with the year as a two digit number (ie. 98) instead of four digit number (ie. 1998). You may think, so what! If it was not for the fact that we are about to enter a new century, it probably would not be an issue for most people.

When we enter the year 2000 a two digit year becomes 00, so does this represent 1900 or 2000? Does 01 represent 1901 or 2001? For a computer chip that has to work out the difference between two dates which will it use?

Implications

The end result of this relatively simple problem has far reaching consequences, even for farmers. Not only are computers potentially affected but also any piece of equipment with a computer chip that uses a date.

Besides computers, other devices that maybe affected include such things as packing shed machines, pump controllers for irrigation or waste water systems, coolroom controllers, vehicles, fork lifts, alarm systems, fax machines, video players, photo copiers and microwaves.

In some cases what the date is used for is not overly important, such as a warning light for the next service. What is unknown in many devices is the impact of the error caused by the incorrect date. In some instances a device may shutdown or become inoperable.

Not all devices with a computer chip will be affected. Many will operate as expected. The difficulty is knowing what devices will cause a problem.

Other peoples bugs

You also need to be aware that problems that other people have could also impact on your business. If a computer in a supplier's store is not functioning correctly then you could be billed incorrectly. If the government and financial institutions do not address the problems in their systems in time then they could provide misleading and inaccurate information.

What could happen

There are three possible scenarios with devices that use dates - they continue working without problems, they stop working or become obviously faulty and thirdly they continue to work without major change but not in the way they were intended.

If a device stops you know there is something wrong. If the electricity company sends a bill for \$4,000 when you expected a bill for \$140 then you know something is wrong. These problems, although annoying, are usually easily identified and fixed.

One major concern is if a device fails and it is critical to the operation of your business. Can you afford to have an important piece of equipment out of action? Will there be service people available to fix it quickly if there are a lot of other people affected? In this instance prevention is likely to be better than a cure!

Another problem is when a device continues to operate but supplies incorrect information that is not readily recognisable as being wrong.

Not everything happens at midnight

Not all problems will happen on the night of the changeover from 1999 to 2000.

Boeing, who produce jets, have been experiencing problems since 1993

because they order seven years in advance for some of their equipment. As of December 1997 less than 10% of 128 large US companies had Year 2000 problems. As of March 1998 just over 35% of these companies were experiencing problems. (Source Byte - July 1998)

My computer is Year 2000 compliant

Be careful. The computer you bought maybe compliant but is the operating system and software? Manufacturers will only support what they produce. Even fairly recent versions of some software including products from big name brands such as Microsoft have problems. Many of these companies provide information on identifying problem software, and where practical, provide software to fix the problem.

What to do

The first step is to check your computer and software. Financial programs are particularly of concern. Not because they are more likely to be affected, but rather the implications if they are. There are a range of software packages available to check computers and software. There is no excuse to be unprepared.

Date problems can occur in the software that comes with the computer, the operating system (eg Windows), programs that you or the store installs (eg. spreadsheets, databases) and data you have entered. The latter is a situation when the user creates their own Millenium bug. That is, they put in two digit dates (ie. 98).

Check for devices with computer chips

The next step is to identify devices that have computer chips in them that may use dates. This can be quite difficult at first. It is not always obvious that a device is using a date. For example, some cars and trucks have a maintenance program which alerts a user when a service is required. No date is usually displayed.

To start with do a bit of reading about the problem to get some idea of the devices that are most likely to be affected. Secondly, create a lined table with a wide column, two narrow columns and another wide column. In the first wide column put **Device**, in the two smaller columns put **Importance** and **Status** and in the final wide column put **Comments**.

Now walk around the farm and list any

Device	Importance	Status	Comment
Irrigation pump controller	High		Ring manufacturer
Fork Lift	Medium	✓	Manufacturer gave OK
Small tractor	Low	✓	No electronics
Coolroom	High	?	Company gone out of business
Large tractor	High	✗	Ring manufacturer
Computer with finances on it	High	✗	Upgrade finances program
Fax machine	Low	✓	Tested machine with various dates
Mobile phone	Low		Waiting call back from company
VCR	Low	✗	Old model, company not sure
Microwave oven	Low	✗	Only two digit date on display Checked with manufacturer

devices that are likely to have computer chip in them focusing on those most likely to use dates.

Next to each item indicate the importance of the device if it were to operate incorrectly. If the video went bung it may be catastrophic for the cricket but it would not be the end of the world. So this item could be marked low in importance. If your car has a yearly maintenance alert then this maybe marked as medium or high, mainly from a safety point of view. A computer with all your financial details on it would be marked as high because of the impact of errors on the viability of the farm. In the Comments column indicate

what action is required or what has been done, (eg 'rang manufacturer, is OK')

By creating a list you have achieved two things. Firstly you have identified potential trouble spots which you can monitor more closely. Secondly, you have identified the most important devices which need to be checked out with the manufacturers.

If you are not confident about doing this task then you may need outside help. Be sure to check out the people you use as there will be some dodgy operators trying to capitalise on the problem.

No such thing as risk free

It would be nice to be totally confident about what will happen but the reality is that there are a lot of uncertainties. The best you can do is minimise the risk and be aware of the possibilities. There is a lot of information available and a bit of reading will give you a better feel for the problem.

**For more information contact
Year 2000 Hotline
1800 11 2000**

A lot of information is available on the internet. Most sites also have links to other sites of interest.

Australian sites

www.y2k.gov.au

(NSW site with links to government sites in other states)

<http://www.y2kregister.com.au/>

Overseas sites

www.cfbmc.com/y2k/english/index.html

(Canadian Federation of Agriculture)

aceis.agr.ca/policy/y2k/

(Agriculture and Agri-Food Canada)

Leigh Walters

Technology Transfer Project

☎ (08) 8232 5555

Crisping industry shakedown

As most people would have realised the Smiths Snackfood Company was taken over by the US company Pepsico which owns Frito Lay Australia. As a result of the takeover most of the old Frito Lay company was sold to Dollar Sweets and now trades as Snack Brands Australia. The Smiths Snackfood Company stays much the same except that it is now a part of the Pepsico empire.



Murray joins Technico

Murray Hegney recently left the Potato Marketing Corporation of Western Australia (Western Potatoes) to join Technico Pty. Ltd. as its Agronomy Manager, Western Region/Asia.

During his time with Western Potatoes, Murray assisted the WA industry to introduce a new Certified Seed Potato Scheme, together with a SQF2000 Quality Assurance program for certified seed production.

Many in the WA industry were disappointed to be losing his services at Western Potatoes. However, Murray said his new role with Technico enabled him to build on his experience with potato and seed potato production and to explore the many opportunities for seed potato exports and production in Asia. He will work with industry to assist in the successful adoption of the new TECHNITUBER® seed potato technology.

From his office in Perth, Western Australia, Murray will be responsible for facilitating Technico's expansion into WA and throughout Asia.

☎ Murray can be contacted on (08)9313 6268.

Last season, the research group working on the HRDC project to genetically engineer virus resistance into potatoes planted their first field trial at Toolangi.

Nearly 500 plants, representing seven different engineered lines, were compared to non-engineered plants. After growing for four and a half months, the yields of all lines were similar, indicating that the introduced genes didn't alter the plants' agronomic performance.

Permission is being sought from the Genetic Manipulation Advisory Committee* to run another field trial where the aim would be to infect plants with virus and get more information about performance.

** The Genetic Manipulation Advisory Committee is responsible for overseeing the development and use of novel genetic manipulation techniques in Australia. It reviews such work and provides advice on the management of potential hazards to the community or the environment.*

Jim Hutchinson
Agriculture Victoria
☎ (03) 9210 9222

Development of new food hygiene standards for Australia

ANZFA, the Australia and New Zealand Food Authority, is currently developing new food hygiene standards for the production handling and preparing of food.

These standards focus on industry food safety programs, food hygiene practices, food premises and equipment.

The new standards will specify what industries need to adhere to with regard to critical issues like food safety, traceability and product recalls.

Exactly how this will impact on potato production has not yet been finalised but the current nationally funded QA project is considering these issues as they arise and including them in the QA package currently being developed.

Eric Coleman
Potato QA project
☎ (03) 7546 2222

The Victorian Potato Growers' Council has re-emerged from its major funding crisis with perhaps a little more wisdom and frugality, but certainly a renewed enthusiasm for tackling the major issues confronting the industry.

The Victorian Potato Growers' Council has been the peak body to represent potato growers in Victoria for the past 5 years. It is a commodity council under the constitution of the Victorian Farmers' Federation, and brings together the seed growers, crisping growers, French fry growers and fresh growers into the one body.

The funding crisis that crippled the Potato Growers' Council emerged late last year and there has been a 12-month period where the organisation has been in limbo. After a drawn-out process of negotiation with the parent body, the Victorian Farmers' Federation, there is now agreement as to how residual debts and operational commitments will be met.

For those involved in the negotiations, it has been a difficult process and the Potato Growers' Council will be a much more financially capable organisation as a result.

With the funding crisis behind it, the Potato Growers' Council will now be directing its activities in a number of key areas:

- reviewing and updating PCN protocols and acting on recommendations from a specialist task group
- ensuring that every Victorian potato grower has the opportunity to access current research information and industry matters;
- taking a greater role in determining research priorities at a state level; and
- addressing the issue of a fresh market levy and ensuring that Victorian growers are both well-informed and have their views heard.

During the funding crisis, the Potato Growers' Council sought advice from growers around Victoria as to whether they wanted the organisation and whether the role that it played was worthwhile. The result was a strong endorsement from *grass roots* meetings of growers. A clear direction was given that we should overcome the financial difficulties and move forward. This is what is now happening.

Tony Pitt
Executive Officer
☎ (03) 5623 4788

Developing soil and water management systems for potatoes on sandy soils

(The following project was omitted from the set of HRDC project updates in the 1998 edition of Potato Australia)

(PT 97026 - Project started September 1997)

Many sandy soils in south east Australia have non wetting top soils and poorly drained sub soils. Potatoes grown using traditional hilled rows on these non wetting sands present special irrigation problems as the plant root zone is difficult to keep at ideal moisture levels.

Two trials were planted in the South East of SA (Callendale and Western Flat) in the 1997-98 season to evaluate different soil treatments and management systems aimed at improving moisture penetration and even wetting of the plant root zone. Treatments included the use of wide beds, under row ripping (after planting and bed formation), clay soil

amendments and mulching.

This first season's results require further confirmation in the coming 1998-1999 and 1999-2000 seasons. Deep under row ripping to overcome compaction (created by planting and hilling operations) has given the most significant yield increases to date. Some soil surface mulches gave good yield increases, but resulted in harvester blockages. More detailed measurements of soil moisture levels and physical characteristics will be made in the coming two seasons.

Bob Peake and Bill Binks
Primary Industries & Resources SA
☎ (08) 8724 2921

The Internet

– can it improve technology transfer to the Australian potato industry?

There has been a lot of “hype” about the internet and how the information super-highway will revolutionise access to information. Despite rapidly increasing computer ownership and access to the internet, the use of electronic information systems by the Australian farming community is in its infancy.

To examine the future role of the internet and its potential to serve the Australian potato industry, Barry Philp undertook a study of electronic information services being provided to the US potato and horticulture industries.

Universities dominate the electronic information system in the US, with many web sites containing huge volumes of technical information. Essentially these are large electronic libraries. Many universities also use the internet to provide information about their experiment stations, county offices, staff, contact details and project activities. Key users of this information are often urban residents, students and researchers as well as farmers and agribusiness companies.

The more interesting uses of the internet observed in the US are for delivery of services that can be used in day to day crop management. Some of these services are beginning to be supplied by commercial companies, and include:

- regularly updated newsletters and bulletins (often weekly) that provide information about the changing

seasonal conditions, crop warnings and outlooks

- constantly changing information such as weather forecasts and prices
- predictive management tools (mainly using weather data) for crop management, irrigation scheduling and disease forecasting

One of the main constraints on farmers using the internet is the need for keyboard and computer operating skills. In the not too distant future, TV, telephone and internet technologies are expected to converge into a single communication network. This will bring simpler operating systems that do not require special computer skills.

One of the most successful farmer electronic information services in the US is provided by the Data Transmission Network Corporation (DTN) from Nebraska. The system works in the same way as satellite pay TV. For a subscription fee, growers can purchase a range of different information services with the most popular being weather and market prices. The success of the DTN system is associated with it being easy to use and providing constantly updated information.

The development of a web site would provide opportunity for all growers, agribusinesses, researchers and other people servicing the Australian potato industry to access large quantities of

information in a cheap, easy and convenient to use “one stop shop”.

However for this service to be successful in the long term, it must be moved from being an electronic library to providing more interactive services.

A web site also may be an excellent vehicle for the Australian potato industry to promote its products and industry to the urban community, and satisfy demands from students for information on the industry.

An industry project being developed by Nathalie Jarosz, Leigh Walters and myself, is doing some of the important groundwork and industry consultation for establishment of an Australian potato industry web site. From this will emerge a sound strategy for the Australian potato industry to move its information delivery into the 21st century.

Further information

A report “An overseas study of electronic information services for the Australian potato industry” (project PT 98017) prepared by Barry Philp will be available from HRDC.

☎ (02) 9418 2200

Barry Philp
Manager Industry Development Fruit, Vegetable & Ornamental Industries Primary Industries & Resources SA
☎ (08) 8389 8821



Al Mosley from Oregon State University manages an effective, highly linked web site for the US potato industry from this office.

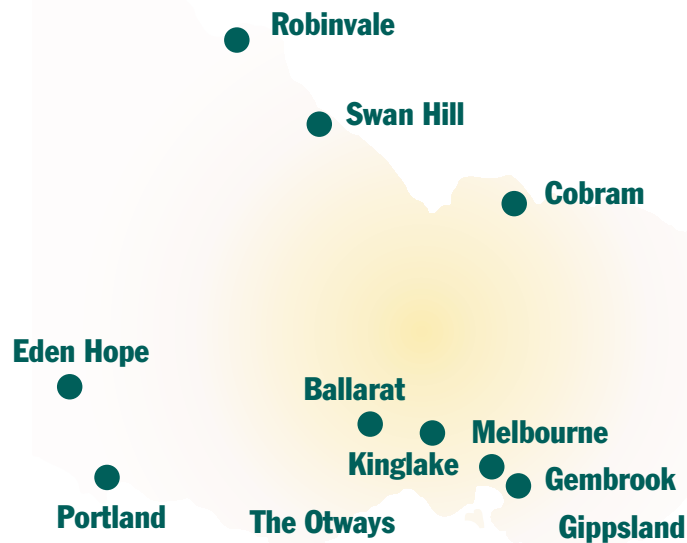


OUT & ABOUT

In August 1998 Roberston and Crookwell growers were invited to visit ANU and CSIRO Plant Industries and Entomology in Canberra and inspect the research work being undertaken on behalf of the potato and other agricultural industries. This was part of the project “Sustainable Potato Production in Highland NSW-Stage III”.

People present in the picture are: left to right

Trevor Donovan (right on the edge), Jon Hill, Snow Donovan, Tony Fisk, Richard Millum (Entomologist - CSIRO and David Carter. Visiting CSIRO-Entomology Canberra.



The potato industry in Victoria

Overview

Victoria continues to be the major potato production state, supplying around one-quarter of the nation's crop. However, in recent years, total production has declined slightly, in contrast to expansion in some other states. There has also been a shift in focus from the fresh market towards processing potatoes, which now account for more than 50% of production. Seed potatoes represent about 10% of Victoria's total crop, but about 55% of Australian seed production.

Potatoes in Victoria are grown in a range of soils and climates. Traditionally, production has been concentrated in the southern regions of the State - the Central Highlands (Ballarat), Gippsland, the Otways, Kinglake, Gembrook, the Bellarine Peninsula and Portland. However, the advent of centre-pivot irrigation has seen the emergence of large-scale production on sandy soils along the South Australian border (Edenhope) and the Murray River (Robinvale, Swan Hill, Cobram). These soils, and the warmer climate, provide management flexibility and the opportunity to grow more than one crop per year.

Alongside these changes, there has been a dramatic decrease in the number of potato growers in Victoria, from more than 1000 in 1978 to 460 in 1998. The total area of production has declined only slightly in this period, whilst average yields have increased substantially.

Market sectors

Seed

By producing more than half of Australia's certified seed, Victoria's seed industry underpins the country's fresh,

crisping and French fry industries. Victorian seed potatoes are grown in Gippsland, the Central Highlands, Kinglake, the Otways and Portland. Cooler climates are generally utilised to reduce the risk of virus diseases transmitted by aphids.

More than 40 certified seed varieties are produced under the Victorian Seed Potato Certification Scheme. The Victorian Certified Seed Potato Authority (ViCSPA) manages the rules for certified seed production, provides field and tuber inspections and arranges quality assurance for minituber production by accredited laboratories. The commercial aspects of certified seed are organised by the Victorian Certified Seed Potato Growers' Committee.

There are currently about 120 certified seed growers in Victoria. In 1996/97, they produced 32 900 t of certified seed from 2080 ha planted, an average yield of 15.8 t/ha. The major varieties grown are *Atlantic*, *Coliban*, *Sebago*, *Russet Burbank*, *Sequoia* and *Desiree*.

French fries

Almost all of the Victorian potatoes used for French fries are grown under contract for McCain Foods. Over 100,000 t per year are produced by about 90 growers, mainly in the Ballarat district, where McCain has a processing plant. The worldwide growth in the food service industry is increasing the demand for processed potatoes, and McCain is looking to increase their Victorian quota to 150,000 t.

Russet Burbank is the dominant variety grown for French fries, with *Kennebec* and *Shepody* providing early season supplies.

McCain growers are faced with downward pressure on the contract price offered by the company. Financial benchmarking studies made with Agriculture Victoria in the past two years have revealed possible strategies for growers to reduce production costs and maintain or improve profitability. To assist their growers to produce more efficiently, McCain offers a crop monitoring service which checks on irrigation, nutrition and pest control needs.

Crisps

As for French fries, Australian and worldwide consumption of potato crisps is increasing and is forecast to continue to rise. In Victoria, potatoes for crisping are mainly grown in Gippsland, but increasing areas along the Murray River and the SA border are being planted for crisp production. The potatoes are grown under contract to processing companies, with premium prices paid when specifications are met. The industry is reducing its requirement for stored potatoes in favour of direct supply.

Considerable effort has gone into breeding varieties with suitable size, shape, fry colour, specific gravity and storage characteristics for producing high-quality crisps. Whilst the USA variety *Atlantic* dominates crisping production, varieties such as *Tarago*, *Dalmore*, *Catani* and *Wilstore* (all bred by Agriculture Victoria in conjunction with HRDC) have also been adopted. Company-funded breeding of new varieties is continuing. The Potato Crisping Research Group has played an important role in variety development and it continues to assist the crisping industry in all aspects of production.

Fresh market

In Victoria, fresh potatoes are sold through the Melbourne Market, interstate wholesale markets and merchants and to supermarket chains via packers. The main varieties produced are *Sebago*, *Coliban*, *Sequoia* and *Desiree*; others include *Bison*, *Kennebec*, *Winlock*, *Wilwash*, *Bintje*, *Kipfler*, *Toolangi Delight*, *Purple Congo* and *Snow Gem*. The majority of fresh market potatoes are harvested between January and July, depending on the district.

The move to production on sandy soils has had its most dramatic effect on the fresh market sector. The market emphasis on cosmetic appeal makes it difficult for potatoes from the traditional, heavy-soil areas to compete with the bright, clean product from sandy areas. As a result, there are fewer fresh-market growers in the Gembrook, Koroit, Geelong, Thorpdale, Kinglake and Ballarat districts. Some of these growers have moved into processing production, but in some areas fresh market production has virtually disappeared.

Export

The increasing demand for potatoes in Asia presents considerable export opportunities for Australian potato products. Exports from Victoria have increased dramatically, from \$1.3 million in 1994 to \$7.5 million in 1997. Whilst a high proportion of this is processed frozen product, increasing amounts of seed, fresh market and fresh for processing potatoes are being sought from Victoria. The main markets for these are in Sri Lanka, South Korea and Thailand.

Agriculture Victoria is currently running a project (CQ-Potato) to assist in realising the export opportunities. However, to take full advantage, the industry needs a more co-ordinated, network approach to enable it to supply large-volume orders from overseas companies.

Future - the big issues

• *New breeding technologies:*

The capacity to reduce the number of field generations to certification will see more rapid introduction of new varieties, less exposure to soil-borne diseases, more scope for new growing areas and a restructuring of the seed industry.

• *Soil-borne diseases:*

Improved hygiene to minimise the

impact of soil-borne diseases on seed potatoes will be needed to produce a high-quality, competitive product for both domestic and export markets.

• *Water availability and quality:*

A reliable supply of good water will be vital to the introduction and success of new growing areas.

• *Farm business management:*

In order to maintain or improve profitability, new approaches to some aspects of production need to be taken to reduce costs. These may include increased scale of operation and more efficient use of machinery and handling facilities.

• *Improved fresh market potato quality:*

Implementation of best practice handling methods by all members of the supply chain will be needed to maintain the place of fresh potatoes in the Australian diet.

Whilst the production of fresh market potatoes in Victoria is forecast to continue declining, the demand for processing potatoes will increase and this, along with excellent opportunities for export (in all sectors) and new production areas will maintain Victoria's position in the Australian potato industry.

Andrew Henderson
Technology Transfer, Potatoes
Agriculture Victoria



(left to right) Frank Minchinton, Bruce Fry and Stuart Wale with Frank's Weeaprounah rainfall records, during the Otways bus tour, run as part of the Seed Potato Industry Workshop at Colac in September.

Change is the issue

A total of 114 people attended the two-day workshop run by ViCSPA and the Victorian Certified Seed Potato Growers' Committee (VCSPGC) at Colac in September.

The workshop was extremely successful, with some excellent presentations, good technical exchange, some thought-provoking discussion and plenty of opportunity for informal discussions.

The decision to open the biennial two-day workshop to the whole industry saw a strong response from non-seed growers. Potato growers came from every state except Western Australia.

Dr Stuart Wale from the Scottish Agricultural College had a big impact on everybody with his talk on best practice farm hygiene. We have a lot to learn in that area.

Tony Pitt
Executive Officer, VCSPGC
☎ (03) 5623 4788

New Zealand news

The Kiwis are not far away and yet it is not always easy to find out what is happening over the Tasman. Two ways of keeping abreast of developments in the potato industry is through the *Commercial Grower* magazine and the Crop & Food Research site on the internet.

Commercial Grower

The *Commercial Grower* is produced ten times a year by the New Zealand Vegetable and Potato Growers Federation. It sometimes contains some interesting potato articles. The number of potato articles varies quite a bit between editions as the magazine covers a number of vegetables.

For anyone wanting to subscribe to *Commercial Grower* it costs \$NZ65 a year.

For more information contact:

NZ Vegetable and Potato Growers Federation Inc
PO Box 10232
Wellington, New Zealand
Ph : 0011 64 4 4723795
Fax : 0015 64 4 4712861

Crop & Food Research

The New Zealand Institute for Crop and Food Research has an internet site that contains information on potato diseases, new varieties and a range of general interest articles. It's worth a browse!

The Crop & Food Research potato page can be found at
<http://www.crop.cri.nz/cropfact/vegetabl/potato.htm>



ROUND-UP

State

Western Australia

Winter supplies of fresh market potatoes have been steady despite cold, frosty, overcast conditions. There was an improvement in supply during September due to production changes.

Wine grape plantings have resulted in a shift of some potato production from Busselton (near the famous Margaret River wine area) to Myalup, north of Bunbury. The Myalup growers plant their second crop later, in March rather than January, so they can supply fresh potatoes in September. Previously some ground stored produce from Busselton was used.

Spunta, which has been a mainstay for September deliveries, is losing favour with the market due to rapid deterioration of skin quality plus its susceptibility to break-down. *Nadine* can now be supplied in greater quantities at this time because the increased later plantings at Myalup mean the saved *Nadine* seed is mature enough for successful cropping.

The COAG (Council of Australian Governments) review of statutory marketing of fresh potatoes is complete but the report has yet to be released.

The fresh industry is continuing its adoption of quality assurance. There are now three ware growers, two seed growers and one carrier with SQF 2000 accreditation.

Simplot Australia will produce between 30-40,000 tonnes, similar to last year and with little change to contract prices and conditions.

Processing growers have re-evaluated their nutrition strategies. Fertiliser programs are being more carefully planned and are being tailored for individual crops. This follows on from demonstration crops planted last season which produced longer growth, higher yield and higher specific gravity. The valuable experience of Mark Heap of Agriculture Western Australia at Manjimup has been instrumental in encouraging growers to capture these potential gains.

Peter Dawson
Agriculture Western Australia

South Australia

Seasonal conditions in most SA potato growing districts have been reasonable in recent months. Mild spring conditions have ensured good soil preparation conditions, and summer crops in the South East of the state are being planted to schedule.

A severe hailstorm hit the eastern side of the Northern Adelaide Plains on the evening of September 22nd. It passed through this area on a 4 km wide front and caused severe damage to greenhouses and a wide range of horticultural crops. A significant number of potato crops were “shredded”, and spring production from the region is expected to be reduced by 10-15%, with most impact likely on crops scheduled for harvest in late November and December.

Mondello Farms recently opened their upgraded potato washing and packing plant at Virginia. The official opening of a completely new washing and packing plant by Potato Masters Pty Ltd at Pinnaroo is scheduled for December 2nd. Both facilities use the latest sophisticated electronic photo imaging equipment for rejection of blemished tubers.

Barry Philp
Manager Industry Development Fruit, Vegetable and Ornamental Industries Primary Industries and Resources SA

Neil Perry
Chairman of Potato Growers of SA

Victoria

The weather in the last couple of months has been variable in many areas of the state. Conditions have been favourable in the Otway district, with some planting commencing in late October. However, wet soil has delayed planting slightly around Koo Wee Rup and Thorpdale. Crops on the Murray River enjoyed good weather conditions and matured a bit earlier than usual.

Following on from last year's work, Agriculture Victoria will be conducting further trials on *Atlantic* round seed production at Thorpdale and Ballarat this season. The aim is to increase tuber numbers and the treatments will include: round vs cut planted seed; physiologically old and young seed; planting in beds vs planting in rows; and four different planting densities/spacings.

The Victorian Potato Industry PCN Working Group has developed a revised strategy for PCN, with the aims of reducing the risk of introduction and spread of PCN within the industry, assisting growers to control the pest, gaining market access and assuring markets that there is negligible risk of the introduction of PCN. The main elements of the strategy are prevention, property/paddock freedom and early detection.

Financial benchmarking data for the seed and French fry sectors have been collected for the second successive year by Agriculture Victoria and summary reports will shortly be available. Not all of the growers who participated in the first year did so again. However, for each group as a whole, the value of the benchmarking increases with each year's data, as a more complete picture of the farming business emerges. On an individual level, the value will be greatest for those who choose to participate each year.

Andrew Henderson
Technology Transfer, Potatoes Agriculture Victoria

Queensland

The above average temperatures recorded for the summer and autumn continued into the winter with all winter production areas recording unusually mild to hot conditions during the growing season. Under these mild conditions crops throughout Queensland have matured very quickly. This has meant harvesting of crops in the Lockyer Valley and other parts of south eastern Queensland was completed by the middle of November.

The growing season for the Lockyer and Fassifern Valleys and Redland Bay regions was marked with strong westerly wind events lasting on average about 3 days. This particularly affected early planted Lockyer Valley crops and dramatically reduced yields to only 12 t/ha as crops failed to recover from these stresses. Many of the early crops died off at only 12-13 weeks resulting in low yields of small tubers.

Later planted crops grew far more vigorously and both ware and processing crops were achieving yields in the order of about 35 t/ha.

Yields on the Atherton Tableland were low and on average only 25 t/ha, although occasional crops had good yields. Many of these failed to reach their full maturity and died off at only 12-13 weeks resulting in small tubers. Despite the high humidity and drizzly conditions rainfall was lower than average but the prevailing conditions resulted in high disease incidence.

Planting on the eastern Darling Downs commenced in August and generally proceeded unimpeded. Mild conditions reduced emergence time from the average of about 5 weeks to only 3 weeks. Consequently crops will be harvested far earlier than their anticipated date.

This season has seen a considerable quantity of *Sebago* ware potatoes sourced for crisping purposes. The combination of this with the low yields in major production areas and early maturation has resulted in considerable pressure on market supply and a firming of prices.

Early season crops in south eastern Queensland received prices of only \$200 per tonne but the last of these crops received about \$400 per tonne. Similarly, early season Atherton potatoes received \$320 per tonne whilst late season potatoes were receiving \$500 per tonne.

Stephen Harper
Development Extension Officer
Department of Primary Industries

Tasmania

I always judge the season by pasture growth. No matter what the crop, the best indicator during spring is as to how that crop will perform and what is happening below ground is by looking at the way pastures are performing.

Tasmania has just experienced one of the mildest winters in memory, which aided a smooth harvest of potatoes with very little down time due to wet weather. Most seed crops were out of the ground by the end of May resulting in clean dry tubers going into cool storage. The benefit of this is now being displayed by the reduced occurrence of storage break down.

The warmer winter encouraged early spring growth and rain dances were answered with a good spread of rain in most districts through August, September and the first week of October.

In late October we received the annual equinoctial blast of cold air from the South Pole which can often turn October into the month you don't need to have. This year was no different and for a period of about 10 days, crop and pasture growth was virtually stopped by cold, dry wind.

Soil preparation has been difficult because of the early spring rain and now the topsoil has dried quickly. Soil temperatures dropped for a few days as did cut seed which was suberising. Some seed which was 11 – 12°C when cut was back down to 8°C when ready to plant. Early *Kennebec* and *Shepody* plantings will take 28 – 30 days to emerge. Even though planting is in full swing, most farmers would appreciate 25mm of rain to aid soil preparation.

Planted area will be roughly the same as last year with a slight increase on the record area of seed being presented for certification.

Right now we need the pasture to grow a bit.....for the sake of the spuds.

Frank Mulcahy
Seed Production Officer
Department of Primary Industries,
Water and Environment

New South Wales

Digging of the late ware crop in the Riverina district of southern New South Wales is now complete. Harvesting started in late May and continued until late October. Crop yields averaged 20 t/ha, while farm gate prices dropped from \$240/t (dirty) in June to less than \$200/t by August. Overall the autumn crop was a disappointing one for the Riverina growers; with low crop yields, poor prices and slow digging for an over supplied winter market in the southern States.

Sowing of the early crops in the Riverina finished on time with the drier conditions in southern New South Wales over August. Crop areas for the fresh, crisping and French fry crops are the same as last year. Despite the lower irrigation allocations, wetter weather, cooler temperatures and late frosts during spring, average crop yields of 35 t/ha are expected when harvesting starts in early December.

Planting of the main summer crop in the Tablelands was delayed by the cool, wet weather in central and northern New South Wales during August and September. Sowing started in October and continued into December. Fresh, crisping and seed areas are similar to last year.

The early summer crop planting's have now emerged in the Tableland's districts, with no frost damage being reported to date.

The NSW Government announced significant changes to its recently introduced licensing requirements for farm dams in September. The seven megalitre threshold for stock and domestic use has been removed and will be replaced by a region specific allowance.

The rationalisation of the wholesale produce sector continued in New South Wales with Costa's Pty Ltd of Geelong buying Gillespie's Produce and Packing (based at the Sydney Markets) in June. The Fresh Farm Produce group also expanded its market share by becoming a supplier to the Franklin's Fresh Supermarkets.

Stephen Wade
District Horticulturist
NSW Agriculture

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requirements, see your local Incitec dealer today.

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