Coordinating technology transfer in the Australian potato industry (cont'd PT609)

Leigh Walters
SA Farmers Federation

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Level 1
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Telephone: (02) 8295 2300
Fax: (02) 8295 2399

E-Mail: horticulture@horticulture.com.au

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Leigh Walters
South Australian Farmers Federation

HAL Project Number PT96009 (July 2006)

Project Leader
Leigh Walters
Technology Transfer Manager (Australian Potato Industry)
South Australian Farmers Federation
PO Box 6014
Halifax Street
Adelaide SA 5000

Other key personnel Nathalie Jarosz (Editor potato publications)

Purpose This work reports on the development of a national communication program for the Australian potato industry.

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Media Summary

This 1996-2000 project has addressed many important communication issues in the Australian potato industry. A key outcome is that the industry is now better informed about developments in the industry, and progress and outcomes from their levy funded R&D program.

Prior to this project, the national communication output was poor with most information networks being state focused. The national potato magazine, Potato Australia, was well regarded within the industry, but was only received by some growers and hardly any technical service providers.

This project has resulted in establishment of a national distribution system with state groups working with the project officer to ensure all growers and technical service providers receive Potato Australia and other important industry information.

A new industry newsletter, Eyes on Potatoes was started to address the need for a more regular flow of information about what was happening in the industry. The industry now had quarterly publications with Potato Australia coming out in September and Eyes on Potatoes in March, June and December.

Through levy funds collected from growers and processors and matched funds from the Australian Government through Horticulture Australia Ltd. (previously the Horticultural Research and Development Corporation or HRDC), the industry supported many research projects throughout the country. Ensuring progress and outcomes were communicated effectively was an important task.

The industry now had a person who could work with research groups on behalf of the APIC R&D Committee to help ensure industry received the information they needed in a form they could understand.

New technology had been impacting on many industries and the internet offered many opportunities for those who could harness its power. Development of the Potato Internet Starter Pak helped industry people find potato information more easily on the internet and raised their awareness of what the internet had to offer.

Understanding what the internet could do was important as the industry, through this project, was exploring development of its own internet service. This project helped provide the understanding of what needed to be done to develop an effective and valuable service for industry. The task now was to use this information to establish a new service – a process initiated in this project.

In the early stages, industry interviews and group sessions were carried out to provide the foundation for change.

The industry sessions clearly identified a need for better access to information generated from the R&D program. As most information had been channelled through the national potato publications and HRDC Final Reports, the idea for a digital library system emerged.

The concept had good support from industry and a project was initiated to produce the system called Potato Archives.

Like many of us, growers prefer to deal with people when sorting out problems. A quick discussion with an informed person can often resolve quite difficult problems much more quickly than a grower reading through a lot of publications.

Through the project, it was recognised that technical service providers were an important source of information for growers and by supporting their information needs as well, growers would also benefit.

Technical service providers could include extension workers, researchers, consultants, chemical or fertiliser company field staff, field officers from processing companies or packing sheds or agents. They could have come from a number of different backgrounds but all had one common attribute, they were an important source of technical advice for growers and therefore could influence their decision making.

By working with the technical service providers, the project officer was greatly increasing the influence of the communication program.

Growers and technical service providers also benefit from interaction with their peers. There had been a decline of group activities due to the reduction of staff at state departments of agriculture. There were just not enough people to do the work.

Through the encouragement and support of the project officer, many activities were carried out that may have not gone ahead otherwise.

A national communication program cannot succeed through one person alone. It needs a team effort. The project officer can facilitate, provide support, carry out specific roles but in the end the strength of the outcome is in the relationships and trust developed through a team effort, and a team effort is required to move the industry forward.

Recommendations

Too little emphasis is placed on assessing the unrealised value of completed technology. A technical committee with a cross section of people with technology transfer, scientific and marketing skills needs to be formed to look at project outcomes and provide recommendations to the APIC R&D Committee.

The PITC needs to be given contractual authority through HRDC to ensure effective product development and communication of outcomes.

A group involving stakeholders, Intellectual Property specialists and communicators need to develop a formal process to ensure Intellectual Property is fully exploited for the benefit of levy payers and the Australian Government. This could involve a review of existing Intellectual Property, processes and attitudes of technology developers about maintaining Intellectual Property, a workshop to develop an IP strategy and distribution for broader comment and input from interested parties.

Introduction

Technology transfer in the Australian potato industry was fragmented, with many state, federal, industry and private agencies providing information to growers. Duplication of effort, inefficient use of limited resources and poor packaging of information were identified as barriers to getting the latest research findings adopted by growers.

By the mid 1990's, it was apparent to industry leaders that something needed to be done. The industry introduced a national levy in 1990 and if there was to be continued support from all levy payers going forward, they needed to receive a benefit from the research. Feedback from levy paying growers suggested this was not happening.

An assessment of technology transfer needs of the fresh potato industry (undertaken by Richard Marketing in early 1995 – PT452) identified the need for a national potato industry technology coordinator and development of a technology transfer strategy.

The Australian Potato Industry Council (APIC) through the Potato Growers of South Australia (PGSA) with assistance from Primary Industries South Australia (PISA) developed a project proposal to address the needs identified in the market research and industry discussions.

A pilot project managed by Potato Growers of South Australia was set up and a Potato Industry Technology Coordinator (PITC) appointed to begin coordinating technology transfer nationally.

Apart from establishing communication networks with "change agents" in Australia's potato industry, auditing technology transfer information and assets, the PITC was to develop a national technology transfer strategy. The PITC was also to provide specialist skills for the technology transfer project and package design, and assist with design of technology transfer components of other research and development projects.

The PITC was to be a key resource to APIC and have a role in:

- making recommendations to the Australian Potato Industry Council Research and Development Committee on key technology transfer needs of the Australian potato industry (may be developed from current R&D projects or existing world wide information that requires more effective packaging and delivery)

- facilitating development and delivery (under guidance of APIC R&D Committee) of strategically identified technology transfer projects (including identification and contracting of appropriately skilled teams or individuals)

- developing policies and guidelines for delivery of technology transfer projects (eg. outcome oriented, dollar impact of technology adoption, formats for most effective delivery of information).

The PITC was also to be responsible for developing and managing a major technology transfer project on implementing a national potato production "Code of Practice" focusing on soil borne disease management (ie. particularly Potato Cyst Nematode).

A key final activity was to assess the effectiveness and impact of national coordination on adoption of technology. This information was then to be used to decide whether a national technology transfer specialist was of value and develop a longer term national technology transfer strategy and project.

Developing the understanding

An important part of the project was the need to understand how the industry operated to develop an appropriate operational plan. The early stages involved considerable industry consultation across the country. This provided a grass roots view of the problems faced and allowed the PITC to develop the basis for appropriate corrective strategies.

It would have been easy to study one area and use this as the basis for dealing with national issues but this would have resulted in a flawed response.

The Australian potato industry was spread from Tasmania to Atherton in Queensland, across the bottom of south eastern South Australia and into the region south of Perth. This encompassed a wide range of soils, climates, farm enterprises and support infrastructure. Support services from industry and government varied enormously as did the supply chain, marketing dynamics and commercial viability of enterprise options such as processing and seed production.

To deal with this variability required understanding and empathy with the needs of those who operated in the various environments. The response by the PITC to the technology transfer needs of growers factored in this variability to ensure the benefits would flow back to levy payers in the most efficient, practical way given the limited resources of the project.

The project continued to evolve throughout its life which meant not all initial ideas were followed through and many new initiatives were adopted. These changes were carried out with industry involvement and the role of the project's Management Committee and Steering Committee was critical in this process.

The Steering Committee initially consisted of a sub-committee of APIC. This was later changed to the APIC R&D Committee.

The APIC R&D Committee was directly involved in making decisions about whether to fund R&D projects. Effective technology transfer was important for successful outcomes so it made sense for the PITC to be an adviser to this group and also take guidance.

The PITC was also an adviser on APIC providing help in conjunction with the Horticultural Research and Development Corporation (HRDC) Adviser, Jonathan Eccles and government advisers, Barry Philp and Rowland Laurence.

The PITC also sat in on the AUSVEG Potato Group meetings and provided support as required.

Attendance of the PITC at the APIC, AUSVEG Potato Group and the APIC R&D Committee meetings gave the PITC valuable insight into the major issues facing the industry.

The PITC had an industry network to glean information about on-the-ground issues and industry representatives in peak industry bodies providing a political and big picture view of what was needed. In conjunction with input from the Potato Growers of South Australia, Management Committee and the publications Advisory Committee which consisted of largely state agronomists, the PITC was able to put issues into context reasonably easily which helped greatly in all communication activities.

The above network was an important reason why the project was so successful. By working as a team, a lot was achieved very quickly and efficiently. It was the PITC's experience that this arrangement and the trust put in the PITC, particularly by the peak industry groups, was a rarity in agricultural industries.

Strategy

The pilot national project was established to show the value of national coordination with a view to appointing a longer term Potato Industry Technology Transfer Coordinator.

The principle goal of the project was to improve adoption of outcomes from the potato research and development (R&D) program. Industry and government were making a significant investment in potato R&D and both groups wanted to ensure they were benefiting from the outcomes.

As this was a new position, the expectation was that it would evolve over the period in response to industry needs identified in the earlier part of the work.

The initial strategy consisted of the following key points:

- Employ a Potato Industry Technology Coordinator who had the skills and qualities to be able to work with the breadth of people in the potato industry across Australia.
- Base the person in a farmer's organisation to ensure close links with the farming community.
- Establish a clear understanding with the host organisation that the person was to be totally dedicated time wise to the task and not have their time used up by other organisational activities that provided no value to the potato industry.
- Provide local support and direction by having a Management Committee with the appropriate skills and industry knowledge.
- Provide a Steering Committee that established a strong link with the peak industry body to ensure a strong national input into the program.
- Establish the position quickly by focusing on the greatest need first - establishing a national network.
- Demonstrate the potential of the position by carrying out a major technology transfer project.
- Develop a long term technology transfer strategy for the Australian Potato Industry

Method

The national pilot project was started to help coordinate technology transfer in the Australian potato industry with a view to appointing a longer term Potato Industry Technology Coordinator should the project prove successful. The project was implemented in four key steps:

Project establishment and management

The project was established and managed by Potato Growers of South Australia (PGSA), a commodity group of the South Australian Farmers Federation (SAFF) on behalf of the Australian Potato Industry Council. To ensure maximum effectiveness and close coordination with national industry objectives, the project was managed operationally at two levels:

Day to day management of the project was the responsibility of a Management Committee comprising:

- Chairman of PGSA and Committee Chairman (Wayne Cornish)
- Executive Officer, Horticulture Group, SAFF (Michael Caine and later replaced by Trish Semple)
- A representative from Primary Industries South Australia (Barry Philp)

  Later the committee was expanded to include another grower representative from the PGSA.

- Grower representatives (Kevin Stephenson later replaced by Neil Perry)

Overall direction and strategy development for the project was managed by a Steering group consisting of:

- Two APIC R&D Committee representatives which included the Chairman of the Management Committee (Wayne Cornish, John Smink)
- HRDC representative (Jonathan Eccles)

  Where possible, Steering Committee meetings were held to coincide with APIC meetings. This arrangement was changed later to the Steering Committee being the APIC R&D Committee.

Another important component of the project was the attendance of the PITC at peak industry body meetings as an observer and adviser (APIC, AUSVEG Potato Group and the APIC R&D Committee), and the close relationship with HRDC.

These relationships were very important to provide better communication of their activities to the industry but also enable the PITC to understand the context in which decisions were made to enable effective communication support to be provided.

In recruiting the Potato Industry Technology Coordinator (PITC) the following qualities were looked for:

- already respected in the potato or agricultural industries
- a good organiser
- has an existing network of contacts in the potato industry
- open, friendly, dynamic and keen
- a leader and motivator
- experience in technology transfer
- good computing skills
- skilled in writing and use of the media

Establishing a Technology Transfer Network

A national network to facilitate technology transfer was established through the following process:

1. Raise awareness of the project and its goals
2. Find out what needed to be done to improve technology transfer
    a. Learn about the industry
    b. Get to know a cross-section of industry people who could support the project
    c. Find out why technology from the R&D program was not being adopted and gather the knowledge to develop solutions to resolve the problems.
3. Addressing the deficiencies
    a. Develop a National Distribution System
    b. Establish Eyes on Potatoes and streamline the publication process
    c. Address issues with Potato Australia
    d. Develop a knowledge base for use in industry activities
    e. Work with researchers to foster technology transfer
    f. Improve access to potato information
4. Support industry development through the peak industry bodies

Develop a Code of Practice for diseases (Potato Cyst Nematode in particular)

The original objective was to develop a Code of Practice for diseases focusing on Potato Cyst Nematode. This would involve:

- Developing the scientific basis for the code.
- Developing a workable strategy.
- Marketing the Code to industry

This was changed as a number of problems emerged in industry interviews using this approach. The industry also later decided to develop a National PCN Management Plan which impacted on how the work was carried out.

The following actions were taken:

- Review literature on Potato Cyst Nematode hygiene practices.
- Explore various strategies and their implications.
- Investigate the people and implementation issues in developing an effective Code of Practice.
- Develop a prototype concept for a hygiene information system.
- Work with industry and government groups to support development of a national plan for Potato Cyst Nematode.
- Develop the hygiene component of the National PCN Management Plan

Develop a long term technology transfer plan for the industry

Key issues that needed to be answered by the end of the project included:

- is the use of a PITC effective?
- future role of the PITC and support requirements
- most appropriate location for the PITC
- priority list of topics for which technology transfer programs must be developed
- role of the PITC in providing specialist technology transfer expertise to other projects
- production and marketing systems for technology transfer packages
- development of a potato industry technology transfer business plan
- Evaluation of the benefit cost of the technology transfer strategy.*

* Not carried out. (See Discussion for further explanation.)

Activities - Project establishment and management

Selection of a suitable candidate and management support structure were very important if the project was to succeed. The position was new and involved working with industry people throughout Australia from a variety of backgrounds. It also involved working with scientists on a range of topics and peak industry bodies to improve communication throughout the industry. The position was therefore as diverse as it was challenging.

Over time the PITC would become an information broker, linking people in the industry and helping the information flow, particularly from the potato levy funded R&D program.

The Potato Industry Technology Coordinator (PITC)

The PITC worked and trained as an extension officer in the Victorian Department of Agriculture from 1980-1992. His last position with the department was Senior Extension Officer (Field Crops) running state and regional extension programs based at Swan Hill in the Victorian Mallee.

In 1992 the PITC joined the newly formed Cooperative Research Centre for Soil and Land Management as a Communication Consultant. This was the first Cooperative Research Centre in Australia. It developed into a leading Australian research centre with Australia-wide and overseas projects. PITC focused on internal communication, product development, industry liaison, coordinating the extension component of the Masters of Soil Science at Adelaide University and providing support to the Chief Executive Officer and Program Managers on key initiatives such as sustainability. He left the centre to travel overseas in 1995.

In early 1996, the PITC started work as a journalist for the Corporate Marketing and Communications section of the Department of Primary Industries and Resources South Australia based in the head office in Adelaide. He was involved in writing media releases, organising a ministerial launch and coordinated the department's contribution to World Environment Day in Adelaide.

In June 1996, the PITC edited and compiled chapters for a manual on the Potato Crop Management Service, a service that was being transferred to private enterprise from the Department of Primary Industries South Australia.

He began work for the Australian potato industry as PITC in August 1996.

The PITC's background made him a suitable candidate to take on this role.

Peak industry groups

The PITC attended all the APIC, AUSVEG Potato Group and APIC R&D Committee meetings. He also maintained a strong working relationship with the Horticultural Research and Development Corporation.

APIC

The Council was actively involved in initiating and supporting the project. The PITC presented a communication report at most meetings, raised communication issues for discussion and provided support as required.

The PITC worked with the chairman to produce APIC briefs.

An outcome of industry interviews was that people did not know what the peak industry bodies did and were keen to know more about what they were doing for the industry. One of the simplest ways to achieve this was to report on meeting outcomes.

The information coming out of meetings needed to be current to be attractive. To facilitate this, the PITC negotiated with APIC (and AUSVEG Potato Group) to align their meetings with the publication

schedule of Eyes on Potatoes and Potato Australia, where possible. This meant decisions made by APIC and AUSVEG Potato Group were then being heard by the industry soon afterwards.

Linking meetings to publication schedules was important to avoid a continuing disconnect between the peak industry bodies and the broader industry. The state networks in many instances were poor so state representatives were not always able to communicate the outcomes of meetings to the people they represented effectively. It assisted state communications to provide a summary of outcomes to everyone through Eyes on Potatoes. Those states with strong networks could also build on the articles and provide further value to their members.

AUSVEG Potato Group

Same as for APIC. See above.

APIC R&D Committee

As the APIC R&D Committee was directly involved in making funding recommendations to Horticultural Research and Development Corporation on research and development, its activities were extremely relevant to the PITC role.

As Steering Committee for the Communication project, the committee provided an important sounding board and source of advice for the PITC's activities. As with APIC and AUSVEG Potato Group, the committee collectively had an enormous amount of knowledge about the industry and experience which was extremely useful in helping the PITC with his work.

As the PITC gained industry experience, he was also able to input into discussions and provide a perspective quite different to other members.

Horticultural Research and Development Corporation (HRDC)

To be able to address technology transfer issues with researchers, the PITC needed a close working relationship with the APIC R&D Committee and HRDC. As the R&D Committee only met twice a year, many day to day issues were handled through Jonathan Eccles, the industry's adviser from HRDC.

The PITC worked closely with HRDC to improve their project proposal system and identify opportunities for improving technology transfer through initiation of strategic projects.

Activities - Establishing a technology transfer network

Although much was known about what needed to be done in general terms, there still was a lot still to be learnt. The industry consisted of many different groups with their own goals. Establishing an effective communication network meant understanding the industry, gaining the confidence of industry groups so they would work with the PITC and establishing a path forward that took into account the various industry needs.

Raising awareness

As a PITC position was new to the potato industry, it was important to inform people of the project. This was done through the media, Potato Australia, at potato field days, workshops, meetings, personal contact through industry interviews and group sessions with growers, processors and the service industry.

Group activities were also an important learning exercise for the PITC.

Media

Project awareness was further raised once Eyes on Potatoes started in June 1997. Articles produced reporting progress throughout the project included:

- Improving communication in the potato industry – Eyes on Potatoes – June 1997
- Technology transfer project Update – Potato Australia - 1998
- Coordinating technology transfer in the Australian Potato Industry – Potato Australia – 1999, 2000
- Technology transfer update – Eyes on Potatoes - December 2000

In March 1998, a Project Update was mailed out to technical service providers and members of peak industry bodies.

Group sessions

Group sessions were held to raise awareness of the project, educate participants about key communication issues and help the PITC better understand what needed to be done. The interactive sessions taught the PITC as much as the participants.

The session for researchers was important because if they did a better job communicating, it would ultimately benefit growers and technical service providers.

Communication starts with planning and progresses through to when technology is adopted by growers. Involving industry earlier in the communication process was critical if good projects were to be developed and well supported by industry throughout the life of the project. This was also in the interests of researchers. If they provided what industry wanted then their chances of obtaining funding for doing research would be greatly improved.

(a) Gaining value from our investment in research and development

Sessions were held at a number of venues. The main topic was ‘Gaining value from our investment in research and development’. Sessions though were modified on request to better meet the audience’s needs. In some sessions, elements of the presentation ‘How to use the internet to find potato information’ were also included.

The aim was to raise awareness about what was happening in communications, how growers could take advantage of what was already available and to create interest in new developments inside and outside the R&D program which would impact on their business.

Participants were encouraged to ask questions throughout the session leading to very interesting discussions. Some issues raised included use of internet banking and linking into financial management packages such as Quicken, programs to store paddock information, the difficulty of finding the right information on the internet, the difficulty of being able to get support for setting up the computer properly, poor telephone line speeds, training in how to use the computer and internet, getting publications, difficulty in using some information products and the need for better designed information products.

Participants generally showed a lot of interest in the new information products coming through the system and the new technologies.

The session covered the following topics:

- Past - what have been the problems and why
- Present - what type of information products do we have available to us
- Future - what's still to come and challenges still facing us

Demonstration of new technologies

- Email and digital cameras
- Potato Internet Starter Pak and the internet
- Crop Test – Nutrient information package
- DVD – the next generation

4 Nov 1998	Berrigan, NSW (Growers meeting)	~12
31 May 1999	Mirboo North, Victoria (Grower meeting – seed)	7
1 Jun 1999	Ballarat Demonstration Farm, Victoria (Grower Meeting – seed)	9
2 Jun 1999	Creswick, Victoria (Grower meeting – McCains)	18
3 Jun 1999	Colac, Victoria (Grower meeting)	21
4 Jun 1999	Portland, Victoria (Grower meeting – seed)	6
9 Jun 1999	Gembrook, Victoria (Grower meeting – fresh)	22
5 Aug 1999	Penola, SA (Grower meeting - processing and fresh)	40
12 Aug 1999	Virginia, SA (Grower meeting)	7
19 Aug 1999	Murray Bridge, SA (Grower meeting - Horticare clients)	12
23 Aug 1999	Devonport, Tas (McCains Field Officers)	~5
25 Aug 1999	Scottsdale, Tas (Simplot growers)	17
30 Aug 1999	Devonport, Tas (Serve Ag field staff)	4
31 Aug 1999	Oaklands, Tas (Simplot + other growers)	16
31 Aug 1999	Longford, Tas (Simplot + other growers)	8
1 Sep 1999	Ulverstone, Tas (Simplot growers)	7
2 Sep 1999	Devonport, Tas (DPIWE)	5
2 Sep 1999	Smithton, Tas (McCains growers)	10
2 Sep 1999	Burnie, Tas (Simplot growers + university staff)	13
3 Sep 1999	Devonport, Tas (Fresh growers through Ralph Vos Purity and Forth Farms)	11
9 Sep 1999	Albany, WA (Grower meeting - seed)	15
13 Sep 1999	Busselton, WA (Grower meeting)	8
14 Sep 1999	Pemberton, WA (Grower meeting)	6
15 Sep 1999	Manjimup, WA (Grower meeting)	9
16 Sep 1999	Binningup, WA (Grower meeting)	16
17 Sep 1999	Hamilton Hill, WA (Western Potatoes)	4
27 Oct 1999	Orange, NSW (Grower Meeting)	6
28 Oct 1999	Robertson, NSW (Grower Meeting)	8
10 Nov 1999	Atherton, Qld (Grower Meeting - DN)	9
11 Nov 1999	Atherton, Qld (Adviser Meeting)	6
12 Nov 1999	Atherton, Qld (Grower Meeting Co-op)	4
16 Nov 1999	Bundaberg, Qld (Grower Meeting)	10
18 Nov 1999	Killarney, Qld (Grower Meeting)	6

19 Nov 1999	Gatton, Qld (Grower Meeting)	4
22 Nov 1999	Dorrigo, NSW (Grower Meeting)	10
23 Nov 1999	Guyra, NSW (Grower Meeting)	12

Figure 1: Group session participants – Albany, WA Sept 1999 (left) and Atherton, Qld Nov 1999 (right)

(b) How to use the internet to find potato information

The session covered the following topics:

- Why use the internet
- How the internet will change the way business is done
- Overview of types of sites on the internet
- Using the Potato Internet Starter Pak
- Tips on finding potato information
- How to navigate through large sites
- Link sites and link pages
- Connection problems
- The future

- The Millenium Bug - Is it a concern

9 Jun 1999	Knoxfield, Victoria

(c) How to write better research submissions

The session covered the following topics:

- What is the industry interested in funding
- What does the industry want from applicants
- Composition of the R&D Committee
- Problems with past funding applications
- Defining the issue
- Industry consultation
- Reporting to industry
- Facilitating adoption
- Expert vs the team approach

9 Jun 1999	Knoxfield, Victoria
26 Jul 1999	Teleconference meeting - Qld group (DPI and Sandra Lanz)
24 Aug 1999	Devonport, Tas (Serve Ag Research, Agronico, Simplot, Consultants)
27 Aug 1999	Hobart, Tas (University)
2 Sep 1999	Devonport, Tas (DPIWE)
17 Sep 1999	South Perth, WA (AgWest, CSIRO, Curtin University)

Finding out what is needed

Industry interviews

The first task for the PITC was to understand how the industry operated and what the issues were impacting on people carrying out their business. The PITC had only brief experience in the potato industry but extensive experience in other industries. This meant he came with few preconceived ideas compared to someone already working in the industry and was able to look at the situation objectively.

To establish a national network, the PITC needed to understand the industry, people's needs and how the existing network could be improved. Given the limited resources available in the industry, it was important not to duplicate existing activities but build on the good work done by many people. To do this required an understanding of the systems already in place and gaining support of people to develop a national network.

Initial interviews were held with 150 people to gather information, better understand how the industry worked and introduce the project. Thirty-one interviews were held in NSW, 29 in Queensland, 25 in South Australia, 22 in Tasmania, 24 in Victoria and 19 in Western Australia.

Interviews provided information for:

- the design and content of Eyes on Potatoes
- changes in Potato Australia
- the design of the Information Directory
- the focus on the internet
- identifying the framework for the Code of Practice
- identifying problems in extending R&D
- identifying problems in the existing industry network
- establishing a rapport with people to enable the PITC to facilitate change

Keys issues coming out of the interviews were clustered under seven headings:

1. Code of Practice
2. Research
3. Networking and communication
4. Internet and directory
5. Newsletter and Potato Australia
6. Grower management
7. Miscellaneous

There were so many good points made by people in the interviews and not everything could be captured and used. The interviews were incredibly important to the project as they provided a context for how the PITC would operate. (See Appendix A for a list of discussion points used as a framework for industry interviews and Appendix B for issues arising from the interviews.)

The following summary of main points attempts to capture the key issues but cannot do justice through the written word to the many subtleties in the points or the context of arguments presented.

(1) Code of Practice

The Code of Practice term meant different things to different people. The term could be linked with Quality Assurance programs, hygiene programs or government regulations. This was not a result of poor understanding of the term but a direct reflection of how it was used within the community.

A farm hygiene strategy was regarded by many as important but not something they felt they could implement effectively with current knowledge and technology. There were a number of important reasons for this position.

Hygiene strategies were traditionally developed to deal with specific diseases, situations or as a whole of farm strategy. Growers seemed to be able to relate easily to more specific strategies from an implementation perspective but not from a whole of farm or business perspective. A grower understood the need to remove soil from potato harvesters between properties but found the logic lacking in that other machinery moving between properties such as pea harvesters pose just as big a risk. The grower could easily extrapolate, for example, a potato hygiene strategy to encompass other crops but was not necessarily confident that all hygiene issues for other crops were adequately covered. What may be a hygiene consideration for peas may not be for potatoes. So repeatedly in discussions the need for a holistic strategy was apparent.

The need for a holistic strategy was recognised by some state departments of agriculture and attempts were made to produce something suitable. Looking at the documentation though and talking to the growers, a number of problems emerged with the approaches taken.

Hygiene strategies such as produced by the Department of Primary Industries and Fisheries in Tasmania provided an easy to understand guide for industry to follow. To growers it all made sense but then the problem of implementation had to be considered. This was where the strategy and most holistic hygiene strategies the PITC viewed had problems.

Let's revisit the harvester example previously mentioned. Further discussion with growers revealed that addressing the harvester hygiene issue meant facing many challenges as follows:

- Hygiene practices needed to apply to all machinery that had the potential to move soil.
- Many harvesters were not designed for easy washdown.
- With sticky soils, it was questionable how well the task could be done in a reasonable time and still not pose a disease risk.
- Many properties did not have a single point of entry or had paddocks not linked to the main property (owned or leased) which made locating properly set up washdown areas difficult.
- How does a grower enforce hygiene standards on council and other (eg. telecommunications, electricity) machinery which came onto the property?
- During harvest, contractors were under considerable time pressures, so washdown could create significant delays.
- There were few community washdown areas for contractors so if a grower did not have a washdown area (preferable to leave soil at its origin) they had to do it at the next property assuming this was acceptable. Given the difficulties and importance of having the crop harvested in a timely manner, compromises often had to be made with economic considerations overriding hygiene ones.

So implementing an effective strategy was challenging. The harvester example was particularly troublesome in areas with a lot of contractors such as Tasmania, but less so on the mainland where most people owned their own gear. Nonetheless, there were still issues moving between paddocks and in and out of paddocks on leased land.

Farm design also raised many interesting challenges when implementing a hygiene strategy. It would be ideal to limit movement of outside vehicular traffic and those vehicles that do enter the farm go through a washdown area or restricted to a small area of the farm such as near the house and sheds. This would keep potentially contaminated soil restricted.

Some farms had achieved this, especially those involved in seed production. For many farms though, the logistics of such an approach were just not practical.

Many farms have a lot of vehicular traffic in busy periods and the grower was often not in the position to manage it to ensure everyone took appropriate hygiene measures. It was not just trucks moving on and off the property. It was also field officers, agribusiness people, consultants and local dealers if parts had to be brought out to fix a broken down machine.

Given the problems involved with farm design and the difficulties of managing vehicular movement in busy periods, the logistics of implementing an effective hygiene were often quite difficult.

The processing industry was regarded by growers as being more effective in this area. The reasons were fairly obvious to the PITC. Processors had their own standards which they could refine over time and field officers who could assist growers in their implementation. As the field officers visited a number of properties, they developed considerable knowledge based on their own observations and what other growers had done. This knowledge was used to help growers implement the standards and processors to refine them. For the ware industry, external input and interactive learning was generally lacking.

The incentive for processing growers was that if they did not do the right thing by the processors with respect to hygiene, they risked losing their contract. This was a powerful economic driver to help implementation.

Growers were also focused on the diseases on their farms at the time. A lot of growers and technical service providers questioned the focus of a hygiene strategy on Potato Cyst Nematode. They were more concerned with diseases they had, then ones they might get although they tended to support the value of a strategy that covered both. Many also did not see the difference between potato diseases and other crop diseases with regard to a hygiene strategy. Repeatedly the same point was reinforced in different ways that growers wanted a holistic, practical hygiene strategy.

Although growers were confused about terminology and had differing levels of understanding, their awareness of the need for hygiene and the sort of things involved was fairly good. Most people were keen to learn more and were not rejecting the concept. Gaining adoption in many instances was therefore not a matter of convincing them of the value of a hygiene strategy but rather providing practical means to implement it.

The adoption of hygiene practices was also a matter of seeing the value in doing it. Unless there was a supply chain, whole of farm approach, it would be difficult to get many people to participate. If the strategy applied to everyone (one rule for all), the transition would be more readily accepted although some people did not believe this would happen without enforcement. Given that implementation involved time and resources, it was seen as a possible competitive disadvantage unless all people were involved. This attitude was underscored by a high level of distrust between operators in the industry.

An issue raised by one ware grower was that their hygiene strategy was also a part of their competitive advantage and they were not interested in sharing what they were doing. The PITC was not sure how widely held that view may have been as only one person volunteered the response.

Seed quality was seen as a major issue for disease and yet there was little acknowledgement of the potential for post-receival contamination problems on farm. As growers became more distant from seed sources they also tended to become more disconnected from the seed grower, often working through seed merchants.

Ware growers were quite concerned that any hygiene strategy had to include packers/merchants. Movement of bins with soil was seen as a big issue. Some growers indicated they would send bins to packers/merchants and then receive back someone else's bins sometimes with soil in them.

The main issue with packers/merchants was that produce moved all over the country so there was a potential for spread. Other crops such as onions were also packed and this needed to be considered in any strategy.

Having a long enough rotation was seen as a problem for some growers but many did not see it as an issue. There were a wide range of opinions as to how long a rotation needed to be. This suggested growers had different views as to what was required for adequate disease control (ie. essentially a rotation threshold based on risk rather than the ideal based on disease life cycle considerations) or what was required for their circumstances. Growers with very short rotations were often in the more

intensive traditional areas such as Virginia in South Australia and Gatton in Queensland. In these situations, it seemed that financial imperatives were driving choice of rotation rather than a lack of understanding of what needed to be done.

Growers also voiced concerns about the number of Codes of Practices and regulations that emerged over the years. There was a strong desire that these different systems be consolidated to make for easy implementation, less paperwork and duplication and attractive to adopt.

The PITC also received the distinct impression from some growers that they felt many of the disease problems could be dealt with by an appropriate rotation, so this reduced the importance of other strategies. It would seem this had become the fallback position for some people.

There was concern by some people with regards to protecting seed areas particularly in Tasmania and Western Australia. NSW had protection in place and there did not seem to be any concern in Victoria and South Australia. Queensland did not grow much seed so it was not surprising that no comments were made on this issue from people in that state.

The earlier PCN outbreak in Victoria clouded many people's views about what was achievable especially with Potato Cyst Nematode and other exotic diseases.

The containment of PCN in Victoria was seen as a failure by many outside the state as well as in Victoria. This was thought to be due to inadequate government support to enforce quarantine areas, little support for those affected and a lack of options for growers to continue trading if in a quarantined area but with no detectable pest. There was considerable empathy by growers outside the state for those affected, but also frustration that a suitable solution to protect others had not been enforced.

Cross border regulations were a concern to many. The different regulations in each state impacted on trade and were considered unfair. The rules though were a reflection of industry and state government deliberations. Many people thought the rules needed to be more consistent. Many faced an internal conflict between wanting open trade and stopping PCN spreading.

People living on borders were particularly annoyed with some regulations. One example was a grower who farmed in South Australia, stored his potatoes in Victoria and had to test for PCN when bringing the potatoes back to the factory for processing in South Australia. It was viewed there needed to be more common sense involved with the regulations.

Summary of key points for development of a Code of Practice

- Needed a holistic strategy that covered the entire farm business.
- The strategy had to be logical and practical to growers and those who had to implement it otherwise it would not be credible.
- The strategy had to include all relevant parts of the supply chain – growers, packers, processors, contractors etc.
- Information needed to be available to support implementation.
- There appeared to be no major psychological or sociological barriers to adoption of a hygiene strategy if it was equitable (ie. everyone was involved and none gains a competitive advantage by avoiding implementation costs) and did not interfere with carrying out business.

(2) Research

The main concern expressed by all groups was the need for more information about the research being carried out. This was not only a problem for growers but also technical service providers including researchers.

The second important point was that information had to be in a suitable form. Some people were quite blunt in their criticism of some of the information they were receiving on research from state

departments and other groups while others' comments showed they were having difficulties understanding the material. The PITC wondered if, in several instances, whether people were reluctant to be too critical. This may have been due to their reading and technical skills or a concern about protecting what little they had. In these situations, further prodding usually revealed difficulties in interpreting information and reading difficulties. The latter was also mentioned as a problem by technical service providers.

The extent that the problem was poor presentation verses poor reading skills could not be properly established in the interviews without further in-depth probing which was not considered appropriate. In some cases when growers acknowledged reading difficulties or a dislike for reading, they had overcome the problem by another member of the family or business focusing on the task. Other growers simply relied on technical service providers. So a grower who was a poor reader was not necessarily an uninformed grower!

Growers and local technical service providers were keen for more demonstration of research and interaction with researchers or extension people associated with the projects. Essentially they wanted to be more a part of the research process rather than passive recipients of the end results. It was also interesting to note that researchers had a desire for greater feedback. So a disconnect appeared to be happening that was not in the interests of either party.

As suspected by the Australian Potato Industry Council and later reported in commissioned research (project PT405), many people did not feel the industry was getting good value from the investment of the potato levy. In saying this, most people were positive towards the R&D program and when good interaction and feedback did occur, were very appreciative even when not fully agreeing with the results.

The issue of access to research information was also raised and concern expressed about some people profiting by having better access than others.

The state based nature of most research also raised problems. Movement of information between departments did not always happen as well as it should, researchers often lacked opportunities to meet interstate colleagues at appropriate forums to maintain strong networks and researchers were suffering in much the same way as others from a lack of information about what was happening in the industry. The latter was important to understand in the context of what industry needed, who the industry players were and how they could best use their skills to serve industry interests and therefore obtain funding for their work.

(3) Networking and communication

The overwhelming need expressed was for more information about what was happening. Feedback covered a large range of needs. Generally, people did not feel they were well enough informed. Even in the processing sector which appeared to be well serviced, there was a general desire to know more.

A lot of good work in technology transfer was being done by technical service providers from government and private enterprise. The value placed on technical service providers related more to the individual and quality of information they provided rather than whether they were extension workers, consultants, agribusiness advisers, researchers, university lecturers or agents.

Most growers were also quite comfortable dealing with the commercial biases from people working in the private sector. Researchers appeared more concerned about commercial bias than growers.

In discussions, it was also obvious that some growers and technical service providers were very well informed about industry developments while others were not. Their level of knowledge did not impact on either group's desire to know more.

Networking across state borders and internationally was very variable. Good group activities such as well run conferences were seen by many, especially government technical service providers, as important forums for meeting people, developing business relationships and gaining new ideas.

Growers and private technical service providers were more variable in their support for these forums presumably due to the time pressures of work and not seeing the forums as relevant. Busy schedules appeared to be the major problem. The busier people became the more critical they became about the value of what they expected from participating in external activities. This also applied to other activities such as field days and workshops.

Technical service providers highlighted the need for more tools to be developed that allowed growers to develop a solution for their particular problem. This highlighted a clear recognition of the complexity of the decision making process when adopting some technologies.

There was an enormous difference in the support available in different areas and how growers responded to obtaining information. Some growers who lacked good technical service providers reached out to establish networks to address deficiencies while others made do with what was easily available. The impact of technical service providers was quite noticeable in the attitudes of growers and the way they addressed their information needs. This was most evident in the processing industry.

Although barriers existed between individuals and groups, especially in the ware industry, most people wanted more interaction and saw networking as important to their business.

The attitude towards overseas information was interesting. Researchers were often dismissive of growers using overseas information because of the difficulty of working out what was relevant and what didn't apply to the Australian conditions. Many growers and technical service providers saw considerable value in accessing and using overseas information. Some growers and technical service providers had quite extensive overseas networks. This reflected a degree of paternalism that had been experienced by the PITC in other industries.

Good fruit and vegetables, Peelings and Stephen Wade's newsletter were commonly referred to and valued by those who received them. Local commercial publications were also commonly cited as being read but with the concern that they needed more potato content.

The attitude towards the Potato Grower put out by Potato Growers of Western Australia was an interesting case where growers were quite supportive but many others were dismissive of its professionalism. This is an excellent example of a publication satisfying a need but not being presented to a standard considered acceptable by many people. (See discussion for information.)

The decline of Department of Agriculture staff numbers was repeatedly mentioned as a problem by growers and technical service providers. The decline in both research and extension was seen as a problem.

Communication in the supply chain was often cited as a problem particularly in the ware and lesser so in the seed industry. It was not mentioned as a problem in the processing industry.

Poor information flow from supermarkets back to the grower via the merchant was seen as directly impacting on business. There was a lot of distrust of central market merchants and the quality of information they passed onto growers. Even if the information was quite good there was often no way for the grower to verify it to satisfy any underlying concerns. Relationships were therefore often tense.

The relationship between seed buyers and sellers was not as bad as in the ware industry, but problems still existed. Issues raised highlighted differing expectations between growers and sellers on quality, particularly with regard to disease in seed. There were also problems with inadequate information flow, often worse if a merchant was involved. Lack of contractual certainty and late payments were repeatedly raised as an issue to a point where it impacted seed grower's willingness to expand due to the perceived risk involved.

Terms of trade was an issue for ware and seed growers. Growers in Western Australia indicated that the increased stability provided by the Board allowed smaller growers to survive and invest with greater certainty. It also helped greatly in forward planning and getting bank loans for farm development.

Growers who had moved into supplying for processors often indicated the certainty of payment within a reasonable time was extremely welcome after working in the ware industry. Even though processors may not have paid as much as was possible on the ware market, the timely payments growers received had a big influence on reducing risk in their cashflow situation.

The Crisping Groups were highly regarded. The Crisping and Robertson models were often referred to positively by the industry.

Access to information was often referred to as a problem particularly with older research.

A concern by many was the lack of skilled technical service providers. There was a general decline of these people in many organisations, not only in departments of agriculture.

There was too much information, too little time to read and yet not enough of the right information came through as a common theme in the responses.

(4) Internet and directory

There was mixed support for the internet. Those using it generally saw great potential. Those not using it were mixed in their views. Some were positive about its potential, while others dismissed it as a passing fad offering little to growers and the service industry.

Some saw the internet as filling the gap left behind by the decline of technical service providers.

Training was identified as a real need by growers and technical service providers if the potential of the internet was to be fully realised.

Many users of the internet commented on the difficulty of accessing information and the time involved. There was a general desire for better services that would meet their needs.

(5) Newsletter and Potato Australia

There was a general need for more industry information including R&D outcomes and progress.

The concept of the newsletter was well received with a variety of views as to how big it should be and how often it should be published. A short easy to read newsletter was preferred generally.

Potato Australia was generally well regarded by those who received it. There were few suggestions for improvement and most people were happy with the way it was.

One person expressed concern about the impact of a national newsletter on their local newsletter especially with respect to advertising.

A lot of growers and most technical service providers were not receiving Potato Australia. There were many problems with the existing distribution systems. Many people indicated they would like to receive Potato Australia. Some people who did receive Potato Australia did not know where it came from.

Many ideas for possible content were put forward for the newsletter:

- An annual list of research carried out
- Benchmarking studies

- Biofumigation
- Brown fleck
- Cadmium
- Calendar of events
- Cost of production and price information
- Economic thresholds for pests
- How the industry is developing
- How to use the internet
- Index of articles
- Information about what all the different industry groups do (eg. AHC, HRDC, APIC, AUSVEG)
- Information from South Africa and other like areas
- Jokes and funny stories to break up articles
- Marketing
- More information from the R&D program
- Need information relevant to Queensland
- Physiological age
- Potato growing in a district
- Processing contract prices in each state
- Product catalog
- Production statistics
- Registered chemicals for potatoes
- Seed process
- Seed research (ie. breaking dormancy, getting early establishment)
- Spray chart
- Supply chain
- Times of sowing for the different regions
- Trade statistics
- Variety results
- What is happening in the industry
- Working with groups such as Woolworths

(6) Grower management

A lot of decision making was vested with consultants, field officers and agribusiness advisers especially in the more intensively serviced areas of Northern Tasmania and the Atherton Tablelands.

Diversity of operations put a lot of demands on growers and some regions had few quiet times in the year.

A lot of best practice was not being implemented by the industry for a variety of reasons including a lack of information and support. The sheer complexity of many businesses raises many concerns about the ability of existing industry and government structures to provide the information and support required.

Technical service providers perceive many growers do not focus enough on marketing. Growers see themselves as meeting market demands and having little ability to influence supply chains.

The high degree of business variability even in one area suggests the ‘one size fits all’ type solutions have limited value. It was very apparent growers needed tools that could be adapted to their own circumstances.

(7) Miscellaneous

There was no summary as too many issues were raised. The responses reinforce the observation that growers are problem driven and need communication solutions that can address this need.

(See Appendix A for discussion points in industry interviews and Appendix B for issues arising from the interviews.)

Addressing the deficiencies

Before embarking on any changes it was important to develop a communication framework for the work.

The following key strategies were adopted:

- Principal target audience – growers, processors and technical service providers
    - Technical service providers were defined as anyone who provides advice to growers that impacted on decision making and the effective adoption of technology from the R&D program. These include such people as extension workers, researchers, consultants, agribusiness advisers, merchants, agents and field officers.
- Principal communication channels – Potato Australia and Eyes on Potatoes
- Goals:
    - Improve awareness of R&D progress and outcomes
    - Improve awareness of what is happening in the industry, useful information products and issues impacting on business viability.
    - Improve the quality of information products so that growers, processors and technical service providers can gain the full benefit from the work being done particularly from the levy funded R&D program.
    - Work with existing groups with the aim of adding value to their activities and not undermining their objectives.
    - Target information delivery to extend people's thinking and provide enough information for people to take the next step in the adoption process.
- The approach used by the PITC included:
    - Respecting individual's opinions and having empathy to the context for which they are given.
    - Facilitating change through partnerships.
    - Taking people on the journey of change rather than imposing change without due consideration to those involved. (Important if people are to have ownership of the outcome and be committed to following through with the change process.)

By establishing a relationship of trust with people, many difficult issues could be raised and discussed frankly. This was important if real change was to occur as there was a lot of distrust within the industry which had held it back.

The technical service provider was included in the target audience as they provided local reinforcement of messages coming from the R&D program and could support growers in adopting technologies. Many technical service providers had considerable local experience that could add value to the messages from the R&D program.

By providing technical service providers with the same information as the growers, they were in a better position to provide the support required.

Restricting information flow to two communication channels (Potato Australia and Eyes on Potatoes) may be considered a risky strategy. This was not considered a problem by the PITC as the goal was to have the distribution system that would reach all levy payers and technical service providers. This was not always possible in other industries resulting in other communication channels such as the general media being used to address gaps.

The other reason for restricting the number of communication channels was resources. Implementing an effective media strategy for a country the size of Australia with potato growers spread across such a

big area was difficult and would have consumed valuable resources. Rather than the PITC spreading himself too thinly, he focused his efforts on Potato Australia and Eyes on Potatoes.

Another important way of conserving resources was by working with people and looking for opportunities for partnerships. It was not practical to try and do everything centrally or was it desirable. Many people working in the industry could help achieve the project goals. Partnerships with these people would produce many win-win situations that could also foster new opportunities.

At what level a communicator targets information to ensure the greatest proportion of the target audience can gain benefit, is always a contentious issue. The approach taken was one that had worked for the PITC repeatedly in the past. Articles in EOP or PA needed to meet certain criteria. They were:

- Needs to be in a language suitable for the target audience.
- Needs to have information that can be used by the target audience either directly or by expanding their understanding of their industry and its potential.
- Detail should not be avoided when it has relevance to the reader and helps them use the information to effect change.
- Information that is not relevant to the target audience should be kept to a minimum.
- Prose should be appropriate to the target audience and their ability to assimilate information.

If the above criteria were met, the level of detail in an article could be quite high. The key issue was having relevant detail and written in such a way that it could be readily understood. Too often useful detail was excluded and irrelevant detail left in. The latter often reflected the writer's perspective about what was important rather than focusing on what was important for the reader.

National Distribution System

Many levy payers were not receiving Potato Australia. A new distribution system needed to be developed.

A new distribution system would form the basis for sending out all national communications and would also help state industry and government groups better reach their audience. Done properly one good system could meet many needs.

The existing state distribution systems were highly variable in quality with respect to their coverage of growers. Most did not cover technical service providers including processors who were also levy payers.

Preliminary discussions with the state distributors indicated they were not supportive of relinquishing grower details for a national database. In some cases this was prevented by the constitution of their organisations.

The problem was presented to AUSVEG Potato Group in May 1997 and a decision made that the states maintain grower lists, be responsible for distribution in their state and would work with the PITC and include the government and private sector people in the mailouts.

The PITC then worked with each state industry organisation to set up the new system.

In Queensland the Department of Primary Industries (Gatton and Atherton) worked with Queensland Fruit and Vegetable Growers to upgrade the grower's list. The government and private sector list was developed and maintained by the PITC in conjunction with the two groups.

In New South Wales, Stephen Wade from NSW Agriculture had many technical service providers and growers on his mailing list so the PITC worked with him to fill in any gaps. A duplicate of the government and private sector list was kept by the PITC.

In Victoria, Ag-Challenge on behalf of the Potato Council maintained the grower mailing list. This was checked and upgraded by Tony Pitt at Ag-Challenge with the help of the seed and processing industries. The PITC developed and maintained the government and private sector list with the help of

Tony, the processors, Victorian Department of Natural Resources & Environment and other industry groups.

In Tasmania, the Tasmanian Farmers and Graziers Association (TFGA) maintained the grower mailing list. This list covered most growers so the PITC focused on developing and maintaining the government and private sector list. This was done in conjunction with TFGA, Department of Primary Industries, Water and Environment, Simplot, McCains and other industry groups.

In South Australia, the Potato Growers of South Australia, a commodity group of the South Australian Farmers Federation, maintained a grower list. This was checked and updated by the PITC and a government and private sector list developed.

In Western Australia, the Potato Growers of Western Australia maintained a growers list which, due to the operation of the Board in that state, was quite accurate except for duplicates. The PITC developed the government and private sector list with PGWA, Agriculture Western Australia and industry groups. This list was maintained by PGWA with a duplicate held by the PITC.

A central database using Filemaker Pro was developed to maintain the mailing and contact details for the government and service sector for Australia. The database was later used by New South Wales and Western Australian distributors.

With the new distribution system in place, it was used to launch Eyes on Potatoes in June 1997 and thereafter to mail out all publications.

The system involved seven mailing lists. Six state mailing lists contained growers, except for NSW and Western Australia which also included government and private sector people, and the central mailing list containing government and private sector people for all of Australia.

For each edition of Eyes on Potatoes and Potato Australia, mailing labels for the government and private sector would be sent to Queensland, Victorian and Tasmanian distributors. The remaining labels would be produced by the distributors.

Distributors were supplied with envelopes and reimbursed for mailing charges, labour and insertion if extra items needed to be put into the envelope besides the publication. State distributors were encouraged to put in other relevant state material on the proviso that any increase in mail charge would be borne by the distributor.

Mailing lists were updated regularly as a consistent flow of people came and went from the industry. Changes were directed back to the PITC and grower changes forwarded to the relevant distributor if the information was maintained on a state database.

Over time, many gaps were filled and increasingly people became aware that the PITC was the focal point for changes so the system became easier to keep up to date.

The distribution system was a bit unwieldy due to the number of mailing lists but it worked and the state organisations were happy and supportive of the arrangement as they maintained control over grower lists as well having a resource they could tap into as well. It therefore became a win-win situation.

Eyes on Potatoes and Potato Australia

The issue of industry requiring a more regular flow of information than just Potato Australia had been discussed at APIC and the possibility of producing a newsletter raised with the Editor of Potato Australia (Nathalie Jarosz from the Department of Primary Industries, Water and Environment, Tasmania).

Feedback from industry interviews clearly supported the APIC view and provided the information needed to develop a concept and project.

Discussions were held with the industry Editor and a plan put into place to establish an industry newsletter to go out in March, June and December, so in conjunction with Potato Australia (in September) the industry would receive quarterly publications.

(i) Advertising
Previously, advertising was managed by the Editor. Given the move to four publications a year, there was a need to free up the Editor so she could focus on editing and overall management of the publications.

An Advertising Manager was engaged.

A list of possible advertisers was supplied by the PITC to the Advertising Manager and updated as required.

Promotional articles supplied to the Editor by companies advertising in the publications, were mostly rejected. Advertorials, as they were called, could be included only as paid advertisements. Any advertorial included was clearly labelled so it was recognisable as an advertising feature. The Editor had the final say on the subject.

Inserts such as leaflets from research groups was encouraged and charged on a cost recovery basis. Inserts from advertisers were charged at full commercial rates. Seed directories were charged at rates somewhere between research group rates and full commercial rates. The reason for the lower charge was that seed groups consisted of levy payers and the directories were needed by industry.

The financial goal was to cover production and distribution costs with advertising.

(ii) Non-commercial inserts
An important goal of the PITC was to encourage researchers and non-commercial groups with information of use to the industry to include it with the potato publications. It could be machine inserted at the printer or if not suitable for machine insertion, at the distributor manually. Non-commercial material was charged at an insert rate to cover costs.

Some inserts were incorporated as part of the publication.

Inserts included as part of the publication included:
- Food Safety Checklist (June 1998 Eyes on Potatoes)
- Making life easier with information technology (March 1999 Eyes on Potatoes)

Inserts included as separate items:
- Cadmium in potatoes (March 1999 Eyes on Potatoes)
- Australian Potato Industry Strategic Plan summary (June 1999 Eyes on Potatoes)
- Quality Assurance guide for potato grower (December 1999 Eyes on Potatoes)
- Farm chemical storage guide (December 1999 Eyes on Potatoes)
- Potatoes 2000 Registration package (March 2000 Eyes on Potatoes)
- Australian Potato Industry Communication Plan summary (June 2000 Eyes on Potatoes)

(iii) Advisory Group
To ensure regional issues were being addressed, the publications Advisory Group was established to provide editorial support in identifying issues, organising content and ensuring the newsletter met grower needs. Representatives were mainly state agronomists from departments of agriculture, consultants or Executive Officers from industry organisations who interacted and understood the main issues impacting on their local industry.

The Advisory Group played a very important role in ensuring the content reflected industry needs. A teleconference would be held to plan each edition which involved the Advisory Group and Editorial staff.

(iv) Assistant Editor
The PITC became Assistant Editor, carrying out a second editorial check of articles, writing articles, working with researchers and industry leaders in producing articles and reports on meetings, carrying out interviews in the field, working to include content based on outcomes of the publications Advisory Group meetings, dealing with political issues and overseeing the publications on behalf of the Australian Potato Industry Council.

(v) Eyes on Potatoes
The first edition of Eyes on Potatoes was sent out in June 1997.

The newsletter was designed to be easy to read, able to be scanned quickly and therefore suitable for reading over breakfast, lunch or while having a drink break. It focused on people and particularly farmer involvement in projects and activities.

The aim was to have about 50% editorial space devoted to research and development and the articles would be less technical than Potato Australia. There would be a greater emphasis on exploring the issues from a farmer perspective and on application of the technology. The remaining 50% would contain industry news (especially where it had implications on the application of technology), reports from APIC, AUSVEG and the APIC R&D Committee, profiles of new information products, state roundups and profiles of states and other countries.

Eyes on Potatoes was published 1st March, 1st June and 1st December. Over the period of the project, the newsletter varied in size from 12 – 16 pages.

Volume	Month/year	Editorial Team	Number of pages
Vol 1	June 1997	Nathalie Jarosz, Leigh Walters, Helen Sims	12
Vol 2	December 1997	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 3	March 1998	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 4	June 1998	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 5	December 1998	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 6	March 1999	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 7	June 1999	Nathalie Jarosz, Leigh Walters, Helen Sims	12
Vol 8	December 1999	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 9	March 2000	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 10	June 2000	Nathalie Jarosz, Leigh Walters, Helen Sims	16
Vol 11	December 2000	Leigh Walters, Sandra Lanz, Helen Sims	16

A typical issue would contain:

- Farmer experience story – usually someone putting R&D outcomes into practice, with photos
- Feature story of 1-2 pages, including photos
- APIC, AUSVEG and APIC R&D Committee reports
- Several shorter stories and reviews of information products
- Lots of briefs and snippets
- State roundups
- Industry sector profile
- Picture stories of people participating in industry activities with descriptive captions
- About one third advertising

(vi) Potato Australia

The PITC became involved in the production of Potato Australia in 1997.

Potato Australia was well supported by industry with the main concern being that not all research was reported and some growers felt others may have been gaining a commercial benefit from the situation. To address the problem, the HRDC project table structure in the beginning of Potato Australia was modified so all projects were tabled and a page reference given to each research story covered or in lieu of it appearing there, an indication given about which Eyes on Potatoes edition it had or would appear in.

To collect stories, researchers were contacted each year for either a brief progress report or full article on their work. In this way each year all projects produced a report of some kind, with most being in Potato Australia.

Potato Australia and Eyes on Potatoes were continually refined to meet industry needs as discussion continued on issues drawn from industry interviews, group sessions, peak industry body meetings, state representatives and Advisory Editorial Group.

Potato Australia was published 1st September each year. Over the period of the project, the magazine varied in size from 52 – 68 pages.

Volume	Month/year	Editorial Team	Number of pages
Vol 8	September 1997	Nathalie Jarosz, Leigh Walters, Helen Sims	52
Vol 9	September 1998	Nathalie Jarosz, Leigh Walters, Helen Sims	64
Vol 10	September 1999	Nathalie Jarosz, Leigh Walters, Helen Sims	68
Vol 11	September 2000	Nathalie Jarosz, Leigh Walters, Helen Sims	56

The magazine was designed to be a professional, modern and easy to read technical reference.

A typical issue would contain:

- a complete list of current potato levy funded projects
- full technical articles (typically 1-2 pages, including illustrative material) and research summaries of all projects in progress when a full article has not been submitted
- synopses of new projects (summarised from Horticulture Australia proposals)
- reports from non-levy potato research, development or extension work
- review articles either summarising progress in an area where there has been R&D investment over a long period of time (eg IPM) or on issues of importance to the industry (eg salinity)
- about one quarter advertising.

The articles were to focus on clearly explaining the technology, implications for industry and how this information could be used to change management. Articles that did not establish a clear link to end use were edited, a rewrite requested or rejected.

In March 2000, Publication Guidelines were distributed to provide the publications Advisory Group, Distributors and peak industry bodies with a common understanding of the operating arrangements in place for the publications.

Later in 2000 Nathalie Jarosz, Editor for the publications resigned and the PITC worked with the APIC R&D Committee and HRDC to engage another Editor. Candidates were short listed based on applications and interviews. The interview panel consisted of Brian Newman, Jonathan Eccles, Clinton Zerella and the PITC.

In the interim Sandra Lanz was engaged to assist the PITC with preparation of December 2000 Eyes on Potatoes until there was a new Editor.

(vii) Evaluation of publications

Since the publications were financed by the potato industry in conjunction with associated advertising, it was essential to determine to what extent the magazines met the industry's needs and whether changes were required. Information was also needed on how to best attract advertising as advertising revenue for Eyes on Potatoes was less than expected.

A project (PT98042) was commissioned by the APIC R&D Committee through Nathalie Jarosz, the potato publications Editor, and McGregor Marketing was sub-contracted to undertake the research.

The work consisted of a two stage study:

Stage 1 - Understanding the issues by conducting two mini-group discussions and five in-depth interviews with readers, contributors and advertisers/advertising agencies.

Stage 2 - Measuring response by implementing 330 phone interviews with readers, 30 with researchers and 20 with advertisers/advertising agencies.

The work was undertaken in late 1998 and early 1999 with all Stage 2 interviews completed before distribution of the March 2000 Eyes on Potatoes.

A preliminary report was produced for Eyes on Potatoes in June 1999 with a detailed report later that year in Potato Australia.

The research indicated a high level of satisfaction with Potato Australia and Eyes on Potatoes and industry support for use of levy funds to help produce them.

Copies of the report were sent to all advertisers which resulted in a change in attitude towards Eyes on Potatoes and more advertisements being placed.

Developing a knowledgebase for industry activities

Managing a lot of information on people, projects and information products became difficult very quickly. The PITC therefore developed several databases to support the project. Initially these were for the PITC's sole use but later were more widely adopted by the Vegetable Industry Development Officers, as a result of development of the national internet service for the potato and vegetable industries, and with the distributors and Editor to assist with the publications.

The national internet service for the potato and vegetable industries required contact information on technical service providers to be maintained for the service. To link the two services into a national information service, Contact Manager and Project Manager were developed using an updated version of the databases already in use by the PITC.

A product database was also constructed to hold details of all information products identified by the PITC.

Working with researchers to foster technology transfer

Support was provided in developing articles for the potato publications and answering questions on a wide range of communication issues usually via telephone or email. Most questions involved fairly simple issues that could be quickly resolved by the PITC. In some cases more in depth support was required. The level of support varied depending on need and whether the PITC was the best person to provide the necessary help. In many situations, researchers were linked to the most appropriate people to satisfy their needs.

The PITC made a significant contribution to:

- A national strategy to reduce cadmium accumulation in potato crops (PT423) – assisted in design of second leaflet and distribution of both leaflets
- Development of a quality assured production and marketing system for fresh potatoes (PT96014) – communication strategy, networking, distribution
- Strategic R&D planning for the Potato Industry (PT97028) – Strategic Plan - participated in planning sessions, production of final plan, production of plan summary for Eyes on Potatoes; R&D Plan (Operational Plan) – facilitated development with HRDC
- Australian Potato Research & Technology Transfer Workshop, Adelaide, July 2000 (PT98039) – planning, promotion, final edit of proceedings, Information Central trade display, Waite tours, state newsletter, group sessions, photography, post conference feature in Potato Australia
- Development and implementation of National Seed Potato Certification Standards (PT97009) – networking, promotion
- National potato cyst nematode management strategy (PT99055) – project initiation, networking, hygiene strategy (Project support continued – see PT00001)

Improving access to potato information

Ultimately for industries to prosper, they need access to information important to their business when they need it. Having the right information available at the right time can be extremely valuable.

Information from the R&D program and what was happening in the industry forms a core part of the information required by business. Improving access to information to help business decisions therefore needs to be an important part of any communication strategy.

Internet/Potato Internet Starter Pak

Many people in industry interviews raised the idea of the internet as a possible way of getting information. Some thought it could provide all their information needs, others thought it would address the need for timely information and another group had little idea of what it could do but were excited about exploring the possibilities. For the most at the time though, it was an unknown and therefore a curiosity or of no initial interest.

Barry Philp from Primary Industry South Australia, a keen advocate of the possibilities of the new technologies, carrying out a study trip to the USA in 1998 to review options (PT97025).

Nathalie Jarosz, the Editor of the national potato publications, was also interested in this area of work. After the PITC's discussions with both, Nathalie initiated the project 'Facilitating the introduction of electronic information products and services to the Australian Potato Industry' - PT98037 – which began in late 1998 and linked together all our work.

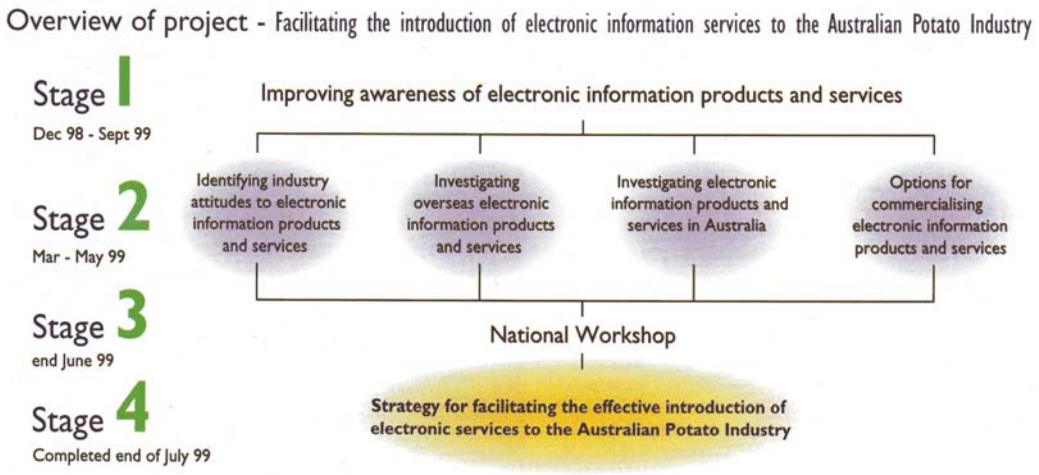
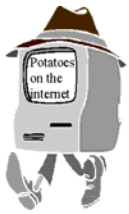


Figure 2: Major activities of the project PT98037

The PITC worked closely with Nathalie and Barry to develop and carry out the project. Each of us focused on different areas with Nathalie sub-contracting out jobs for the rest of the work.



The PITC's role in the project focused on:

- raising awareness of internet services through the Potato Internet Starter Pak so that when people were asked about what they required they would be better informed to the possibilities and able to make more constructive comments.
- raising the awareness of the internet and what it had to offer through the potato publications.
- helping develop the Electronic Information Services feature in March 1999 edition of Eyes on Potatoes.
- helping develop format and content for the group sessions.

The recommendations from the project were:

1. The Australian potato industry develops an electronic information service (EIS), delivered via the internet and coordinated by the potato industry.
2. The EIS be set up on a commercial basis with the view to becoming self-funding following initial seed money from industry/government sources.
3. A business plan be developed as a first step, detailing the structure, content, activities and funds required to establish the EIS.
4. The vegetable industry be formally approached regarding its interest in partnering to develop a common operational structure with each industry providing its own content.

The vegetable industry was approached and, through the Vegetable Industry Development Officers, a proposal developed to produce a Business Plan for a joint vegetable and potato internet service.

The project 'Business plan for a national internet site for the potato and vegetable industries' - VX00023 was supported by the potato and vegetable R&D Committees in October 2000 and started in November 2000.

Information Directory

The concept of an Information Directory emerged from an audit of information products for the industry and considering the outcomes of industry interviews. The directory was developed over the course of the project but not finished.

Its aim was to provide contact details for technical service providers and information on the industry locally and overseas, information products, levy system, breeding and evaluation system, industry and Commonwealth groups and other details that would help growers and technical service providers better understand and capitalise on the resources available.

Information collected for the Directory was used for articles in the potato publications.

Potato Archives

A clear need was identified from industry interviews for better access to past information. Much of the information from the levy funded R&D program was contained in HRDC Final Reports, conference proceedings and articles from Potato Australia and later Eyes on Potatoes, so improving access to this information was an important starting point.

The concept of an industry digital library was developed and discussed at some group meetings. The idea was well supported so a formal proposal developed and submitted to HRDC for consideration. Funding was received in December 2000.

Potatoes 2000

An important part of industry networking was participation at conferences. However, over the years the state departments of agriculture had declined in size and resources to run them reduced. External conference administrators were now more commonly being used to help address this deficiency.

With the changing structure of communication in the industry, it was therefore important for the PITC to take an active role in national conferences. As this conference was in the PITC's resident state of SA, he was able to a major part in organising the first national potato conference.

The Potatoes 2000 national conference was organised by the South Australian Research and Development Corporation. The PITC was on the Management Committee to provide support on behalf of the national peak industry bodies and focused on organising the following tasks:

- Input into all issues at the meetings from a national perspective
- Providing network support
- Promotion – Eyes on Potatoes, email alerts
- Final edit and layout of proceedings
- Post conference tours at the Waite Campus
- Organised group sessions
- State newsletter.

- Photography
- Potato 2000 feature in Potato Australia

Activities - Develop a Code of Practice for diseases

The initial goal was to develop a Code of Practice focusing on Potato Cyst Nematode (PCN) that would also control many other potato diseases.

Early work

In the early stages, the focus remained on PCN and the activities carried out to develop an understanding of what needed to be done were:

- literature search focusing on PCN and hygiene
- selected research papers and books obtained as reference material
- pathologists involved in the Western Australian and the Victorian outbreaks interviewed to develop a better understanding of what happened, how outbreaks were contained and issues of use in developing a Code
- discussions with Department of Natural Resources and Environment Quarantine Manager about past outbreaks
- discussion session with the Gembrook grower group about how growers dealt with the outbreak and social and trade problems that developed as a result of quarantine regulations
- discussions with people indirectly involved in the outbreak about how they viewed what was done, the following controls and their attitude towards PCN as a pest.
- examined the scientific veracity of Horticultural Policy Council (HPC) recommendations and other literature produced by state department of agricultures and industry associations.

The outcomes of the above work highlighted a number of problems with implementing a Code of Practice for PCN.

Firstly, PCN as an exotic disease subject to quarantine becomes not only a cropping issue but also a social and economic issue due to the trade restrictions. PCN was a bit like AIDS, nearly everyone had heard of it, were fearful of the disease and preferred not to consider it as something that may affect them.

Secondly, industry groups were not able to reach consensus about how to manage the trade implications which left affected growers disillusioned with the whole quarantine and industry resolution process.

Thirdly, few people believed quarantine was effective, which severely undermined confidence in follow-up strategies proposed by the local industry.

Fourthly, after the initial outbreaks, both nematologists directly involved in the outbreaks moved onto other jobs outside horticulture, greatly reducing practical expertise in the industry for dealing with the issue.

It became clear from industry interviews that many people were not interested in adopting a hygiene strategy focusing on one disease and were more interested in a holistic hygiene strategy for the farm which also included diseases they already had.

A number of growers were concerned with the proliferation of Codes of Practices and wanted a rationalisation, while others were just not interested in managing the risk for a disease they did not have or from their point of view, were not likely to get.

If a hygiene strategy was to gain support it had to be whole farm strategy.

This approach had been tried but previous attempts were seen as too simplistic in that they logically made sense but were difficult to implement as they could not easily accommodate farm differences. This meant compromises had to be made but growers often had inadequate information or expertise to make decisions confidently. It was often easier for the task to be put aside as too difficult even when the overall goal was seen as worthwhile by the grower.

Developing a new approach

To address this issue, more information and tools needed to be available to enable growers or technical service providers to develop hygiene strategies suitable for the farm.

The PITC concluded that the best course of action to move forward was to develop the tools to help individuals develop and refine a hygiene strategy for the farm.

For any system, there were three key needs:

1. Growers needed the ability to focus on diseases that were important to them as a first step
2. Hygiene information was required for individual diseases
3. Tools were required to use this information so a farm specific hygiene strategy could be developed.

To achieve the third requirement in particular meant the package had to be computer or internet based. The amount of information to be considered and the complexity of presenting a simple outcome required the power of a computer. To do the task manually would have been too time consuming and difficult for most people.

A computer program was developed using Filemaker Pro and refined. Unfortunately there was not the money or time to complete this work in this project. (See PT00001 for more details.)

National PCN Management Plan

The PCN issue was a lot bigger than just the hygiene protocol and if any real progress was going to be made the problem had to be dealt with at a national level by the industry. Issues of how to deal with an outbreak, how to mange areas affected by PCN, the hygiene protocol and a trade protocol had to be nationally agreed to for the industry to move forward.

The PITC supported development of the National PCN Management Plan and the APIC R&D Committee endorsed the PITC's involvement with the project team to develop the draft hygiene strategy and provide support as required (PT99055).

This work was not concluded before the end of this project and was carried over into the new project PT00001.

Activities - Develop a long term technology transfer plan for the industry

Key questions were posed at the beginning of the project that needed to be answered during the course of the project.

(1) Is the use of a PITC effective?
Yes – Given that the PITC works with other sectors of the industry. A single person can coordinate an effective national strategy.

(2) Future role of the PITC and support requirements
The future role of the PITC was developed over the course of the project and spelt out in the Communication Plan (See Appendix I).

The main support requirements important to the project consisted of:

- a serviced quiet office
- desktop and portable computers (ie. desktop computer used as a shared facility for support staff when PITC away)
- data projector for presentations including internet and software product demonstrations
- scanner for digitising text and images
- software to carry out the work
    - standard office software
    - email program that could handle large message volumes without the need for archiving and with rapid searching facility
    - database program for contact management, project management, product management and specialised tasks.
    - web design package for prototyping and simple product development (eg. Potato Internet Starter Pak)
    - graphics package for manipulating photos
    - other programs as required for demonstration.
- suitable travel budget with airport lounge membership to enable business facilities to be used while waiting for flights, meetings and if required interviews. If a lot of time was to be spent traveling, then the downtime while waiting for planes needs to be negated. The lounge facilities could also be used for meals to reduce administration when dealing with receipts.

(3) Most appropriate location for the PITC
The location of the PITC at the South Australian Farmers Federation worked well. The main issue was to avoid becoming involved as a host organisation resource resulting in impact on project activities. A sound initial contract meant later disagreements could be resolved.

Being associated with a grower organisation worked to the PITC's advantage. The PITC's national role meant he still had excellent access to government resources as required.

(4) Priority list of topics for which technology transfer programs must be developed
This was developed during the course of the project and included in the Communication Plan (Appendix I).

(5) Role of providing specialist technology transfer expertise to other projects
This proved to be an important but at times difficult role as the PITC was not included in contractual arrangements between HRDC and the researcher. This meant that the PITC's involvement was via the good will of the researcher in many instances. Although most researchers saw this as a benefit, the situation occasionally became difficult when the researcher did not agree with the PITC.

Given the decline in government department's extension services and more private groups becoming involved in research, this technology transfer role needed to continue and be strengthened through the contractual process to ensure industry needs were met.

(6) Production and marketing systems for technology transfer packages
The main issue with product development was design. If the design met audience needs, there was not a problem. Heavy reliance on researchers taking a product all the way to the marketplace was problematic given most researchers were not adequately trained in this area.

Involving the PITC in the process was important from the industry perspective but again, as for item (5); the lack of contractual support was a problem. Often researchers did not consider they needed help so the PITC could easily be introduced to the project too late to address any problems.

It was important for the PITC to be involved early in the R&D project and the marketing role needed to be strengthened through the contractual process. The PITC worked with HRDC to address this issue but problems still remained unresolved at the end of the project.

Marketing of packages was a major problem given there were so many distribution points. All potato packages should be marketed through a central distributor to achieve economies of scale and enable appropriate services to be developed.

The PITC was not in a position to provide this service and explored alternatives with HRDC to centralise distribution but without resolution before the end of the project. A central distributor for all horticultural publication would have been the ideal as it would have greatly simplified marketing.

(7) Development of a technology transfer business plan
See Appendix I.

(8) Evaluate the benefit cost of the technology transfer strategy
Not carried out – See Discussion.

The Communication Plan (Appendix I) was developed using the following process:

1. looked at how other industries and group developed communication plans
2. talked to the beneficiaries to work out what they needed
3. worked out the distribution of beneficiaries
4. looked at the numbers involved
5. considered the issues that would impact on the approach taken
6. worked out what I wanted to achieve
7. went back and looked at extension theory
8. determined the priorities
9. defined the principle audience
10. developed a draft plan
11. sent the plan out for comment
12. revised the plan and submitted it to the APIC R&D Committee for consideration.

(1) Looked at how other industries and group developed communication plans
I looked at many different communication plans. Many were difficult to implement as they contained motherhood statements, poorly defined goals, unachievable goals and failed to clearly define the audience.

Our plan needed to be realistic, achievable and tackle issues clearly important to industry.

(2) Talked to the beneficiaries to work out what they needed
Industry interviews, group sessions and the ongoing interaction with industry people provided a clear guide as to what needed to be done.

To broaden my understanding of issues affecting industry, I read everything I could on the industry and challenges it was facing. This provided a context for the work.

Importantly, I did not rely on industry experts. This could have easily skewed the focus for the work as many were not average levy payers.

(3) Worked out the distribution of beneficiaries

The approach to communication had to take into account the realities of what could be achieved. If the audience for the plan was located close to the PITC, then the communication approach used could have relied more heavily on personal contact. In the potato industry, the situation was one of a very fragmented industry spread over a large part of Australia.

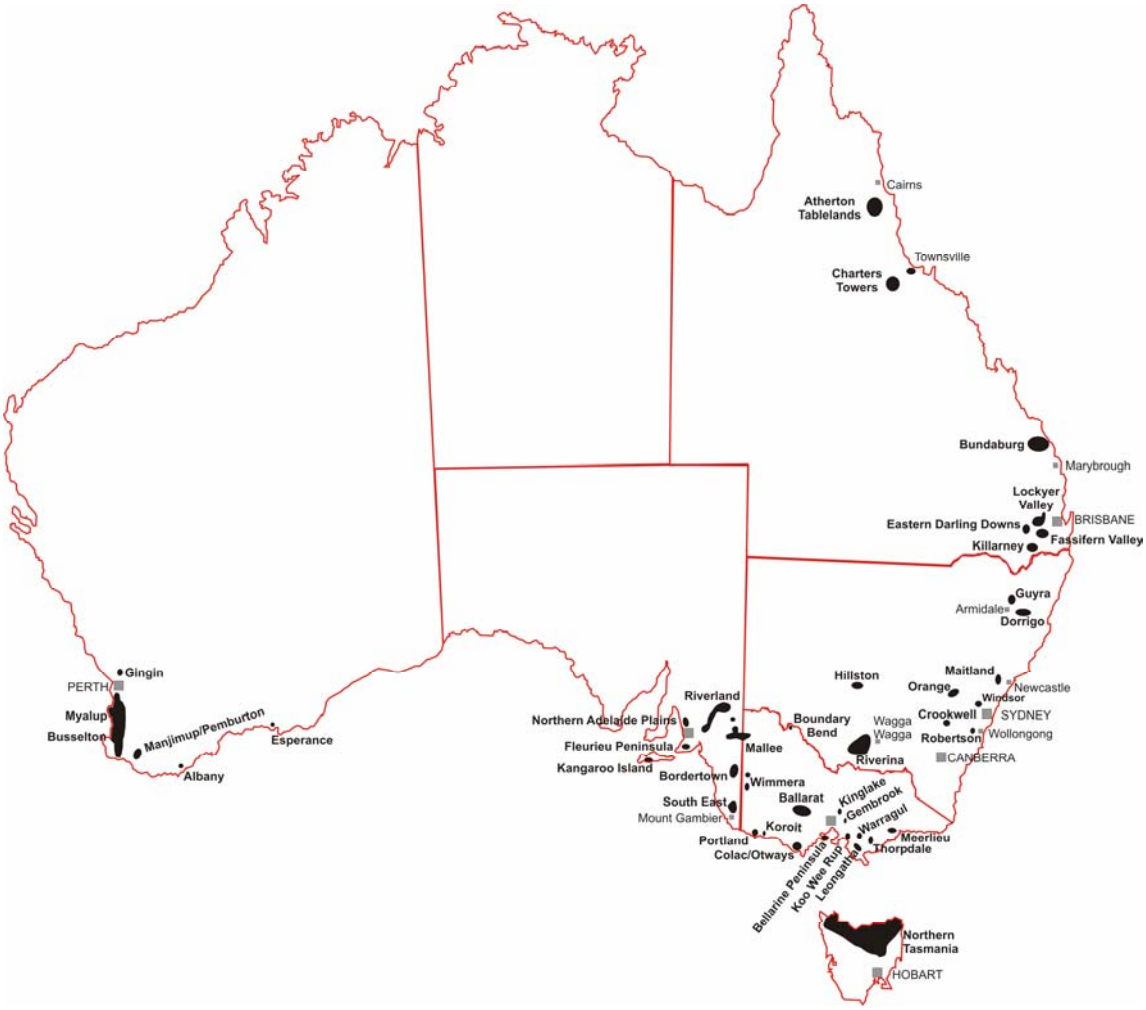


Figure 3: Distribution of potato growers in Australia

(4) Looked at the numbers involved

The size and nature of the industry had a large bearing on the approach used.

2000 Farmers
900 Service industry people (Technical service providers)
~45% Processing growers
~45% Fresh growers
10% Seed growers
Value: $400,000,000 farmgate value

(5) Considered the issues that would impact on the approach taken
The following were some of the more important issues that would impact on the approach taken:

- broad spread of farmers
- grower clusters were breaking up in the fresh industry
- declining influence of government, increasing influence of the private service industry and implications this had on researchers
- national focus made it difficult for researchers to communicate at a group level
- government services were largely state bound and state focused
- service industry was an important part of the industry network
- commercial interest not necessarily in conflict with national interest
- technical service provider numbers were in decline.

(6) Worked out what I wanted to achieve
This was fairly simple - improve adoption of outcomes from the national research & development program

(7) Went back and looked at extension theory
Extension was about creating change within communities. The techniques were used by groups such as extension workers, consultants and processing field officers.

Key principles to be considered included:

- Technology transfer was an educational process.
- Growers learnt best from other people.
- There was a need to achieve a multiplier effect as one person could only do so much.
- Incremental learning was important in complex issues.
- The PITC role was to help growers to help themselves and not to provide a consultancy service.
- The PITC needed to plan for raised expectations. Once something was introduced and accepted, it would become the norm and people would then look for something better.
- The PITC needed to take people on the journey and not leave them behind.

(8) Determined the priorities
These were:

- Produce the information in a suitable form and convey it to the target audience.
- Target knowledge gaps that were a high priority to growers.
- Put systems in place so target audiences could help themselves.
- Develop educational processes in areas of high priority.
- Increase contact between growers and the PITC and, growers and researchers.

(9) Defined the principle audience
The audience for the communication plan clearly described who was being targeted. These people consisted of the principal beneficiaries.

Growers – Processing, Fresh and Seed (levy payers)

<u>Technical service providers</u>
Agents
Agribusiness advisers
Consultants
Extension workers
Fertiliser and chemical company agronomists
Packer field officers
Processing company field staff (levy payers)
Researchers

(10) Developed a draft plan
How a plan was designed impacted on whether it was used. The following were key design considerations:

- easy to understand
- established clear limits of influence
- an important marketing tool
- progress can easily be monitored
- clear timelines
- self contained
- easily evaluated.

A draft plan was then prepared.

(11) Sent the plan out for comment
The plan was sent to about 40 people and groups for comment.

(12) Revised the plan and submitted it to the APIC R&D Committee for consideration
The main issues raised were summarised, the plan modified and draft plan and issues supplied to the APIC R&D Committee and APIC for consideration.

The Communication Plan was endorsed by APIC and provided the basis for a project application and the follow on project 'Implementing the potato industry's communication plan' – PT00001 (Appendix I).

The plan was distributed to key groups and a four page summary put in the June 2000 edition of Eyes on Potatoes.

Impact and adoption

The project was not formally evaluated as many tasks were continued into the new project 'Implementing the Potato Industry's communication plan' – PT00001. During the course of the project, market research was carried out for the Potato Internet Starter Pak and Eyes on Potatoes and Potato Australia.

Potato Internet Starter Pak

The Potato Internet Starter Pak linked potato internet sites across the planet. It was a precursor product to a national internet service under investigation.

A simple survey was varied out in 1998 of Starter Pak users. Unfortunately only 18 people responded of the 71 sent surveys. As only email addresses were available for the users, no telephone follow-up could be carried out to entice a larger sample.

The main conclusions were that most respondents were able to use the Starter Pak without problems and most wanted it updated and improved (Appendix H).

Given that by the end of the project about 300 people had requested the Starter Pak, it can be reasonably assumed the product met a useful need. The true extent of its use though was difficult to ascertain as some users could have been repeat requests due to people changing email addresses. There was no easy way, given the only identifier of an individual user was the email address, of being sure of the true number of users.

As the internet was relatively new to most people and the process of obtaining the Starter Pak (ie. by email) and installing it was not something many people would have had previous experience with, the demand for the package was considered very good.

Potato Australia and Eyes on Potatoes

Market research was carried in 1998-1999. Results indicated both publications were well received by the target audience.

(The following graphs and quotes have been extracted from the Final Report on the Market Research (PT98042) carried out by McGregor Marketing on behalf of the industry. For a full explanation and background to the market research please refer to the report.)

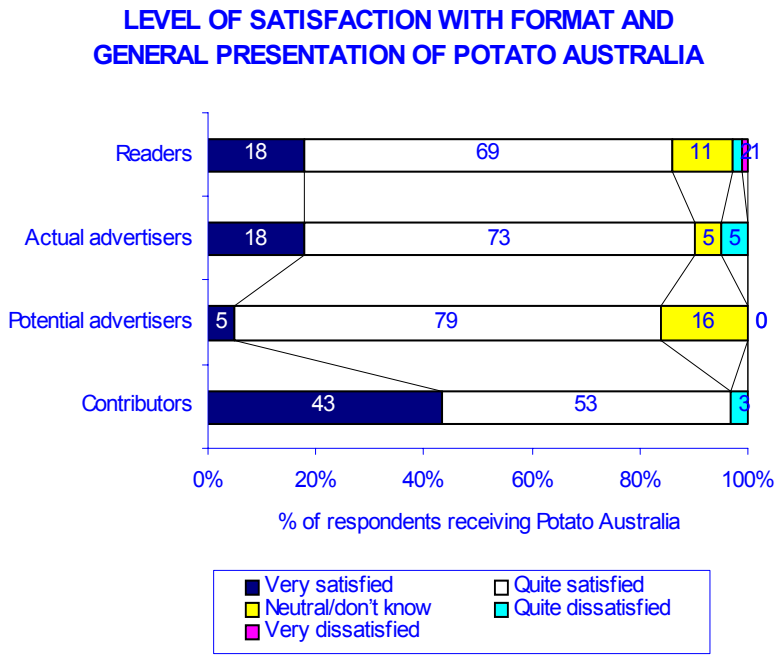


Figure 4: Level of satisfaction with Potato Australia

Both Potato Australia and Eyes on Potatoes demonstrated high levels of satisfaction. 87% of readers were satisfied with Potato Australia and 83% with Eyes on Potatoes. Most importantly, the levels of not being satisfied were extremely low.

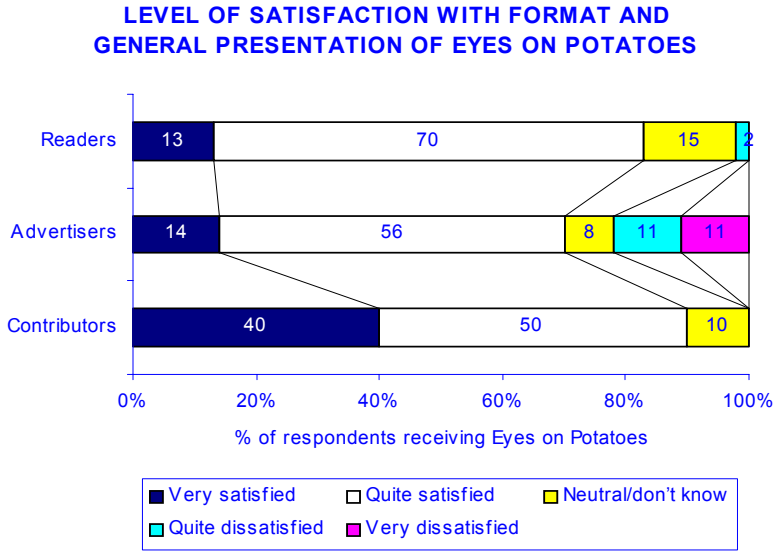


Figure 5: Level of satisfaction with Eyes on Potatoes

The value of a publication as a resource could be gauged by whether people kept it for future reference. Given that Potato Australia was designed as the industry's technical journal, it was not surprising it was more likely to be kept than Eyes on Potatoes. Responses for both publications though were quite high.

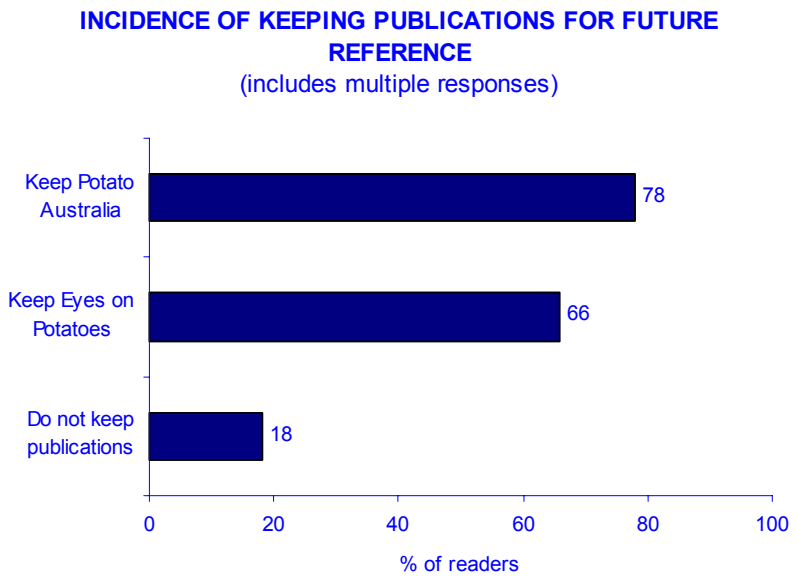


Figure 6: Keeping publications for future reference

'The majority of readers considered there were no aspects of Potato Australia to be improved (57%). No specific answers were mentioned by more than 7% of readers.'

'Seven in ten readers who received Eyes on Potatoes thought there were no aspects to be improved (72%). Not one specific improvement was suggested by more than 2% of respondents.'

In general readers were happy with both publications with improvements suggested in many cases already being addressed or were addressed as a result of the Market Research.

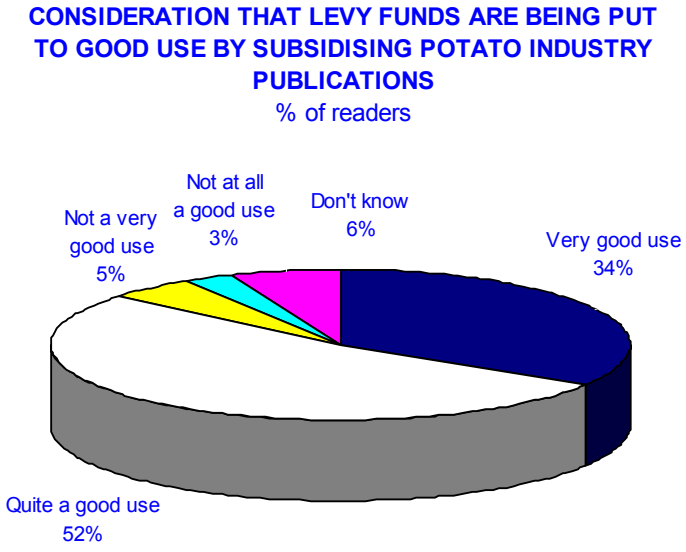


Figure 7: Are levy funds being put to good use

86% of readers thought that levy funds were being put to very good use or quite good use. This was a solid endorsement for the publications.

Given readers' concerns were addressed, as raised in the market research, the opportunity existed to improve this result.

Potato Australia and Eyes on Potatoes were the two main communication vehicles in place at the time so the results represented a very positive endorsement for the work carried out.

Success is how you evaluate the outcome

Strong support from industry representatives in the Australian Potato Industry Council, AUSVEG Potato Group and the APIC R&D Committee indicated satisfaction with the progress made in this project and the Communication Plan prepared for the next stage. This provided a qualitative endorsement of the impact of the project outcomes.

No formal evaluation was carried out as per discussions with the APIC R&D Committee and HRDC.

Discussion

Running a communication program involves a degree of visibility (high profile) and a degree of invisibility (low profile) to ensure success. The balance between the two was impacted by culture, politics, performance and the communicator's persona.

Ownership

The PITC's role was to facilitate communication. Where this role differed from many others was that it involved, in most cases, using other people's work for which those people have a strong bond and sense of ownership.

The challenge was therefore to guide and coax people towards a solution that ultimately would be better for end users and if done properly reflect positively on those people. It was also important the PITC did not take ownership away from the original author otherwise others would be reluctant to work with the PITC in the future.

The PITC role was challenging in that he did not work in the organisations for which he was doing work and in many cases was not well known by the individuals he worked with to develop communication solutions.

This meant the researchers or person receiving help had to put their trust in a near total stranger. This was especially difficult for researchers as they were very independent, many had spent a number of years to get to where they were and now they had to trust someone to take control or at least have a major role in the last step of their work. This was not an instinctively normal response and many researchers found it difficult and at times were even obstructive to the process.

The skill of the PITC was to overcome these barriers and help the researcher or person see the value in what was being done and regard it as a win-win situation.

The project highlighted that establishing relationships was the key to success for effective technology transfer. The process had greatest effect when the work was done with people already known to the PITC. The better the relationship with researchers, the more trust existed and the easier it was to do the work.

As these relationships developed, the PITC was generally drawn into the work at an earlier stage.

The important conclusion the PITC draws from these observations was that to gain full value from the research involved developing trusting relationships. Not an easy task given the number of people involved and their spread across Australia.

Capturing value

It was interesting to note the approach to product development used in agricultural industries was quite unusual in commercial business. Most marketing people responsible for product development are usually part of the business or contracted to the business, have the support of management and are usually involved from the inception of the research if only to highlight market needs.

In our situation, the PITC had no direct link with the business, was not even employed by the funding body but by a state farmer association, management in a researcher's organisation was usually unaware of what was happening except in general terms and the researcher was not even contractually obliged to talk to the PITC.

It was only through the good will of those involved in most cases that the system was able to work.

Our solution compared to other businesses was a compromise but had the weakness of the PITC never really having time to explore in depth the full value of the research outcomes. The danger in this was the full value of the research outcomes not being fully used.

For an economist, the question would be whether the incremental value produced by the extra work was worth further investment. In the past, the answer was assumed to be no, although this was rarely tested.

If we consider other products in the marketplace, what often sets them apart is not the technology but the final packaging and how well that suited user's needs. Think of mobile phones and music players. In many cases the different products have similar technology and yet some products through good design have greater appeal to customers.

The question concerning the PITC was that in the race to find the high impacting technology were we passing by many high value opportunities?

The APIC R&D Committee and HRDC rarely had time to properly review outcomes from completed work. That task was left largely to the researcher, the PITC and maybe some external interested parties if we were lucky.

As an industry we put a lot of effort into selecting projects and managing contracts. We also spent about 10% of research funds on communication, about the same as we spent on project selection and managing the funds.

An often quoted figure for taking a product to marketplace is 10-30 times the R&D budget. This was obviously not something we could aspire to with our limited budgets. It does pose the question about whether we were paying too little attention to gaining full value from what we have done.

In my opinion, our greatest value was, and still is, in the information we have already generated and not effectively used.

Information that was fragmented, approaches to product development that simply lacked the expertise to extract their true value and project outcomes rejected because those involved lacked the expertise to realise their value, were commonplace.

This poses a significant challenge for the industry. Firstly to value the intellectual property it has developed. Secondly to have the mechanisms in place to ensure the full value of the IP is used.

The PITC had a valuable role in this process but could not do it alone.

Visible performance

One of the many challenges for the PITC was to balance visible output with invisible output.

The former consisted of products produced that could be attributed to the PITC's efforts resulting in a higher profile. The latter were products produced where it was not obvious the PITC was involved and work on the longer term products where results would not emerge for several years. This was low profile work which people did not associate with the PITC.

Achieving a balance between these two areas was critical and the PITC was lucky to have a work program that enabled a reasonable balance to be achieved.

The PITC needed a profile so people would want to work with him and the industry saw value in the work and therefore continued support for the project.

Conversely, researchers and other industry people needed a profile and the PITC needed to ensure he remained in the background so as not to take away from people he was trying to support. There were two issues involved here for the researcher in particular; recognition for work done and ownership of outcomes.

If most of the PITC's work focused on helping others it would have been difficult for the PITC to maintain a reasonable profile without undermining the ownership of work by others. Supporting people was also not valued by many people in the same way as producing an entire product.

This issue was very important as perception often translates into reality when it comes to performance evaluation. In the PITCs experience, a detailed assessment of work carried out was rarely done. Evaluation of performance relied on quick assessments of tangible outputs.

It was difficult to show the value of strategic work, facilitation and support. Yet all of these areas of work were very important for the industry.

The work program therefore had to have a mix of visible or tangible outcomes which were easily assessable and invisible outcomes which were often not valued.

Working with others

The PITC's success lay as much with others as with himself. Much of the work was a team effort and as such highlights the importance of industry relationships.

However, maintaining industry relationships in a country the size of Australia was difficult and yet very important. Time management allocation for networking verses industry development activities was often difficult and became more so towards the end of the project.

The reason for the difficulty was quite simple. As the needs were identified, more work emerged (eg. developing new products and projects) that would address those needs. This meant the time the PITC could spend on networking reduced.

	Early stages of project	Late stages of project
Networking	100%	40%
Industry development	0%	60%

Achieving a satisfactory balance was difficult as a lot of the development work could not be easily outsourced.

Funding delays

The PITC was funded for the core activities but not for any new activities identified as a result of the work. This meant in most cases, except where small amounts were concerned, a project application had to be submitted. Given that planning and submitting an application may easily take six months and the time before receiving funding up to another 18 months, it meant a two year lead time for any new work. In a four year project this was too long.

Work could not be started before funding was confirmed as there was no guarantee the APIC R&D Committee would support the application. So even if work did start on confirmation, the timeline was still 18 months from when planning started.

A faster funding mechanism needs to be established.

Relationship with peak industry groups

Attendance at the PITC at the APIC, AUSVEG Potato Group and APIC R&D Committee meeting was a big help in facilitating communication. Industry leaders had enough on their minds without having to focus on the communication needs of what they were doing. Given the groups only met twice a year, meetings often had very full agendas.

The PITC being in attendance meant he could report on the meetings and identify communication activities that would support their goals. A lot of the resulting activities may not have even been formalised, as the expectation was that the PITC would interact with whoever was required if he was uncertain about what needed to be done.

This relationship though did not just happen but developed as the committees became more comfortable with the PITC.

For the PITC, the relationship saved a lot of time that would have been otherwise spent trying to understand and interpret the peak industry body's intentions.

Participating in meetings such as these also had their dangers for the unwary. There were times the PITC had to withhold comment as the group worked through the issue and came to terms with the best solution. It was at times tempting to intervene, but this could also interfere with the learning process that came with debating the issue. The PITC therefore contributed very rarely and only when there was a real need or requested to do so.

To the committee members' credit, they realised the need for the PITC's presence and saw the possibilities of this arrangement.

Distribution of information

The effective distribution of information was critical to address the industry's communication needs. The solution, to maintain seven mailing lists, might have seemed absurd to an outsider given it would be simpler to have one mailing list.

However, the reason for the decision was sound given the PITC's goal of wanting to work with industry groups and not undermine what they were doing. There was also the important issue to growers of privacy. An important overriding issue for the PITC was that information needed to get out to people, regardless of the system used, and that took priority over everything else.

State industry organisations were an important part of the industry and in the PITCs opinion needed to be strengthened.

The distribution system was a compromise to establish a close link with the state organisations and encourage them to take advantage of the arrangement for state communications. The latter was seen by the PITC as important to build on information coming out of the national program and help address the regional issues.

Several states took advantage of this arrangement but not as much as was expected by the PITC. This was unfortunate as many regional issues, including implementation of R&D outcomes, that could not be easily dealt with nationally, would have benefited from local input. Unfortunately state organisations often had very limited resources.

The other issue that was important to appreciate was that distribution lists were powerful tools. There was a concern by many of the state organisations about centralising control and what that would mean for their relevance to their local industry. At first this might seem a poor reason to give but it was quite valid.

The other underlying concern was whether a nationally controlled mailing system would provide real benefits back to the state organisations. This was not as simple as it seemed.

Contact information was used for a variety of reasons, if only to call a person or send out information about a field day. Passing over responsibility of mailing list for a national publication did not mean there was no need to maintain a mailing list. So for many groups there was no advantage in having a centralised system as it did not reduce the need for the local system. Given they could also lose perceived relevance by their local industry, it was not surprising there was considerable debate over this issue.

Discussions the PITC had with various people not directly involved highlighted a lack of understanding of this point.

Meeting user's needs

Producing information products designed to meet user's needs was the PITC's main goal. The secondary goal was to use design to make the products as attractive as possible to the users. If there was to be any compromise due to a lack of resources, then meeting user's needs took priority.

There was no doubt people, including growers, respond to good design. In early discussions with technical service providers it was commonly indicated to the PITC growers were not interested in anything fancy. Even Eyes on Potatoes was seen by some people as being extravagant in the early stages.

The comments highlight an underlying feeling that everything needs to be done on a 'shoe string budget'. This attitude can be counterproductive though in that it tends to devalue research outcomes.

Corporate knowledge

Communicators such as the PITC view information and its management more critically than most people as it is the basis for their work.

The Australian Potato Industry generated an enormous amount of information over the years and yet its corporate memory largely resides in the minds of a few well seasoned individuals.

As a trained Botanist, the PITC referred back to information generated by scientists as far back as the early 1900's, especially when dealing with plant diseases. Often this was the ground breaking work on the topic. Researchers carry out literature reviews for the same reason, although electronic systems do not necessarily pick up a lot of the older information at this stage.

Too often the PITC would hear people discounting the earlier potato work as of no value. The PITC found this attitude quite worrying for the following reasons.

Research is a bit like producing bits of a crossword puzzle. Each bit of research builds on previous work and eventually the solution will appear either by filling in all the pieces or more commonly by having enough pieces to extrapolate to a conclusion.

The significance of research outcomes may not always be clear at the time they are produced. Often it maybe several years later and after further research work that the true value of the information becomes apparent.

As an industry, if participants cannot gain access to the information easily they will not recognise the value of the different pieces of the puzzle and potentially miss valuable solutions. Anybody who has used an internet search engine to research a problem will probably appreciate the significance of this comment.

If we discount what we have learnt, then we risk repeating what we have done and jeopardise our progress as an industry.

To deal with this issue the PITC initiated several initiatives.

Potato Archives was conceived and a project developed to address part of the problem. The Archives would become a digital library to store industry information.

A project to develop an internet service was also developed to tackle the need for more timely information and build on the benefits of Potato Archives. The internet provided the tools to allow people to search for what they needed when they needed it.

In the new Communication Plan there was also provision to produce a range of books on key topics. Books were an important way to capture information but also provided the opportunity to consolidate information. This was very important as research tended to produce a lot of bits of information that were hard for many people to use effectively. Producing a book consolidated this information into a more usable form. The value of the book was therefore greater the sum of its individual bits.

Information overload

Many people complained of information overload and yet were starved of good information. This was a major conundrum for many in the industry as it was for most people in their everyday lives. The amount of information will continue to grow so we need to become smarter in the way we manage it.

As previously discussed during this project, and included in the new Communication Plan, tools were being developed to enable information to be accessed and used more easily. One such tool though, the internet, was extremely powerful but only if a person could use what it had to offer.

Some tools can be easily understood and used successfully while others require training in their use.

We cannot assume growers and other key people will gain the necessary skills to capitalise on the new technologies. Growers in particular were often isolated business people who lacked the learning opportunities of those working in an office environment.

In the Business Plan for the new internet service (VX00023), there was a significant training budget for helping people to use the internet effectively.

Turning researchers into marketers

Working with researchers to develop products was an interesting exercise as no two people were alike. Some researchers simply did not want to loose any control of what they produced while others were so open it was a delight to work with them. The bulk of the people were somewhere in the middle.

A lot was expected of researchers. They had to do good science that was relevant to industry needs and then market it as well. The challenge of doing both tasks well was considerable and often out of the reach of many people.

Researchers were usually not trained in communication, marketing or business management.

The project management process did not adequately take this into account. This issue was raised with the APIC R&D Committee on at least two occasions but they did not have the expertise to deal with it. Discussions with HRDC also did not yield a solution.

The problem was a difficult one but it was not going away. With declining communication resources in state government departments, particularly in extension, the problem was becoming worse.

One solution was to commission the work and build in the necessary skills. In theory this should work, but often limited budgets meant the communication component was the first to be cut. Therefore the same problem emerged.

Commissioning all work would have also been counterproductive, because as history has shown, it stifles innovation.

No obvious solution emerged before the end of this project.

Code of Practice

At the start of this work it was not obvious that implementing a national Code of Practice for Potato Cyst Nematode would be so difficult given what had been done in the past. It was hoped a national Code would also help address the hygiene needs for a range of diseases at the same time.

The enormous variation in farm types, soils, climate, terrain and operational arrangements makes developing a universal Code of Practice for Australia very difficult. The task was comparable to developing a single Code for Europe or the United States given the size of Australia and the diversity of soils and climates.

Work in this project though has highlighted a path forward but one that requires considerably more work and specialised input.

The first key issue that emerged was that any strategy needed to be holistic dealing with the breadth of diseases on the farm. Given our principle focus was potatoes, this involved a major change in thinking. It also involved the need to better understand what other issues needed to be considered with other crops and diseases.

The second key issue was that any hygiene strategy had to be able to be modified to suite the farm. A strategy that might work for one farm could be impractical for another farm. Assuming the grower could adjust the strategy accordingly without the appropriate information or support was expecting a lot given the complexity of many of the issues involved.

This brings me onto the third key issue – information and tools. Hygiene tools to enable a grower to develop a hygiene strategy for their farm were lacking. Hygiene information for many diseases was often not in a usable form. For some diseases suitable information may not yet exist.

Given acceptance of the first two issues the third issue was the most important for communicators. The prototype package, Potato Hygiene Strategist, was constructed to progress thinking in this area. It may not be fully appropriate in its current form but provides an important starting point to progress to a solution.

Some might consider that taking this course will create a solution that will be too complex for many of the users. In the initial instance this may be so, but to have a tool that helped progress us towards a more viable solution is very valuable and will enable more people to input into developing a better product. Even having all the relevant information collated in one place is a big step forward. Often what is required is for someone to take the first step and then others can see the possibilities and take it from there. We need to be careful not to underestimate the skill of our technical service providers.

Undoubtedly the first step will be the hardest.

Evaluation

This project was not evaluated because it did not conclude before PT00001 started. Continuing the work also had widespread support based on what people observed. In some regards this was a better form of assessment.

Even if an evaluation had been carried out it was doubtful a complete picture about the project's success could have been formed. As with many extension type projects involving facilitating adoption of technology, the process of change was difficult to measure.

In a technology transfer project such as this, the PITC was distant from the target audience which reduced the impact at a local level compared to what could be achieved through a locally based extension worker.

Therefore a technology transfer project could best be regarded as tackling the challenges of awareness, access and understanding of new technology but had limited impact on acceptance, commitment or of overcoming local obstacles to technology adoption.

The strength of a project such this one was through providing access to technology in forms that could be readily used. The challenge of finally implementing the technology still resided with the grower and the quality of support from technical service providers.

To adopt new technology may require taking five steps forward. Evaluating the outcome of any extension practice can only be done at a point in time. If the extension work helped people to take the five steps it would be regarded as a success. What happens though if the extension work helps people take the first three steps before the evaluation and the last two steps afterwards? Was helping people along the journey but not to conclude it in the projects time frame a failure?

Not all hurdles to adopting new technology can be overcome quickly. In some cases something as simple as being able to afford the changes can delay implementation even when there was a desire to change.

The challenges of evaluating extension work have not been adequately tackled anywhere in the world except for very simple extension activities.

Any final assessment, will for the foreseeable future, be largely qualitative with components of the work being quantitatively assessed where possible.

The next stage

The work does not stop here. The follow-up project PT00001 continues on the work. The challenges faced in the next stage are much more difficult as many of the easy problems have been solved.

The three key themes for the new work are simple but accurately reflect what needs to be done. They have been important evolving themes in this project.

Awareness

Access

Understanding

Recommendations

The existing management of technology transfer in its broadest context needs to be reconsidered given the enormous changes currently underway in the industry. The current industry structure for the R&D program is inadequate to meet the challenges being faced and ensure the full value of the investment in R&D is realised.

Problem 1 Too little emphasis is placed on assessing the unrealised value of completed technology. The current process assumes that people involved in projects developing new technology have the skills to fully exploit it. This is a flawed assumption that can result in potentially valuable work not being fully exploited. The fall back position of relying on the PITC had problems as he often did not have the authority to do a proper assessment under HRDC contractual arrangements.

Solution 1 A technical committee with a cross section of people with technology transfer, scientific and marketing skills be formed to look at project outcomes and provide recommendations to the APIC R&D Committee. This committee could be drawn from groups with a vested interest in seeing the technology adopted.

Solution 2 The PITC be given contractual authority through HRDC to ensure effective product development and communication of outcomes.

Problem 2 How we manage Intellectual Property needs to be reviewed. In the past, state departments of agriculture played an important role in maintaining Intellectual Property but this role has declined as the departments move away from providing extension support and focus more on providing contract technical services to industry and government.

Other groups with an interest in the Intellectual Property such as AUSVEG, Potato Processors Association of Australia, HRDC and the APIC R&D Committee have not yet filled the vacuum except in an ad hoc way. If we are to gain full value from Intellectual Property, it needs to be managed.

Solution 1 A group involving stakeholders, Intellectual Property specialists and communicators need to develop a formal process for ensuring Intellectual Property is fully exploited for the benefit of levy payers and the Australian Government. This could involve a review of existing Intellectual Property produced through the levy program, current processes for maintaining Intellectual Property and attitudes of technology developers with regard to maintaining Intellectual Property. This process should be followed by a workshop to develop an IP strategy. The draft strategy could then distributed for broader comment and input from interested parties.

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Cartoonist
John Fennell

Distributors
Stephen Wade (NSW Agriculture), Chris Simpson, Sue Dillon and Tina Hill (Queensland Fruit &Vegetable Growers), Michael Cain, Marion Birse and Simone Pemberton (South Australian Farmers Federation), John Rich (Tasmanian Farmers & Graziers Association), David Lewien and Roseanne Achterberg (Victorian Farmers Federation), Tony Pitt (Ag-Challenge) and Tom Cairstairs and Jim Turley (Potato Growers of Western Australia)

Production team
David Peck, Andrew Perry and the team at AT&M

Australian Potato Industry Council (APIC)
Councillors: Wayne Cornish (Grower), Ron Cummings (Merchant), Mike Durkin (Merchant), Phillip O'Keefe (Simplot), Jeff Peterson (Smiths), Ian Rickuss (Grower), John Smink (Grower)
Advisors: Jonathan Eccles (Horticultural Research and Development Corporation), Rowland Laurence (Tasmanian Institute for Agricultural Research), Barry Philp (Department of Primary Industries and Resources South Australia)

Steering Committee (APIC R&D Committee)
David Addison, Neville Beaumont, John Bishop, Wayne Cornish, Dom Della Vedova, John Doyle, Paul Frost, Jack Meagher, Tony Gietzel, Peter Hardman, Les HorsfieldDes Jennings, Ken Labbett, Max McKenna, Jack Meagher, Geoff Moar, Jeff Peterson, Anthony Rehbein, Ian Ricckus, Milton RoddaFrank Rovers, Laurie Shaw, John Smink, Allan Smith, Clinton Zerella

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Appendix A: Discussion points for industry interviews

The industry interviews were informal to ensure useful information was not unintentionally filtered by the interview process. The following checklist was to ensure that certain points were dealt with in all interviews.

Agribusiness

- Work role and how they operate
- Networking in the potato industry and how it could be improved.
- Are there sufficient information products available to growers
- What information products are needed
- Relationships and contact between states.
- Their role in servicing industries information needs.
- Relationship with Department.
- Attitude to the concept of a code of practice.
- Issues important for a Code of Practice
- Any other comments on the code of practice
- What is needed to improve the performance of the potato industry.
- What information do they need to operate effectively that they find difficult to obtain.
- Any comments on Potato Australia
- Any other comments
- Business card.

Consultants

- Work role and how you operate
- Networking in the potato industry and how it could be improved.
- Are there sufficient information products available to growers
- What information products are needed
- Relationships and contact between states.
- Role of consultants in servicing industries information needs.
- Relationship with Department
- Attitude to the concept of a code of practice.
- Issues important for a Code of Practice
- Any other comments on the code of practice
- What is needed to improve the performance of the potato industry.
- What information do they need to operate effectively that they find difficult to obtain
- Any comments on Potato Australia
- Any other comments
- Business card

Executive Officer

- Overview of the potato industry
- Rundown on how they operates for the potato industry
- Grower groups
- Publications
- Distribution of Potato Australia
    - ♦ Comments on approach and his organisations role
    - ♦ Coverage
    - ♦ Validation - how is it kept up to date wrt to new growers
    - ♦ Attitude towards increasing the number of mailouts and inserts.
- Any market research done on technology transfer.
- Relationship between the industry and the department.
- Relationships between states.

- Attitude to current networking in the potato industry and how it could be improved.
- Attitude to information available to growers.
- Attitude to the role of processors, consultants and other agribusiness in servicing industries information needs.
- What is needed to improve the performance of the potato industry.
- Code of practice
    - His role in the PCN report.
    - Comments on what has happened since the report.
    - How would he like to see the issue proceed.
    - Grower attitudes and Association's current position.
    - Any other comments or advice on how to proceed.
- Any comments on Potato Australia
- Other comments
- Business card

Extension

- Work role
- Overview of the potato industry in their area.
- Information products available to growers.
- What information products are needed
- Networking in the potato industry and how it could be improved
- Relationships and contact between states and internationally.
- Relationship between industry and department.
- Role of processors, consultants and other agribusiness in servicing industries information needs.
- Any market research been done on technology transfer.
- Attitude to the concept of a code of practice.
- Current information on farm hygiene
- Any other comments on the code of practice
- What is needed to improve the performance of the potato industry.
- Any comments on Potato Australia
- How would they like to see it improved.
- Other comments
- Business card

Field Officer

- Work role and operation of the facility.
- Are they happy with the information they receive or seek to obtain on the industry.
- Would they like to get more information.
- Do they receive Potato Australia.
- What do they think of Potato Australia.
- How would they like to see it improved.
- Are they well enough informed about R&D programs.
- Relationships and contact with other states and overseas.
- Do they want to know more about what is happening overseas.
- Do they use a computer or the internet.
- Relationship with the Department
- Attitude to the concept of a code of practice.
- Issues important for a Code of Practice
- Any other comments on the code of practice
- What is needed to improve the performance of the potato industry in Tasmania.
- Any other comments.
- Business card

Growers

- What type of operation do they have.
- Are they happy with the information they receive or seek to obtain.
- Would they like to get more information.
- What are the five most important issues for them as managers.
- Are you happy with what you know or able to obtain on these issues.
- Do they receive Potato Australia.
- What do they think of Potato Australia.
- How would they like to see it improved.
- Are they well enough informed about research.
- Do they want to know more about what is happening in other states.
- Do they want to know more about what is happening overseas.
- Do they use a computer or the internet.
- Relationship with the Department.
- Attitude to the concept of a code of practice.
- Issues important for a Code of Practice
- Any other comments on the code of practice
- What is needed to improve the performance of the potato industry.
- Any other comments.
- Business card

Industry Manager

- Work role
- What information products are available to growers
- Relationships and contact between states.
- Networking in the potato industry and how it could be improved.
- Information products available to growers.
- What information products are needed
- Role of processors, consultants and other agribusiness in servicing industries information needs.
- What is needed to improve the performance of the potato industry in Tasmania.
- Attitude to the concept of a code of practice.
- Current information on farm hygiene
- Issues important for a Code of Practice
- Any other comments on the code of practice
- Do they receive Potato Australia
- What do they think of Potato Australia
- How would they like to see it improved. Any comments on Potato Australia
- Other comments
- Business card

Research

- Work role
- What information products are needed.
- Networking in the potato industry and how it could be improved.
- Relationships and contact between states and internationally.
- Are they having any difficulties with the communication component of their projects.
- Would guidelines on the communication component be helpful.
- How do they publicize their work on completion.
- Any comments on Potato Australia
- Any other comments
- Business card

Comments from industry interviews

The following issues have been collated from the industry interviews. Duplicate issues have been removed as have observations or comments with no informative value for the project. Some comments have been edited to clarify meaning or remove references to individuals where it may not be be appropriate.

Comments in brackets are notes by the PITC.

Appendix B: Comments from industry interviews – New South Wales

Code of practice

Agrees with whole farm concept.
Bacterial wilt years ago was got rid of through hygiene practices.
Blight, rhizoctonia, insects, seed piece breakdown major issues.
Clients express concern about rhizoctonia , black dot, blackleg (minor way), fusariums, phoma (not much experience) leaks, phythium.
Contract fertiliser spreading and aerial spraying
COP: Growers wary of areas because of disease, seed is a big problem, growers compromise by growing their own and major component of growing crops is the amount of money spent on controlling root disease.
Cost of fumigation is about $400/ac. So if we could use rotation, that would be terrific.
Disinfect seed cutter. Washing out seed containers. Using fumigant to clean up. Frito Lay has brought people through with plastic boots. Trucks load in one place. Farmers do not worry about. Reused bags do not like – be aware if they come back. Bins coming back dirty. Does not allow this. Has crop inspector. Keep an eye on containers. Packing sheds are a problem. Bins can be sent out to other places before coming back. Now packing own. Do not recycle water which can be a source of contamination. Seed industry a major problem with importing root diseases. Can start off with fresh ground and get powdery scab in the first year. Plant crisping over in the ground gets around it to some extent, but for fresh need to fumigate. Rhizoctonia, Scurf. Have used rape, but it also promotes sclerotinia. Using millet for nematode control. Can control sclerotinia but easier to use rotations. Fumigation very successful, just so we can keep using it. - Grower
Early dying increased by verticillium and pratylenchus
Early dying is a problem. Seed piece decay of Colibans.
Field days they wear plastic boots and have cars out of the paddock.
Focus on what is being brought onto the farm. Can control it on the farm.
Have hygiene strategies for movement of people between properties, the banning of potatoes into Korea from Victoria raises the issue of awareness and the importance of a code of practice, large market but we need to address the trade problems, at present, it is a perception problem with regard to how overseas buyers regard the cleanliness of our system, biggest disease vehicle is the transportation bins, farmers do not take responsibility for cleanliness, how many farmers have boot cleaners and control movement of international visitors onto farms.
High value of land in Robinson (land has been sold for $10,000/ac). Running out of land for rotations. Therefore looking for a productivity gains, niche markets and higher value crops.
How do you control movement of trucks.
Hygiene is important for soil borne diseases.
Hygiene major one. Big problem with growers such as movement of vehicles. Washing down of seed cutters is not understood by growers farmers do not understand life cycles and there is not good info concerning life cycles etc. Are the protocols for moving potatoes adequate? Are growers kept up to date with these things? Lot of this type of information is not known by growers.
In the Riverina, growers wreck one area, then buy another farm.
Late blight. Very few production problems.
Like to think we are strict with hygiene, but we are not.
Local farmers are picking up the hygiene messages.
Lot of rubbish back on pellets.
Major problems – diseases (rhizoctonia, powdery scab)
Many things are not practical.
Movement of trucks is a real issue. Have requested trucks to be pressure cleaned. In Kempsey, very strict about trucks moving off bitumen.
Need for consideration of a code for chemical use.
Nematodes are one of our greatest threats. Needs more work.

No contractors. Where do you draw the line? People moving between farms (e.g. farmers, reps). Besides boxes have a problem with bags coming back onto properties. One way bags? Bins do not leave before being sprayed out. These things can be done, but who pays for it. The grower always wears the costs.
No major farm hygiene practice in this area.
No real problems with concept of a COP
One farmer uses a high pressure hose to wash down between his five properties.
Own Hygiene practices. Never in same paddock each year.
Packers do not care
Powdery scab major concern.
Powdery scab, scab, nematodes not an issue.
Processing industry is a lot stricter and we can take our hat off to them.
Protocols cover a range of farm hygiene practices which essentially covers many of the issues.
Quarantine is important to prevent problems coming in. A lot of the barriers to preventing. We do not understand why WA can move potatoes into NSW and we cannot do reverse. (Need quarantine overview for movement between states and overseas)
Since Crookwell got powdery scab, the restrictions have been relaxed.
The concept of a COP is not a problem. It is necessary. Happy with the voluntary concept, sees it as another information source.
The PCN exercise in Victoria was not a credible exercise. Out of site, out of mind.
There is no reserve disaster fund. No incentive to report PCN. People in these areas get certified. Need an emergency fund otherwise they won't report it. Competition between growers means if someone gets a disease then it is the luck of the grower.
Use to work on 5 yr rotation, but working towards 7 years.
We operate a code of practice now but it is not called a code of practice.
When growing mother seed, used a hygiene strategy supplied by breeding people.
When there are problems with dirt, it is difficult to resolve. (big problem with forklifts)
Wooden bins sent down to Victoria and there would be lent out and then come back with soil and old spuds.
Growers looked at one way packaging. When PCN was going on there was a lot of concern.
Work on a 4 year rotation (lucerne, canola, sorghum), but having problems with nematodes. Sudex has nematode reduction affect.
Would be good to see a COP come in and put up on garage wall.

Research

A lot of growers do not feel they are getting good value from the levy. What have they got out of it? In NSW not a lot of research on the ground, so this impacts on perceived value of levy.
CRC Tropical Pest Management have developed an extension methodology involving industry right from the start. They are using this approach with Western Flower Thrip.
Appreciates research being done. Is happy with R & D effort at this stage.
Equity of key money use is an issue with levy. Partly due to the lack of people to do the research.
For the amount of money going into levies, we get very little out of it.
Growers say they wish they would do more research on people to get them to eat potatoes.
Growers see vegetable levy as another tax. Potato growers are better informed.
HRDC project booklet good.
In Robertson, they were negative to the levy until they got their research project.
IPM (Western Sydney) research has been good.
Long overdue that the benefits of the research be looked at.
Need to do trials in the areas they are grown.
No research continuance so people have not been keeping up contacts. Would like research continuance, thinks it important.
Not happy with some of the requirements of the funding applications. Example, cost benefit analysis.
Not in favour of R & D because we can produce all we want but we can't sell it. - Agent
Our main problem is the low prices. Processing part of the industry is lacking in this area. We do not have suitable processing varieties. Need to be able to put levy where it is useful.
Pretty happy with amount of research. Has purchased some of the reports. Finds them OK. - Grower
R & D issues – support looking at process. Thinks the system works very well. Lot of interaction between Roger Kirkham and growers. Especially in Riverina. Looking at developing a quality management system in NSW and Victoria.
Researchers are too slow in feeding information back out. - Researcher
Researchers need to see growers as a resource (A code of practice is a way of demonstrating our commitment to hygiene and disease control which impacts on whether we are perceived as self-governing or unreliable in what we say and do)
Resistance to levy was greater by the smaller growers who had greater difficulty in catching benefits of the research.

Seed tuber work has been good.
Should be looking at producing varieties for Asian market.
Should there be a footer on publications so if the information is copied, the identity of the source is obvious (library standards).
Some research need local examples. One good example is variety trials. Need for demonstrations.
Wants input, a two way interaction. Seems to be a wall between the people doing the research and those who use the research. Need to get people together. Have good networks with state departments.
What is the protocol for copyright. How can it be acknowledged when work is used in other publications.
With HRDC booklet the problem is it is only once a year and it is easily forgotten.
Would be good to have some trials in the local area.

Networking and communication

A lot of groups are operating. We could feed back information back through groups.
A lot of the machinery reps visit a lot of the growers.
A lot of what we receive is about processed potatoes or boutique lines.
Ag. Dept. does not have staff any more and they are not a lot of value to the industry. Staff don't seem to work with industry on a one to basis. Lot more emphasis coming back into agribusiness.
Agents need a lot more information.
Price is not transmitting the demand signals.
Any of the R & D I have to go fishing for it. No problem.
Anything I can do to support local organisations such as Riverina Potato Growers. – Extension Officer/Researcher
Both growers and departments being cut off from chemical information.
Chemical industry people do not spend much time in the area so there is not a lot of support.
Communication has to be interactive, rather than one way.
Concerned about how to get their work out to other growers. – Grower group
Department no help, loss of people means a lack of support. Heard Hawkesbury was taking over diagnostic service from Rydalmere.
Department of Ag is not number one in adoption of technology. Usually neighbours and people such as chemical people can be more credible.
Dept of Ag could better inform people of new chemicals.
Dept of Ag could do better on informing people of new chemicals that come onto the market.
Dept. of Ag was never strong up this way. – Agent (Northern)
Difficulty in accessing ARRIP through HRDC.
Do not get access to a lot of information. Many probably do not request HRDC reports. Not easy to get it when you need it.
Do not receive a lot of information. Most information is gained from growers. Only been around 5 years. Do not have a lot of knowledge.
Do not see the national conferences as a problem from the point of view of travelling. This is not seen as an issue with a crisping conference in Qld being planned.
Do not see the reps here like in the past. Do not get the same contact and information flow.
Does not do a lot of reading. A lot of material coming through. Material needs to be brief.
Does not ring other states a lot. Gets the American Potato Journal. (Official publication of The Potato Association of America, Orana, Maine, USA)
Does not tap interstate groups, would like to.
Doesn't see change in the industry. Still wants to see independent research.
Elders putting together internet site and working with Matt Darcey on including HRDC information.
Encourage growers to participate in reviving Potato Growers Association. Lack of organisational structure is a problem.
Everybody should be sent a full report (Final Report) which can be put in a folder. Needs to be a storage system for the reports.
Failure of NSW Ag to provide extension services.
Generally do not like getting the printed material, but rather get the person. Growers more stimulated in this way. Research not always applicable, but does give direction. How it can be modified can be a problem.
Get Peelings but not sure how long that will continue since Frito Lay pulled out from supporting it.
Get Peelings.
Get potato research and American Potato Grower. Do not have formal linkages internationally. Have not gone overseas to develop contacts. Find out mostly from growers who travel and visiting scientists. – Extension Officer
Good Fruit and Vegetables the easiest to get. One issue is how many people get Good Fruit and Vegetables. A lot of non-potato articles.
Good fruit and vegetables very good but not a lot on potatoes.

Good international links. Lack of focus on potatoes by NSW Agriculture. Lack of research people. Do not use the departments to any extent. - Processor
Group has to provide guide to HRDC.
Growers need an information package on getting up an Internet connection.
Growers that he knows are forthcoming with information.
Growers' main concern is how to grow crops and things such as sprays, fertilisers is key information.
Has Compendium of Potato Diseases. Has Potato Health. - Grower
Have a lot to learn so any information would be useful.
Have always been able to access people. But need to know who does what and where they are.
Have interaction on varietal work and cadmium, but little else.
Have not received any information from National Chemical registration system.
Have travelled to overseas potato growing areas.
Hear very little about the R & D.
Horticulture 2000 – What do they do?
How do we find out information about processing?
How do you get farmers to read. Some can't read and others are poor readers.
Ideal information system: something I can easily access from home or a remote place and finding out about what information I don't know.
If I have a problem I ring Stephen Wade, Roger Kirkham, Chemical resellers.
If Walt Stephenson's program available would be interested
In tomato industry, have run courses for the Agribusiness industry.
Many industry drivers are getting older, need to involve younger ones.
Infofax has possibilities.
Information may be able to send out with Elders information.
Information products needed: Chemicals registered, fertilisers plus other details etc.
Information sources; chemical companies, fertiliser, growers.
Like the concept of a centre of excellence for research but could also be for extension. We need a national centre of excellence. Could be supported by corporate groups.
Like the concept of a national extension service. Like the concept of Kodinin but not sure whether it should be commercial or government run.
Liked Stephen Wades newsletter, always read it. - Researcher
Likes to direct mail wherever possible to target groups.
Looking at value adding to sales through provision of information services.
Lot of growers rely on Agribusiness. Some are excellent information seekers.
Lot of our information from local trials, lot of contact with Roger Kirkham and at the few meeting have locally.
Main concern is the lack of information.
Many of the growers are practical people, wives do most of the reading and bookwork. The method of transfer impacts on credibility.
Marketing group in Sydney, AgSell, putting agents in contact with growers.
Maybe if we need more information have information sheets on projects.
Most technology from crisping research group which has impacted on fresh.
Moving to whole of crop specialists.
Need information about imports coming into Australia.
Need to look at each of the states as separate entities.
No comments on how R&D levy information.
No information reaching the growers.
No problems with projects the group is involved in. At conference a lot of very good information that we do not hear about elsewhere.
Not a lot of information.
Not a lot of market information.
Not linked in interstate or internationally for information.
NSW departments putting agnotes/agfacts onto Internet. Growth model in Walt's CD package was developed by CSIRO in Griffith.
Number one priority is getting information, knowing what the industry wants and how we should react.
One difficulty is the networking (getting people together). Who are we not communicating with? The cost and time required to attend conferences an issue.
Only person who irrigates. Like more information on powdery scab. Lot of growers are share farmers who probably find it difficult to invest.
Our service demand driven. Focus on issues relevant at the time.
Pay quality bonuses. Encourage growers to work together. - Processor
People are not getting advice because there are less government, chemical company reps, local reps.
Posters good for display at show.

Potato Associations in NSW – Robinson, Dorrigo, Gyra (mainly seed growers), Hawkesbury Free Growers (includes other vegetables), Orange Potato Growers. A Maitland Group who works through NSW Farmers (thinks). Guyra and Crookwell groups only seed ones.
Potato growers do not want to give out their names.
Potato News put out by NSW Ag by Stephen Wade.
Potatoes need to have educational kits in schools. If we are to make gains, we need to target schools.
Previously looked at working with Agribusiness but there was not the support. Have moved back to doing it themselves. - Processor
Projects done through HRDC I do hear about. There is a lot of work done elsewhere at universities, departments and CSIRO. Example, Craig Henderson work on irrigation. What is Landcare doing around the country.
Publications – Agfacts, Agnotes, Education Kit, whole state and regional rundown on potatoes.
Publications from University of California and University if Idaho – Government Manager
Put out newsletter and would feed out information through it. Would look at internet site every couple of months.
QDPI has got a very good market profile service. Look at specific markets.
QLD DPI Agribusiness Marketing Service (07) 239 3258 favours the use of resource centres where growers can go and look at information.
Resellers a major source of information.
Resellers have remained stable while chem reps and ag dept people have fallen in number.
Resource centre left with grower groups.
Rob Spooner Hart trying to encourage IPM but not a lot of uptake. Not a lot of expertise in area.
Rural Research was very good.
Seems to be a gap between the supermarkets and growers in the information flow. Problem is networking between states. Not so much with research between states, but between research in one state and extension in other states. If projects are to be mentioned, then the information has to be disseminated nationally. It is annoying people that information is not coming out.
Should be pulling out information from similar areas overseas such as Columbia Basin. Very important.
Supports idea of a simple guide to other similar areas.
Some information from APS publications.
Stephen Wade our greatest source of information. Talk to other growers about problems.
Storing publications and distribution (Ask HRDC whether they see themselves in this) Maybe there needs to be a control centre for the industry. This would provide a distribution centre (eg. Kondinnin) that can be operated more commercially.
Supermarkets are indicating consumer resistance where there isn't
Supermarkets moving more to sourcing direct from growers. As a consequence, the signals through the market are not an accurate reflection.
Taps SA SARDI – Chris Williams and Trevor Wickes.
Technical conferences. Growers should be encouraged to go to research conferences.
The important issue is the ability to network. Difficult to maintain lists of contacts. Another problem is with publications – people ask for folders, how to service demand. Ben Rose at Manjimup interested in potatoes from a Landcare perspective. Ben working on soil management issues with potatoes.
The signals from the market give no reflection as to what the consumers want.
Uses his wife to tap information in the potato industry. Next he would talk to Leigh James at the Dept..
Uses local network. Chemical company information can be very biased. Need better chemical information, is getting better. Supermarkets have put restrictions on certain chemicals. Cannot get away from certain chemicals, particularly an issue with insecticides. The average grower is better informed about chemicals.
Visual aids get across the message better than written information.
We need to influence city folk because they have the votes.
Well served as a result of the project and involvement of local consultant. Before project did not get much information. The old NSW Potato Growers was not much help. Only when there was a crisis (e.g. PCN) did we receive information. We have had to be very persistent with NSW Farmers SPAG to include more industry groups – Agribusiness Stephen Wade puts out Potato News. Very little information from NSW Agriculture. Lot of growers are leaving industry. - Grower
With cutback in Government services there are less people on the ground.
With Department retrenching, do not get much information on sprays. Also applies to fertiliser.
Would like to broaden growers' horizons but lacks the hard data.
Would like to see farmers get more involved in the communication process.

Internet and directory

Group not into computers.
Has Internet and taps USA sites. - Grower
Have good set up at home. Too dusty in office. On NFF program. Have Email.
His son has computer, not internet.

How do other groups find out about the internet proposal? High proportion of farmers probably would not use it.
If we move away from the old agronomy model the electronic methods hold a lot of potential such as Walt system program and Ben Dowlings. Walt's system was very professional. Any system needs to be well done.
Three minute access is a brilliant concept. Maybe have an extension officer co-ordinating information collation.
Information directory – who is doing projects.
Internet – I am comfortable with it. Many others wouldn't.
Internet – would like to see it first. Does not know whether he would buy a computer.
Likes the approach of the internet concept, does not have computer skills, would like international information and would be interested in the directory.
Internet database – Good idea.
Internet has potential if it could be tapped through Agribusiness.
Internet option sounds good. It would diffuse enquiries for publications if the information was on the Internet.
Internet will be something of the future. Faxing is too expensive.
Maybe opportunity for Internet training.
Probably half would have computers. With some of the banks the growers are doing accounts on the computer and sending to the banks. Know only one grower on the internet.
Son has internet. Likes internet concept. Sees it very logical and positive way to go.
The internet as a source of information is the way to go.
Thinks we should be getting into the internet. Some growers are already getting information off the internet.
With information on the internet need to consider legal implications. Verification of information.
Would like to see draft of information directory

Newsletter and Potato Australia

Be good if there is a spray chart in Potato Australia.
Clarification as to the amount of acceptable cadmium in fertiliser.
Concerned about R & D reporting. After funding has been allocated, this needs to be an ongoing updating of progress. Lot of disillusionment about where the money has gone.
Develop Potato Australia into a large technical issue which provides a vehicle for getting trial information out.
Difficult to read scientific papers. Need more digestible information. Agribusiness is working with growers on a daily or at least weekly basis. A person coming in occasionally lacks the credibility.
Distribution patchy
Does not get PA
Expect that the industry would resource the production of Potato Australia overtime.
Get Good Fruit & Vegetables
Get Potato Australia x2
Get Potato Merchant.
Gross margin budgets are not around any more.
Growers would like to know things such as seed prices. Not only average, but also range.
How many imports came in and how much is going out.
Ideally, would like industry to take over distribution.
In the past there were articles done on potato growing in other areas. Maybe one district per issue. Also some articles about what is happening overseas. Such as what is going on in SE Asia.
In tomato Industry, there were benchmarking studies done by independent information. Need more economic information so people know.
In Tomato magazine, they have a statistical summary over 3 pages. This would be good for potatoes, Industry overview.
It would be useful to have a national database. Only proviso is that we write to industry to verify they are happy with it.
Lack of information on marketing x 2
Look at a range of publications to get feedback on what is happening in the industry. We should be getting it at least once a month.
Look at Grapegrower and Winemaker. Annual technical update.
Lot of confusion about AHC, HRDC, APIC, AUSVEG.
Lot of interest in seed research in breaking dormancy and getting early establishment. (eg. Coliban).
Mailing list - Agribusiness Association of Australia based in SA
Need for more information on economic threshold levels for pests
Need jokes and funny stories to break up the articles.
Need more about how the industry is developing.
Need more marketing information
Need processing variety for Sept, Oct and November period. We have not seen the variety results. We need to see when the levy is going and how to implement it.
Newsletter should be charged for.
Newsletter should have marketing information.

Not a lot known about marketing to groups such as Woolworths. Would like to know a lot more about the system. Price difference between what the grower is getting and what they are being sold for. Issue fluorescent lights over plastic bagged potatoes.
Only see it because wife gets Potato Australia. Looks good. – Service provider
Potato Australia is good but need more interaction between growers and researchers.
Potato Australia is good magazine. Disappointed his article was not included in the last issue.
Potato Australia is very good. APIC should write to minister and tell him they are doing a good job. This can have a big impact.
R & D: We are not getting the information so cannot comment, Where there is a resource person in the area like Sandra, it is not likely to be a problem. In many areas the lack of support, difficult to get growers to do things because they are so busy and at night they are so tired.
Send out a sponsored newsletter.
The variety information in Potato Australia is not enough. Need a more constant flow of information. Need to be kept updated about progress. Need information which is hot.
Thinks newsletter is a good idea. Would like Potato Australia to be once a quarter and have a contact person in each state to solicit articles. Would charge for Potato Australia.
What are the contract prices are in each state. In Tomato Information.
Will send out survey of computer users with newsletter, but it has to be easy, prepaid, preaddressed, envelope.
With Potato Australia need it more often. Not as glossy, not as expensive, but informative. Likes the Western Potatoes monthly newsletter. Need shorter articles, couple of paragraphs.
With Potato Australia should think of an index.
With QA system, it has highlighted that many of the chemicals being used are not registered. (Need a list of registered chemicals for potatoes.)

Grower Management

Direct drilling has been tried and possibly could be an option.
Growers here are very production oriented.
Some irrigation. Few years ago, none.
The quality of potatoes in stores is rubbish. The quality control in the stores is not being done properly.
Treating potatoes as an opportunity crop because of the uncertainty.
Very large yield increases with fumigation.

Miscellaneous

30-40 growers gone from area. In years to come only the bigger growers will survive with processing contracts.
Potatoes should be sold on variety, not prettiness.
80% into packers, 20% into markets.
90% of the local potatoes goes through two agents. The agents try to get the best price for the growers and do not undercut each other.
A lot of rubbish seen in fresh fruit and vegetable outlets. Supermarkets seem to be focusing more on quality.
Agent in Gatton pays into a fidelity bond to protect farmers, but not ourselves. Do have Qld Merchants Association. They have looked at this, but not done anything. Credit control is bad. Other people who are not been accredited get around the system. Would be happy to pay a levy to gain credit control. - Agent
Agents are waiting 90+ days for money from merchants. This is a major problem that needs to be addressed.
APIC does not have a seed representative.
As a result of changes by departments, there are not people working in areas such as chemicals.
Biggest problem is there is too much produce; need more promotion.
Biggest problem is the price structure.
Cadmium is an important issue, especially if the rate is not increased.
Cannot rely on NSW Ag and NSW Farmers. - Grower
Coliban very temperamental to grow, yet supermarkets want it.
Concentrate on sending overseas the processed good, not the raw product. This enables us to control consistency.
Concerned about the number of imports.
Departments are pulling away from providing support and passing off jobs back to industry.
Difficult to pick up contracts. Tender process will become more common which pits grower against grower. A lot of people are fed up with industry and leaving it.
Even some of the better growers do not receive good prices.
Everything is polarising towards a few large packers.
Few around Oaklands, Finley, Deniliquin, only about 32 left in Riverina growing. Growing bigger areas. About 60% of state's production.
Find fresh market difficult. Run by bigger growers and agents. Hard to get money. More difficult to grow.
For export, there needs to be money in it. Have been offered ridiculously low prices.

Freight impacts on seed, price and competitiveness.
Growers do not feel the NSW Farmers adequately represents the horticultural industry.
Growing mainly for ware due to powdery scab.
Guyra District Potato Association. Includes seed and ware although mainly seed growers who are financial.
Have a good eating potato – cannot market it to achieve premium. People in cities eating less fresh produce.
Have some back gardens who sell into table market with variable quality which impacts on the image as a seed area.
In Newcastle area, there has been potato promotion through Steggles, which has increased consumption.
In NSW only three research horticulturists. Only one been in department for more that 5 years. QA may impact on introduction of new ideas. In market system, it is becoming more rigid. If there is anything innovative that comes in it will be through the little people.
In some cases substitution with varieties such as Atlantic. Needs policing.
In some situations, packers are not supplying good quality.
In this area, about 20 growers, 10-12 serious growers with any scale to them. Seed growers first tuber growers second. Gray Soil. As the prices decline, seed will become more important. Powdery scab free.
Industry is very fragmented.
Industry not organised in this state. Hope NSW Farmers will take running and unite things. The lack of representative group creates difficulties in getting decisions on such things as APIC levy.
Industry wants certain size, but we cannot always supply it. Ground rules changed regularly.
Issue – Disposal of chemical drums
Local fresh market is stuffed. Opportunities in the processing industry.
Lollipopping is a significant problem. Gray soil potatoes are being coloured as red soil potatoes.
Lot of the growers are old, some young ones.
Low margins makes it difficult to produce value-added services. In the USA they seem to be able to achieve a profitable mix. It seems though that growers are more educated and appreciate the need for an appropriate margin.
Major problems in potato industry is getting paid and getting a decent price. It is not growing them. We need better marketing.
Market Trust rules changed from July 1. The pressure is coming on the grower rather than the focusing on the supermarket end and merchants. The legislation is aiming for payment within 14 days. Over the years terms of trade have been extended out which is a concern. This situation has been allowed to happen by a weak Department of Agriculture.
Most growers around Sydney are market gardeners, 10 acres or less. One grower at Cambden.
My concern is the marketing.
Need people to regulate quality.
Need to focus on niche marketing.
No market research.
Not an irrigation area. Our production is lower, but we do not have the disease problems. Typically 8-12 t/ac.
NSW farmers need to get organised.
NSW supplies 1/3 of its market, another 1/3 from Vic. And rest from Qld, SA, WA. NSW also supplies Victoria at certain times of the year.
One problem is the indemnity insurance. His insurance covers growers, but not him if he does not get paid from the merchant. Agents should have an insurance to cover them. The grower insurance.
Only getting one good year in six.
Outstanding money a concern.
People have been buying chemicals at the markets off trucks. As a result growers are not getting advice on use of chemicals.
People in supermarkets not aware enough.
Potato industry well organised at State and National level.
Processing factory – Frito Lay and Copper Kettle. Since Smiths closed and the rationalisation it has put a lot of pressure on small growers. As a result, a lot of growers have left industry unless they have a processing contract.
Sell direct to packer ½ t. bins, 50kg.
Some of the people have circumvented the system, such as the Dorrigo organic growers and Graeme Liney with alternative potatoes.
SPAC – Seed Potato Advisory Committee, Chaired through NSW Ag. Talk about expanding this group to include ware and processing. They are talking about calling themselves the Potato Industry Council. NSW
Supermarket asked for cadmium levels. Need a faster test.
The industry is cash driven, contracts are rare.
The terms of trade is an important issue.
Trend towards one stop shopping at supermarkets, small packers goods get repacked under big packing house bags.
Victoria looks after their farmers.
Victorian seed industry very secretive.

We are loosing chemical options. Eg. fumigation.
Where does AUF fit into the potato industry.
White fringed weevils are a significant problem.
Would like to have multi-sectional groups in each state representing the industry. Lot of confusion with function of different groups.

Appendix C: Comments from industry interviews – Queensland

Code of practice

About 50% handpicked.
An insidious disease is verticillium.
AVCARE provided a book on COP. Chemicals, transport, no issues with COP.
Bacterial wilt – spreads with soil, water
Blackleg – mainly seed
Boots are not realistic. Lot of people roving over properties.
Can the code of practice impact on trade.
Contract harvesting of beans and peas
Contract washing. Somewhere bacterial wilt came in. Recommend not to use wash seed.
No. 1 Crop rotations, No. 2 use of registered products (bac T. not registered for potatoes) – impacts on IPM program (Growers are aware of registered products?)
Truck washing down, Field officer use plastic boots.
Crisping field officer use plastic over boots,
Crops: Sweet corn, sorghum, sunflowers, soybeans, tomatoes, curcubits (pumpkins, rock melons etc.) maize, beans, peas, onions, carrots, beetroot, lettuce, cabbage, cauliflower, broccoli, celery. Potatoes could follow any one of those. Generally try to have a high carbon crop such as sorghum, also lucerne.
Did limited survey work for PCN. 10 farms. Had problems choosing the farms, the industry did not want to choose either. Survey was not done, person involved left.
In some parts of the season, cannot get certified seed.
Farmers are most interested in issues relevant to them. QA Project is ideal timing because prices are down. QA would have been not as well accepted if everything was going well.
Fusarium – environmental disposition.
Fusarium – Spores, dust
Good farm management guidelines – Chris Lindsay, Environmental Guidelines, QFVG, HRDC funded 2 year project.
Growers find it difficult to keep machinery clean. Awareness of hygiene is quite high. Agronomists without gumboots would be questioned as to why.
Happy with certified seed. Realistic with what can be achieved.
If everybody following same path and it is better for consumers, then it will be better for him.
In some industries, very conscious of the hygiene issues. Pathogen can take several years to build up. Soil erosion and natural movement of soil and spores.
Key issue is the competition between growers. (In reference to use of hygiene practices.)
Lot of the local Agribusiness do not worry about farm hygiene.
Need better hygiene.
No code of practice. Use farm hygiene practices. Learnt through word of mouth. AVCARE and AGSAFE probably have some information. Not aware of information on farm hygiene. – Service industry
No contracting of harvesting or cutting for potatoes
No contractors in the Lockyer for harvesting. In the Lockyer the investment is so large for the size of the farms. Have potential to probably harvest 12 months a year.
No documentation on farm hygiene. Possibly some agnotes.
No existing farm hygiene COP in area.
No promotion of rules from seed industry. A lot of people work through agents and therefore do not have direct contact with seed groups.
One grower has grown for sixteen years potatoes in the same paddock. Possibly it was the very hot, wet summer conditions that allowed this. Surveying of PCN probably was not carried out in Queensland because they were afraid they might find it.
Other crops in Lockyer - watermelons, rock melons, sweet corn, beetroot, onions, lucerne, brassicas (cabbage, cauliflower, broccoli, brussel sprouts)
Physiological age is a concern with the disease.
Potato seed a problem.
Potato self sowns not a problem
Powdery and common scab not a common. Redland Bay once worst, but this area going out of production.
Major diseases - verticillium, leaf roll virus, purple top wilt, Sclerotinia (new fungicide, Rovoral, does good job).
Practice of growing certified seed and then keeping smalls for next crop.
Problem of being aware of people coming (in regard to hygiene).
Problem of cross contamination of insects from end of summer crop to winter-spring crop. Also cross infection from crops such as tomatoes.
Pushing shit up hill. If there is something in it for growers and it is not difficult to implement.
QA is good if it is workable. Smiths has simple system. If you do not do the right thing, you are out.

Rhizoctonia – Sclerotinia no spores
Rotating an issue up here
Rotation and land management are key issues. Neither have had a lot of experience with potatoes. Buy certified seed for virus control and some disease control. Powdery Scab, rhizoctonia, blackleg, verticillium problem big in Lockyer Valley. Previously involved with cotton where farm hygiene is a big issue. In one instance at a field day, buses came through, some got bogged. They would have moved diseases.
Sclerotinia worst one, rhizoctonia, some blackleg, leaf roll virus, target spot (major one), Sebago leaf curl disorder (not known whether it breakdown or what)
Seed is biggest problem with regards to root diseases.
Seed protocols are reasonable. Would like to see some of the complainers do better. Happy with seed.
Size of farms in Lockyer not very big and not a lot of opportunity for long rotations.
Soil borne diseases of concern – fusarium, verticillium and rhizoctonia.
Soil borne diseases are less of an issue with certified seed. Many of the diseases we already have.
Soil borne diseases are one of our biggest problems.
Some growers have looked at fumigation. Lot of problems.
The concept of hiring plastic bins sounds responsible.
Thinks that the seed may be too young physiologically. High-risk operations – hand pickers roving paddock to paddock.
Use certified seed each year. A lot of the soil borne disease do not do well up here. See very little scab. Don't get silver scurf. Some rhizoctonia, bacterial wilt could be a problem. Sclerotinia major problem. Bad in peanuts. Expensive to control. Biggest problem target spot. Do not get Irish or late blight. Farm Hygiene is reasonably good. Because only can grow potatoes in winter, many of the propagules do not survive the hot wet summer. Rare to see self-sown potatoes, they do not survive hot wet summer.
Vendor Assurance Program – requirements (COP) written down and very clear.
Very little done on farm hygiene. Most have own equipment. Little movement of equipment.
Victorian Seed growers need to send new bins and bags for certified seed (not essential, but important).
Wall chart of potato diseases would be very good.
With floods there is a natural movement of soil.

Research

A lot of work for small projects (e.g. $50,000) no relationship between size of project and money asked for. - Researcher
Are the research boffins talking to the Woolworths etc.
Concerned about 10% cost of administering projects by HRDC as well having to pay for reports.
Get HRDC reports and have no problems with contacting researchers.
Growers do not have enough input into APIC funding.
Happy with 5 year plan approach.
Happy with Australian research projects and gaining information about them. - Processor
HRDC applications a nightmare. Lot of figures are rubbery. - Researcher
HRDC Booklet – Need more of a précis about projects.
Industry now has a major role in directing research funding and direction.
Lot of researchers take TT for granted. TT needs to be budgeted for and planned.
Need better access to research.
Pelletised rapeseed by product has been tested and does have some effect.
Projects submitted to department, then QFVG and then HRDC, Enormous time waster.
Research report – summary 3-5 pages for growers free and charge for more detailed report.
Since HRDC have taken over, the quality of output has improved
Value of levy to growers is an issue. - Researcher
Would like to get involved in more variety evaluation for markets in Asia.

Networking and communication

90% of extension done by Agribusiness.
A Lot of information, but a lot does not apply here.
A lot of the growers do not read well and respond better on trips etc.
A problem with the information is the form that it is in. Growers have to be accepting of the information. Girl at university looked at this problem.
Agribusiness work independent of research station especially after loss of Extension Officer. They are not afraid to come and see us when Extension Officer maintained good network. Steve is currently re-establishing. Good links in Lockyer, but not sure other smaller areas.
Agribusiness would see most growers.
Avoid duplication through this project.
Best way to communicate with growers in small groups.

Can be hard for chemical resellers to hold qualified people.
Can obtain information through IAMA.
Can't get good disease information.
Consultants playing an integral part of development and working with us. Need more consultants, only really have 1.5 people. Agribusiness providing good service. Doing some crop monitoring, a lot of crop inspections.
Contact with seed people. Have had difficulty with maintaining networks. No problems with dealing with different areas. No problems with processors. Involved with Crisping group.
Co-op here well attended meetings
Cotton industry magazine very good.
Could do with more crop monitoring, but difficult to get people to do it.
Could do with more information on disease and pest cycles. Major need for retailers and growers.
Crisping growers refer back to field officers and don't rely solely on Agribusiness recommendations.
Difficulty in communicating with fringe groups involved in marketing.
Do a lot of work with IPM. Co-ordinating sprays – work a lot with reps. - Agronomist
Do not believe I will have problem with growers just though they are involved.
Do not get Good fruit and vegetables. Use to get infornation from Hilda Harvesting.
Do not have problem with current system.
Do not hear much about what is happening. Want to be more on the forefront.
Do not know where to start looking for a lot of information. – Service industry
Do not use any USA info.
Do not use much interstate or overseas information.
Do not use overseas information
Does not regard himself as being deficient in information, but is open on the issue.
Don't see much extension material from other areas.
DPI do not have a lot to offer crisping industry.
Everyone is out to look after themselves. Lot of Dutch auctions, back stabbing.
Major sources of information, except for people, are Peelings and Potato Australia.
Get a lot of information from reps.
Gets Peelings.
Good relationship with DPI.
Growers in between two major growing districts do not have a lot of support.
Happy to receive more potato information.
Hard to get growers to read or attend meetings.
Has reasonable relationships. Difficulty is mainly with knowing who is working there, especially internationally.
Have not been aware of seed growers guide.
Have reasonable overseas contacts, but losing them, especially PNG. Need to work more on international contacts. Want to meet any visiting scientists etc. – Extension Officer
Huge lack of communication between the seller and grower (e.g. Woollies). Need for improvement. Woollies making decisions on what they think consumers want. Do consumers know what they want. Merchants a problem within the communication process.
In extension the biggest number of problems related to seed. Sometimes problem with certified seed, sometimes with farmer.
Industry leaders need to work on developing research vision based on a pro-active vision rather than a reactive vision. - Grower
Information is hard to get.
Information seeker, not a problem.
Issues: Communication issue the major one, Need to continually feedback information about what is happening in the industry.
It would be good to get an understanding of AUSVEG and APIC. Do not know about Potato Conference. The AUSVEG Conference did not work.
John Kilpatrick very good when he was in DPI. Mike Hughes only recent. Use Peter Trevorrow.
Lack of marketing information. Do not know what the market needs.
Lapdog, Topcat Groups. (2 groups, 12 groups total).
Literacy not so much a problem among farmers. Some problems but not sure of how extensive. More an issue of poor readers.
Local Librarian very good.
Local person interprets crop tests through Incitec. Provide advisory/consulting service to the farmer on growing the crop. All four field staff provides potato advice.
Looking at possibility of taking a group overseas.
Looks at Awareness and Adaptation phase. Not sure how good the links are between Gatton and Atherton.
Lot of growers frightened of change and seeking information. A lot of very intelligent growers though.
Lot of industries interested in IDOs
Lot of the potato information from local DPI. 60-70% of growers want to know anything new.

Many knowledgeable people coming into agribusiness and have taken over chemical. DPI tended to focus on the big picture.
Mareeba DPI library was always very good.
Meetings people attend - those desperate for information, those with a gripe.
Most farmers reactive not pro-active. - Grower
Most important issues in potatoes are the chemicals and disease.
Most questions asked are about what to spray this pest with. Most information simple.
Need more information on soil bacteria additions to the soil.
Need for more information about consumers.
Need to know more about what APIC/AUSVEG is on about. A lot of farmers do not read what they receive.
Yearly update is the most for research.
Need to know what to clean down tractors with.
Need to know whether the information is relevant because our game is selling.
Network interstate – not used much mainly through DPI.
Networking developing especially with seed growers in Crookwell and Victoria.
Networks outsider nappies are weakening.
No proper consultants.
No technology transfer, market research.
Not a lot of resources in DPI
Not many of the growers get Good fruit and vegetables. Lot of growers do not believe they have time to read.
Not much information on old products. Good info on new products.
Not much market information.
One of the major unknowns is the lack of data on marketing. Lack of knowledge of what happens.
One problem is that in the northern areas potato growers are spread out and poorly serviced.
Onion group has a good magazine
Other technologies are leap frogging potato growers.
Potato growers do not read much (but do not get much). Watch videos, spoilt by servicing from agribusiness and DPI.
Potato information is an important tool for processors.
Previously each year would take groups down to look at seed (7-8 day trip) Crookwell, Toolangi, Beech Forrest
Queensland Crisping Potato Growers Group a very successful group. They pay a levy. Have own current levy. Goes towards research and extension. Group buying of fertiliser.
Reasonably good network of research. Need the conference.
Relationship with industry – Good relationships with Agribusiness. Good relationship with consultants.
Resource people do not know any more than the farmers.
Sandra Lanz has helped growers to work together in Robertson.
Seed quality issues important.
Should have one packing house, but too much jealousy between growers. Could justify have a field officer in the field advising growers.
Smiths very good with information.
Some agents not paying on time and growers are afraid not to support them in case they go out of business.
Growers do not feel that they have a choice. Growers are very independent. Feel that sharing information is to their own detriment.
Some bad examples of Agribusinesses providing poor advice in the last couple of months.
Talk a lot with DPI. Extremely helpful. Source a lot of information through chemical companies such as Bayer and Nufarm.
The Agribusiness people are out there in a day to day role and they need the support information.
The Agrilink marvel very comprehensive.
The camaraderie from previous conferences is being lost due to the loss of the conference.
To improve co-operation is a major need.
Too many agribusiness people for too small a pie.
TOPCAT and LAPDOG. Both groups doing very well.
Use suppliers and local DPI.
Used to get - Badger Spectator – Wisconsin, American Potato Grower
Uses Mike Hughes for information and Peter Trevorrow.
Variety information would be useful.
Very concentrated (Tablelands) and not difficult to service.
Very good relationship with DPI (Tablelands).
Very individual, do not talk a lot to each other. Lot of northern and southern Italians who will not have anything to do with each other.
Very over serviced area (Tablelands) from a merchandising point of view. Lot of people out in paddocks.
Growers use phone a lot. Very poor records. Rely lot on Agribusiness.
When the growers join the crisping group, it is a culture change to share information.

Where do we look for information on the potato industry. Is USA really where we coming from. USA too big; are we closer to Europe. Why aren't we bringing in more European varieties. Lot to offer by looking to Europe more.
Work well with heavy produce committee. They provide a lot of feedback. - Researcher
Not a lot of information on handling. Supermarkets do not like bags.
Difficulty in obtaining information relevant to the area.
In NSW mainly, Stephen Wade and most others are spread across a range of crops. - Processor

Internet and directory

50% of crisping would have computers. Only about 3 out of 25 would use them.
Cannot think of many people using the Internet.
CDROM could be got. Prefer CDROM to Internet. Access to Internet in a private company could be a problem.
Do not have email.
Do not use internet much. Lack skills. Need information on how to get in. Wants to use it, not spending a lot of time to learn. Programs need to be simple and easy to use. Have provided answers on email discussion groups.
Do use email.
Expect very few farmers would be using a computer, probably < 5%. Probably lot higher percentage have them but used for education. A lot of older farmers.
Have computer and modem. See Internet as the way of the future.
Have computer. Believes they will have internet in year. Internet option would be the ultimate.
Internet would be good on what type of research is going on what has been done.
Most growers are computer literate. Many cannot read soil tests.
Need to look at computer systems that can be adopted for potatoes. Quicken is being used.
Not hooked into internet, but would like to be in it.
Not many have computers.
Not sure on Potato Australia. Steve Harper dropped in last copy. Good reading. Lot of information we know and don't know about. Thinks a lot of growers are missing out. - Consultant
On computers, do not run email, some of the others will send cards. – Service industry
Probably would consider using a computer if there was something worthwhile to use.
Use computer for cashbook, wages, word processing.
Very interested in CDROM, not so much Internet. A CDROM update every year would be terrific.
Very interested in the internet database.
Would support internet site.
Wouldn't get hung up on computer based communications.

Newsletter and Potato Australia

85-90 would read Potato Australia. Would find newsletters handy.
Difficult to pick up the more isolated growers.
Do get Potato Australia x4
Do get potato Australia. (Thinks so -)
Do not get potato Australia. - Researcher
Does not get Potato Australia. Send up.
For Potato Australia more information needed for North Queensland.
Have received Potato Australia. Need Potato Queensland. Not much Qld content. Problems down south not the same.
Interested in information from South Africa and other like areas.
Linked more to state levy but is probably confused with national levy.
Need for some editing, but generally OK.
Need greater regimentation of information so I can focus on relevant information.
Need regular checking of the distribution list. Agribusiness would know of the growers and could put together a comprehensive list.
Need to indicate in newsletter where to contact if not on mailing list.
Not happy with distribution of Potato Australia.
Not looking for other information products, happy with Potato Australia.
Potato Australia: Reasonable publication
People not knowing what is happening with the levies.
Potato advertising in Queensland not very good.
Potato Australia – not sure if get, maybe in library.
Potato Australia is slowly coming of age in content. Doing the job.
Potato Australia is the first thing we have got on Potatoes. Nothing as far as other information.
Potato Australia. Does not think farmers are getting Potato Australia. It should be sent directly. - Consultant
Received Potato Australia the other day. Have not had it prior to this year.

Send Potato Australia.
Showing Agribusiness distribution list may be a problem.
The way the articles are set up in Potato Australia is very good so happy with information.
Thinks Potato Australia is an excellent publication.
Thinks he gets Potato Australia.
Trial information in Potato Australia is hard to understand.
Use to go looking for information. Used Potato Abstracts. Major two coming into area was Potato Australia and Peelings.
Want to see more R & D on such things as the brown fleck (physiological – QDPI investigating). New varieties not much of a concern. - Grower
Were not originally on mailing list for Potato Australia. Had to ring up several times to get on. Conferences are important.
Would like to see more information from supermarkets and other parts of the marketing chain. Need some of the customer data out of them. They should be part of the newsletter.
Would like yearly updates. Main concern is that have to wait three years. If something important is found in first 12 months, then industry should be made aware of this. If something is finished early, it needs to come out quicker. The Final Report is very slow in coming out. If projects finish in June, very few reports come out by December. The system needs to be more regimented. The reports are not very suitable for growers. Needs to be another form of the Final Report for growers summarised in Potato Australia. Reports for growers need to have recommendations up front. Most of the growers would not know of the Final Reports.
Yearly state roundup very good.

Grower Management

1 in 4 or greater rotations.
All other crops except maize are legume crops that carry over diseases.
Aphids seasonal.
Bloom issue is a real furphy
Costs are another issue the farmers do not consider enough.
Disease pressures very high due to tropical conditions.
Even spraying for target spot can result in crops dying off. Lot of farmers aware of good rotation programs.
Farmers have become well aware of rotations. Mulch sorghum. Sclerotinia causes problem after peanuts.
Peanuts very good host for sclerotinia. Other problem is slimy stalk which causes stem to fall over then Erwinia sets in and stem end rot. This expresses itself at the market end. Not obvious at this end.
Farmers use what is necessary and hope that a profit will result
Fertiliser – 1t/ha banded.
Fertiliser influence on soil borne diseases. Too much nitrogen can increase Erwinia.
Growers grow – maize, grass, peanuts, cane and others.
Growers are looking more at what they have as far as pests before spraying.
Growers do not realise how quickly some bugs can go through cycle. Spray on 7 day cycle.
Hand picked potatoes – not enough quality control.
Key issue is making money and marketing is the top one. Part of that is being paid. The first leap forward is the QA project. If you chart change, this will not change. Industry needs to be pro-active.
Lot of reliance on the one good year in five mentality. Recipe for disaster. Not enough people aware of their costs and returns.
Main crops planted in June and harvested in December.
Main crops potatoes and onions. Bit of lucerne and corn.
Major issue is quality – Lockyer Valley has poor name with quality. Lot of poor quality potatoes going out of the area.
Most sorghum, plough into ground Feb, plant June potato crop.
Mostly sclerotinia major.
Nutrition not a major problem due to the highly fertile soils. – Lockyer researcher
Only some of the areas on farms are suitable for potatoes.
Potatoes more an opportunity crop.
Pressure from banks can move growers away from improved practices.
Problems with Pythium. Post harvest problem. Potatoes were bruised and made them susceptible. It is a common soil inhabitant. Pythium you can't get in the field as opposed to pink rot.
Pythium a major issue. Major problems are target spot, sclerotinia Black leg and … ?
Pythium, Sclerotinia Erwinia becoming more of a problem. Target spot biggest problem.
Rotation 1 in 5 (does get down to 1 in 3).
Sclerotinia a problem. Not many products suitable for tank dipping.
Soft rot breakdowns (Erwinia) – always present. Cultural conditions dictate whether a problem occurs.
Some chemicals will not be released up here due to litigation problems. More sophisticated chemicals that are difficult to use are considered a high risk for release.

Some have potatoes two crops in one year.
Sorghum, maize and lucerne tend to provide good soil structure.
Spray interval. Spuds growing very quickly.
The lack of seed options is a big problem.
Use sorghum in rotation to even soil moisture.
Very diverse and intensive area. Lot of hosts.
Very intensive spray program.
Weeds in potato not necessarily a concern as they are used to dry out soil prior to harvest.
Would like to offer more crop services, but the retail price cannot support the service. – Service industry

Miscellaneous

10% of production around Brisbane
50% potatoes grown in Lockyer Valley for Queensland.
80% fresh, 20% Crisping.
A lot of money is owed to growers.
Age of farmers fairly old.
Area very bad for litigation. No off label or off cuff recommendations.
Believe there are things in production and marketing can be done to make it more viable.
Biofumigation also controls certain diseases. Need better understanding of what it controls.
Can see grower groups employing a person to facilitate the process so that can deal directly with supermarkets. Through this the person would organise a price for the next few weeks. If the price goes up the growers wear the loss, if it goes down, the supermarket wears the loss.
Can't hold spuds in this country for more than a week.
Chemical prices have gone through the roof.
Co-operative handles most of the potatoes.
Court case in Atherton has caused a lot of problems. The grower with good spray records had no difficulty claiming, the ones that didn't are still fighting. Lot of farmers do not keep good records.
Diseases can impact on resale value.
Diseases knock a lot of varieties.
DPI still provide a free diagnostic service.
Farmers are independent to the point of being foolish
Farmers need to document what they do. Maybe they put in pocket book which may lead it on to review.
Future in supermarket chains. Grade waste here to reduce rejection rates in Sydney/Brisbane.
Gatton 60%, Brisbane 10%, Downs 15%, Atherton 15-20% plus scattered down the coast.
Getting earlier Certified Seed from Victoria.
Gourmet group growing specialised potatoes for Sydney restaurant market.
Growers do not check out agents properly. All believe agents are ripping them off. It is accepted within the industry.
Growers do not market potatoes, they sell them.
Have seen seed pieces breakdown while others okay with the same lot or different lots sown on the same day.
If anything that needs improving is QA in packing sheds.
If the growers are not progressive, they do not last long with the company.
In breeding program, does not seem to be a lot of pathology input.
In the future, would like to be a group facilitator, focuses on productivity and marketing.
Insects more variable.
Irrigation management is really woeful.
ISO9002 requires too much monitoring which I am not willing to do. Too time consuming. (Time commitment an issue for COP)
Land value very high $2,000-8,000 acre.
Large Italian component which can become factionalised
Lockyer valley has a bad name for potatoes – not sure why.
Lot of problems with co-operative with handling. Only first season of operation. Most fresh market.
Lot of problems with seed last year with dry rot.
Lot of substitution – lot of people do not care.
Lot of tradition in the area and probably what is needed is a lot of new blood. – Lockyer grower
Mainly spuds autumn and spring. Grow onions, grow a lot of sweet corn and sweet peas. Pack onions and spuds. – Lockyer grower
Major issues: Need to be more grading, too much emphasis on handpickers, good growers are being affected by the bad growers, harvesting the spring crop can be a problem with skinning and narrow period of perceived opportunity especially with spring crop. Not so much a problem with early crop because potatoes can be left in the ground during colder winter.
Major use of southern areas is seed.
Marketers can stop development.

Marketing chain is one of main things holding the industry back.
Marketing is a big problem.
Need an increase in price because we are going backward.
Need for packing methods.
Need to educate consumers about potatoes. Too much emphasis on looks.
Need to get industry back to the stage of being paid in 28 days.
Networks are important. Very much supports groups. Do not have to grow big. Ethnic divisions creates division. No effective grower organisations. On paper, but not active.
Not getting a lot out of variety trials.
Not getting paid for quality.
Not sure if getting economic.
On farm issues are important, but come back to streamlining.
Other areas – Florida, Zimbabwe, Nothing quite like Atherton.
People at market need education as well. Agents need education.
Potato industry in doldrums and declining. People moving out due to price, Crisping client fairly happy.
Potatoes very high value crop in Tablelands.
Premium for red soil potato.
Problems – Suitable receptacle to send potatoes – 1 tonne bag doesn't breath too well.
Promotional levy – when do you promote, given different areas grow spuds at different times.
QFVG not well thought of.
Quality problems a major issue after it leaves the farm.
Red soils hungry for nutrients – Lime, phosphorous, nitrogen.
Rennie is major competitor. He is expanding harvest period which will impact on Atherton.
Sebago still the best variety.
Sebago, Atlantic (Pontiacs grow well but not a good market)
Seed handling a big issue – Transport time, wrong physiology, maturity (is there a list), how should it be shared.
Seed scheme in Victoria was set up mostly for virus and not so much for fungal and bacterial.
Send questionnaire around each year and provide specific indications of what needs to be done. If they do not change, then they do not continue with the company.
Should put promotion on backburner until we get the product right. Focus on getting product right first. - Grower
Some leased land.
Southern areas have greater success with varieties.
Spray every 7 days for life of crop.
Stats are not very accurate.
Target spot a problem. Can never get potato plant to survive to 20 weeks. 15 weeks going well. Potatoes bulk up quicker up here.
Target spot main one. Rarely get Late Blight. Certification Program set up to control leaf roll virus and other aphid-transmitted groups. Southern diseases such as black dot are not a problem up here.
The adage that they farm the way their father did is rubbish.
The main advantage being the red soil potatoes.
Thinks the Rockley markets will die and chains will pick up the work.
Too much variability in prices. Understanding what the market is doing, what is the farmer's role. Export – need people with nous with what to do and how to do it. Lack expertise in the marketing area and has resulted in too low prices. Maybe dealing with wrong companies. E.g. the exporter uses cheap shipping containers and quality is affected and growers wear the losses. Maybe not using Australia etc. Need more information. Not necessarily using people with the necessary expertise. Cultural expertise.
Water is a key issue. Not enough attention paid to this.
We are thin on pathology and entomology.
We have no bacteriology person in Australia.
Winlock took off but it was marketed as Sebago. When this was found out the market disappeared. Still opportunities. Has potential to yield extremely well.

Appendix D: Comments from industry interviews – South Australia

Code of practice

Always careful about travelling between paddocks.
Code needs to be consistent across the industry especially if there is a cost associated with it.
Concern about boxes going to packing sheds and returning with other peoples spuds. Need to have boxes washed. Need to do more to prevent transmission of disease from paddock to paddock.
Look at Mark Heaps work on Bacterial wilt. Now there is disinfecting between properties. Many growers own more than one parcel of land.
COP great. The major issue up here is irrigation. Lot of root diseases as a result of poor irrigation.
COP inevitable. Part of QA and a stepping stone to more integrated management.
COP needs to be relevant to growers.
COP needs to be written in a way that ordinary farmers can understand.
Strategy drawn up for Bacterial wilt. Need to look at this.
Shed cleaned once a year. Some growers very particular, washdown, etc.., With bins going to many sheds it creates problems. People visit sheds, how do you deal with this. Other growers do not care about hygiene.
Do boot washing for Pink Rot. (Raises the question of the codes focus. Other diseases of greater importance to individuals may provide a greater incentive to adopt hygiene strategies.)
Do need to focus more on hygiene.
Do not have truck washers. People do wash trucks for aesthetics. Waste soil that comes off trucks gets carted to a rubbish tip. By products (ie. have gone through steam peeler - kills most things 170-200C for 6-11 secs, not even PCN cysts can live through it) goes for stockfeed such as dairies, feedlots and beef producers. Waste from runoff goes into waste treatment where sludge is removed and liquid goes into holding lagoon. This is then used on pastures. Heavily monitored. Two lagoons. Most water after steam cleaner. Other runoff ends up in a wetland which will have no potatoes near it.
Encouraging seed cutters to clean down is important but it is difficult.
Farm hygiene has not been an issue in the past and probably needs greater consideration (except for bacterial wilt).
For a COP it needs to work through SCARM.
Happy that it is likely to include a range of diseases.
Have a code of practice for shearing. Some of the points very good.
Have adopted hygiene practices.
Hygiene procedure developed by PISA and sent out to all Assoc. members (eg. machinery cleandown and box washing).
It would be a good idea if the border restrictions could be eased.
Look at Phylloxera.
Need COP hung up in a farm shed as a reminder.
No work in hygiene area except for stating that it is a major issue for staff between properties. – Service provider
Not using a COP.
Not willing to discuss aspects of his hygiene as these form part of his commercial advantage.
Our COP does not need to be as rigid as for seed producing areas.
PCN and bacterial wilt an issue with WA. Minister for Ag in doubtful seat and cannot afford to rock the boat.
PCN restrictions impacted on floor price.
Positive to COP
Processing Field Officers reduce risk to minimise transmission of disease by reducing movement of vehicles and cleaning boots, particularly from diseased paddocks.
QA is an important issue but a minefield at this stage.
QA more important for packers.
Rotations should protect area.
SA regulations ridiculous with regards to PCN. For people on the border areas it is ridiculous. Some of the regulations have done more harm to the industry than good.
Seed is a major issue.
Soil Board district plans include soil borne disease information. Includes a section for potato growers.
Some potatoes, by one farmer were grown in SA, stored in Victoria and had to be tested before coming back to the factory.
Some real concerns about quality of seed from Victorian scheme. Farmers feel vulnerable given the expansion goals.
Wall chart of diseases and defects would be good (as per USDA one).
With a code of practice there are great difficulties between states.

Research

A lot of good work is being done. - Researcher
Availability of research to everyone is an issue.
Biggest problem with R&D is that researchers have come from the traditional SARDI/PISA background. Need to have research integrated with user groups. Need for consultative committees to work between the breeder, PISA, SARDI and processors.
Can easily repeat work under current system.
Concerned about interstate transport of seed from a disease perspective. Major disease is pink rot. R&D has finally started on this. Pink rot is less known further north.
Difficult to get progress information from projects to promote prior to its completion.
Growers do not want field days on their properties due to the problem of diseases being spread.
Handling of potatoes has big implications on how the potatoes are treated. Breeding for quality alone without any consideration for storage considerations and other market chain issues is a problem.
HRDC will not be funding researchers if there have outstanding final reports.
Is there any good research to back up trace element use?
Lack of promotional material from the variety program.
Lack of willingness to sell research. If it is not being sold why are we doing it.
Lot of research done on many of the diseases. The problem is getting access to it. Does not want duplication.
Problem with interstate duplication in the past.
Lot of work is linked back to the USA. Information should not be restricted to Australia in the research area.
Maybe need demo/variety on research land.
Need greater onsite demonstration/research involving more people and larger plots.
Need greater value from R&D.
Need research results as soon as possible. Likes the internet approach.
No information comes out on technitubers. (Raises the issue of VC projects, confidentiality and what it means for industry.)
One of the main needs in the area is a pathologist.
Pink rot is an issue in SE SA and probably elsewhere and it took too long for research to start. Does not know whether powdery scab will get funding.
Pink soft rot work done in Tasmania but have not seen a decent report.
Pretty happy with R&D effort. Have had a lot of research on the property over the years. Have sorted out a lot of issues with breeding with PISA. Would like more work on Pink Rot.
Quite often do not know what is happening with R&D. Not always informed about what is happening.
R&D good quality. Just not enough being done. Not happy with some projects being cut short such as Rhizoctonia.
R&D valued by growers. For those following the R&D they are adopting what is required. Most interest from French fry sector. It serves them very well because of the backup from the processors. The situation with fresh is very different. The wide range of varieties creates problems. Fresh growers look for R&D on diseases, fertility and soil techniques. Variety trials are interesting but less of a concern. Growers are driven by the market as to what to grow.
Research can be adopted before it is written up.
Research problems - knowing it is going on and gaining access to it. Can follow results okay.
Some of the breeding work is a bit questionable.
The approach of bringing people together is a good compromise. We do not have the breadth of expertise.
The marketing and financial side has been under funded.
Timing of R&D planning meeting a critical issue. Preferable time for meetings is in July.
Variety information comes out in the variety book for extension but only Potato Australia for growers.
Variety trials do not get extended enough.
Variety trials for fresh market potatoes are not always made public.

Networking and communication

APIC seems very quiet. It was suppose to be the industry voice.
At soils conference nothing from potatoes.
Concerned with seed quality.
Conference in Adelaide was a waste of time in 1994.
Conferences great disseminators of information.
CSIRO have done excellent work in biofumigation. (Mustard work) This sort of information needs to get out to growers.
CSIRO very good. Look for opportunities to use people at dept.
Data from service industry different than that from state departments.
Developing checklists for addressing issues. Setting up groups in Victoria and SA. Each group has a local support person. Very focused on cost benefit.
Difficulty in obtaining marketing information. Need marketing information that makes sense to the grower.

Distance is a problem with meetings in Adelaide. Take out a lot of time to drive.
Do I have information on packers and processors?
Do not get a lot through service industry.
Do not subscribe to USA publications. Has visited Idaho.
Does more scanning than reading. Not the best reader.
Don't deal with PISA a lot. No complaints. Doing some trials with PISA.
Don't use service industry or consultants.
Each state has tended to go their own way.
Even with problems worth persevering with library system.
Export stats and other stats very inaccurate.
Get Good Fruit and Veg. Do not get a lot of time to read.
Get the Grower
Gets Potato Growers of Idaho, The Grower, Fresh fruit and vegetables and two others from USA.
Good fruit and vegetables has the best reporting. Read Potato Journal of America. Get very few others.
Good to know about current work but also who knows about other issues. How to tap past work.
Happy with information from state sources, if need to know more then goes looking. No international magazines.
Has Potato Health Management and has ordered the IPM book from APS.
Has videos from Idaho on trucking, harvesters, bruise damage and dipping.
Have difficulty in maintaining networks with changes.
Have not seen cadmium leaflet.
Have regular correspondence with growers - can distribute information. - Processor
HRDC booklet good instore publication but prefer more technical work. Prefer to work off original research papers.
In South Australia the South-East gets left out state politics because of the distance. (An issue in many areas on the mainland.)
Information generally good
Information is readily available from individuals but not from organisations.
Information needs to be constantly updated, affordable and produced in a range of different ways.
Information sources - Information from local association valued.
Information sources - read journals, buy books
Information such as on varieties is not communicated. Price variability means that a market edge is very important for fresh growers. Competition between growers impacts on farmers working together.
Information such as yields, premiums, etc is confidential.
Interested in market trends.
Is currently looking at getting many of the potato growing magazines in and having them as a resource for consultants, etc. - Government
It would be beneficial to have centres with good resources that can be available to the industry.
Lack of information coming out of APIC. Lack of grower involvement in decision making process.
Lines of communication quite thin.
Lot of difference between American and Australian fresh Market.
Lot of extension is now consultancy based since the potato growing areas have moved into the Mallee.
Machinery reps come around once a year. This is adequate for keeping up with new technology.
Main information from PISA, processors and other growers.
Main information sources - Potato Australia, Spudspeak, Farm Journal, Weekly Times, Stock Journal, Good fruit and vegetables, The grower and networking with other growers.
Main interest is agronomic information.
Many problems such as bruising are not appreciated because the growers and packers are too close to the problem.
Market driven system - supply and demand. - Packer perspective
Need for better communication between growers.
Need more consultants servicing the area and good networks with these.
Need the simple indicator tools for onsite demos.
Need time savers in information collection area.
Need to keep marketing and research separate.
No international information.
None evaluating equipment
Normally would join an association to get books and attend meetings.
Not a lot of contact with PISA. Main source of information are local suppliers.
Not enough IPM, pest monitoring and threshold management work.
Not enough new technology being introduced through consultants and resellers due to pressure of work.
Not finding a lot of information that is new. Doing a lot of his own trial work.
Not sure what has been happening about conferences. Do not find out directly about conferences.
Occasionally visit overseas.

Our success is related to our ability to source information.
PISA has had a narrow focus, not a lot on machinery.
PMA group in America teaches handling through the marketing chain. We do not have anything like it here.
Scientific elitism in science two thirds of the problem with respect to research being effectively used.
Sense of distrust between growers and service industry because of commercial orientation.
Service industry have 12 monthly agronomic meetings.
Some chemical company representatives very good with potatoes. Use company reps, PISA for herbicides or ring companies. Use other service industry people a lot.
Some contact with other states. Need to develop this further.
Some of the best practice information could be done on video.
Sources of information - past network in PISA and related groups and people in Tasmania from previous trips.
Building up relationship with Victorian Groups. Mainly phone contact.
Talk to PISA, field officers, etc - word of mouth.
The articles that come out should recognise the initial work technical article.
The main needs are communication aids and information database.
The more information the better.
There is a lot of work already done in the USA.
Two crops a year. Not a lot of time to get together.
Ulverstone conference was very good.
USA work leaves anything done in Australia for dead. This is done through the American Potato Board(?).
Use a consultant for soil moisture. Not a lot of consultant options.
Use Merbein CSIRO library and do literature searches. Allocate a day a month to reading.
Use research service provided by service industry.
Use some international networks, use individuals in PISA, SE Potato Growers Assoc, key growers that are in the marketplace.
Uses good reference books as much as other Potato publications.
Uses Horticulture and Soil and Fertiliser Abstracts.
Visited California and looked at research.
When putting information out he would use his own network to determine outlets.
When seeking information talks to other specialists (ie ties to maintain network) in Australia and States. Email has made it easier.
With new developments there are new opportunities for group formation.
With potatoes there is no association.
Would like to get a group together.

Internet and directory

About 25-30% of the 42 growers in the South-East would have computers. Many of these would be used for business.
Buy Good fruit and vegetables when articles in it are relevant.
Can the international contacts be included with email addresses. Internet is here and now. Good to know more about overseas groups. Internet would be the way he would communicate with everyone. Email is a more effective communication medium for dealing with people.
Does not use computer but has one. Does not have internet.
For chemical and pests rely on companies that supply the chemicals.
Get a lot of tractor and machinery information.
Get Farm Journal.
Go to odd field day (eg. Gippsland)
Have a computer which is used for tax and wife's business.
Have computer, putting on internet.
Have mail through internet – Service industry
In the information directory database have different front end for growers and consultants.
Information needed - what work was done, what was being done and who was working on it.
Interested in getting a copy of the Information database.
Internet - ability to access depends on keenness of individuals.
Internet is a good idea.
Internet option is good given previous comments.
Internet option is good. The searchable database needs contact names.
Internet option sounds fine.
Internet option sounds great.
Internet search engine sounds great. Finds it difficult to get information out of some people so the internet option would be good.
Just starting to use the internet.
Largely looking for nutrition information.

Lot of traditional farmers. They are concerned about computers. Do not want to try new things. Risk adverse.
Major need is to be able to easily access information through the internet.
Make sure we access other research through AHC, DPIE (Canberra) and CSIROs. HRDC focuses on agronomy while DPIE is more on the business point of view.
Most farmers in the South East do not have computers. Many have just moved into faxes. Can see the benefits but there are barriers to adoption.
Need directory that subdivides it by practical units like post-harvest, pathology, etc..
Need to become better with computers which will become the medium from which information will come in the future.
Neutral on internet. (Searchable database) Likes the librarian approach at CSIRO. (Why change if you are getting a good service!)
No regular interstate contact.
PISA developing an electronic information service (Spudnet).
Positive to having a trade directory. Need information on what people do.
Positive to internet
Publications - Idaho Potato Grower, lot of fertiliser books.
Searchable database on the internet sounds good.
Service industry research would not be publicly available when there is a marketing edge. Older research okay.
Some do not have fax. This would be a better option.
Trade directory would be excellent.
Use of technology variable. Some are well geared up with computers, others not. A real problem with the adoption of packages.
Would like to see a computer network for growers.
Would like to see more information coming out.

Newsletter and Potato Australia

Any information sent out needs to be carefully analysed and editorialised.
Articles should not be too long or too technical.
Could APIC collate the research done on an annual list. Charge maybe $25 or so. This would enable people in companies to get the latest information.
Did not get the latest Potato Australia.
Difficult to get information generally.
Do not get Potato Australia (all but one).
Do not get Potato Australia.
Do not get Potato Australia. Read someone else's.
Does get Potato Australia (interesting reading), maybe.
Does not always get Potato Australia. Has not seen last Potato Australia or Cadmium leaflet. Has seen HRDC booklet.
Does not get Potato Australia.
Does not get Potato Australia. Never heard of it.
Growers have indicated at one meeting that they were not receiving Potato Australia.
Happy with Potato Australia.
He received Potato Australia but did not receive cadmium booklet or HRDC R&D summary.
Important to start at market end first and translate it back down the chain.
Information needs to be user friendly from researchers. Information up to date has been too complex.
Maybe a short crisp newsletter faxed out weekly is the answer.
National Bank faxes what happens to A$ every day free. Wouldn't it be good if the Potato Industry did this for the things such as latest trends in the market place.
Need calendar of events in Potato Australia.
Need newsletter once a week. Once a month not enough.
Newsletter - once a month would be better.
Newsletter idea good.
Not sure how good the distribution is.
Option - a 2-3 page summary sheet.
Potato Australia every six months and have it smaller. Smaller lots more frequently.
Potato Australia about the right size. Colour is good.
Potato Australia does not come direct but through regional manager.
Potato Australia has not been essential reading. If the information is essential then the problem will help address the issue.
Profarmer newsletter and fax put out by Kodinin is good - small, crisp and updated weekly. The mailed version arrives four days after the fax.
Receives nothing from the industry.

What needs to be taken in; production, seasonal trends against the norm, brief on market impact issues (quality variations), what is happening with the processors (protect us from benchmarking info)
Would be good to have a lot more information about what is happening (eg. Tasmania).

Grower Management

Aiming for premium article, therefore growing smaller areas.
Cannot grow two crops a year. No other major restriction except for climate.
Cannot grow whites in South East South Australia because of staining. Far too many varieties.
Centre pivots - more uniform water distribution, more gentle for soil and crop, can fertigate and less labour.
Centre pivots in years to come will be moving to variable water application which will allow for soil variation.
Crop management service not viable for small areas of fresh potatoes.
Crop management service quite popular.
Deterioration of seed quality very noticeable over the last two years.
Family business. Has blocks in various areas. Rents land. Lot of country prone to wind erosion & water repellence which is better suited to centre pivots. Pasture/potato mainly. On some of the leased land wheat, carrots and lucerne.
Few problems with clearing trees for centre pivots.
Growers do not want to be shown up for their lack of training.
Have used crop monitoring service - consultancy.
In the past there was frozen processing plants at Millicent and Mt Gambier but these have closed.
Industry in South East South Australia is starting to move into different soils including non-wetting sands.
Issues of concern for potato quality are transport, arrival times, handling and positioning.
Literacy impacts on information mechanisms.
Lot of diversity in farm operations but there is a need for the implications of integration of enterprises to be considered.
Lot of growers are not market focused. Those that are marketing are doing a lot better.
Lot of leased ground used. Might lease one year in seven. There is a lot of self-sown potatoes that effectively shorten the rotation.
Major problems in quality management.
Management skills are very varied. Literacy varies considerably. Low level of education. Younger ones are getting better qualified. Difficulty in handling concepts due to growing sophistication.
Many growers have a focus on the cheap options rather than the best option.
More potatoes will be grown on marginal country with current suggestions of expansion in the industry.
Most growers, even those new to the area, have a potato growing background. Some new ones, not many.
Most people have there own gear. Contract spraying increasing.
Need to minimise spray drift. Need a greater responsibility taken by pilots.
Not a lot of spraying needed.
Once Mallee gets a good red colour variety than South East South Australia in trouble for fresh.
Pivot sap testing service is being spread too thin and lacks quality feedback. Little information coming out of fertiliser company in the form of newsletters.
Prime lambs eat waste spuds.
Problems with some packing sheds.
Products are put under great stress at wholesale market. Too much product needs to be displayed.
Rotation 1 in 6. This country needs one in 6.
Rotations at least 1 in 4 or 1 in 5.
Rotations include broadacre crops - wheat, barley, oilseeds, millet, maize (mainly around Millicent). Rotations commonly potatoes/pasture.
Rotations up to 7 years (4 - 8 years), typically up to 6-7 years. (Yet the certified seed is on 4yr rotation!)
Salt a big issue and salty water use.
Seed a concern. Physiological age and root diseases particularly. Need for greater attention to seed quality and documentation.
Seed quality is a major problem. Needs a radical overhaul. All seed growers should have QA and be registered. Very few see seed before it goes into storage. Few people have time to visit sites where it is being grown. Real concern for all growers. Quality varies - colour diminished (fresh), size all over the place, silver scurf and rocks. Some certified seed has come across the border without tickets through agents. Do not really know if it is certified. Some lots may have tickets and others haven't. Lack of documentation. Some seed growers are very good.
Some compaction from movement of heavy machinery. Wet harvesting not a problem.
Some other vegetables such as Chinese cabbage, broccoli, some sudax for summer feed, kale (feed) and some silage made. Cropping not so common around Kalangadoo. Few onions around Yahl.
Spray contracting. Cartage contracting. Have done some contract harvesting but the logistics works against this.
Surprised at poor level of irrigation management.
The use of more efficient centre pivots is a problem because of legal restrictions on clearing.

Use to be three contractors. Now only one. There was a lot of problems.
Very concerned about water resources bill. Water licenses are a big issue for potato farmers. This will have impact on rented ground. At this stage mobile licenses are still an option.
Widespread use of centre pivots, some travelling irrigators.

Miscellaneous

Acts as more of an information seeker rather than a technical consultant.
Any damage multiplies post-harvest. Damage goods in a bag can cause rejection of the whole bag.
Cant get field inspection reports from seed producers.
Cost of equipment in Australia very high compared to the USA. Smallest grower 100 acres.
Current politics seems to be if seed growers have difficulties then they change the rules. Should be a more tiered system. For higher quality you pay more.
Everybody exaggerates yields.
Farm Management Journal article to look at Improving business management skills.
Farmers would be willing to test seed for diseases such as pink rot.
Growers are not honest with each other about what is happening.
Growers get uptight about actions of packers. Packers use product as a lever against other packers and other groups to gain market share. The result is lower prices to growers.
Growers he is involved with tend to be very entrepreneurial and younger.
Honesty of packing sheds is an issue.
Look at Citgroups.
Lot of problems with what is supplied not going through to user in the same packaging.
Major problems - Marketing and growing in hot environments.
Market Intelligence (- industry trends, where is the industry going and why)
Markets dictate whether quality is not good enough.
Most consultants in South East South Australia not on potatoes.
Most grower/packers know quality standards because market dictates.
Need more branding and marketing of potatoes.
Not aware of good educational programs on handling potatoes.
Opportunities for buying groups. (petrol, parts, chemicals)
Packing sheds need volume. So problem is with growers and packers.
Part of the problem with seed is that demand matches supply too closely. Before you can tighten standards need adequate supply.
Potato handling a big problem. Abrasion, impact, damage which can often be reduced by adjustments.
Price over the phone from packers is not the price received.
Pricing policy of processors tends to create a lot of internal competition.
Seed contains a lot of misshapen seed.
Seed for Coliban is in short supply and there are not a lot of options.
Seed not washed. Why not.
Seed quality is disgusting. There is not a minimum standard for rhizoctonia? (Not sure) The standard was abolished.
South East South Australia has high quality water and a lot of potential.
Supermarkets sell spuds green. Selling rubbish products as top quality.
Supermarkets selling third grade produce.
The demonstration on site creates the most impact.
The old South Australia board did not work well.
Unless the sellers improve quality it is not worth tackling. Sellers look for biggest margins, not interested in quality.
Uses SARDI, PISA, daughter, friends.
Why is there such a gap between what the wholesalers are getting and growers?
Wisdom (University of Wisconsin) : Program for field consultant, IPM, used by consultants, agents and growers, updated every year and major extension tool.

Appendix E: Comments from industry interviews - Tasmania

Code of practice

Lot easier to get consensus in processing industry. Seed would also likely to be easy.
Onion white rot more common than PCN - need for a holistic approach.
Unlikely to detect PCN in Tasmania due to rotations.
Hygiene - clean in and clean off (Good approach to explore.)
The economic impact of PCN was never established due to the difficulty of PCN being a contaminant for other industries.
Code of practice needs to pick up farm hygiene practices and fit in with company's expectations about residues.
Internal rules cannot be stricter than GATT rules for international trade.
A lot of movement between crops. (Need for holistic strategies.)
Machinery requirements are increasingly being met by contractors. (Movement of soil implications.)
A lot of contractors coordinated by factory. (Implications for code?)
Codes have already been developed for some groups. (What are the implications for a root disease code and its marketing?)
QA coming into factories, driven by pesticide residues.
Washdown areas for soil removal from machinery would be a problem on land being leased.
Lot of contract cartage. (Implications for the code!)
Machinery ring (Implications for hygiene!)
Economies of scale a major issue.
Cartage became more popular when prime movers came in. (Explore further, has implications for the code.)
Nearly too many codes of practice about - aerial spraying, effluent management, truck washing
It is going to be difficult to get people interested in a code of practice.
Need strong input from farming community.
Scottsdale area has more animals in the rotation. (Diversity of enterprise implications?)
Need greater emphasis on rotational control of diseases.
Need for standardisation of regulations in seed industry.
Need cheap disposable overboots for paddock visits.
Fresh market growers need their own harvesters (Why?)
Code of practice - Very concerned about sustainability and quality over the long term. Need the code.
Seed guidelines do not cover maintaining seed areas. (ie. movement of commercial growing areas into seed growing areas.)
Problem paddocks can be processed.
Would like areas set aside for seed production.
Important to maintain integrity of seed growing areas.
Fusarium a problem in last few years.
Should only bring material through tissue culture into Tasmania.
Grower suggestion (Code of practice): Only crop potatoes once in four years, No legal restrictions, as guidelines fine. Should be plans in place for outbreaks. People should be well informed of outbreaks so precautions can be taken. If a disease is crop threatening a code is okay, but not for day to day procedures, Needs to take into account the range of crops used. Do not want a multitude of codes and QA programs, In Atherton tea tree growers formed a co-operative which was QA tested. Use to have to shovel up dirt at processor and bring it home. Now you do not.
Contractors do not clean machinery off.
Should be a code of practice among contractors.
Very few farmers have proper washdown facilities.
Code of practice for white root rot in onions, reasonable support. Growers are still not picking it up properly. (Cross crop implications for code development?)
If we can focus on the contractors with the code first this will help to flow back to the growers.
Need to look across crops and enterprises when developing a code. For example a pea harvester can spread disease just as well as a potato harvester. Code needs to work across industries.
Rotations 1/4 (processing), 1/7 (seed) and variable in fresh.

Research

Commission university to do work - Processor
Do own field trials - Processor
Extension type people should manage applied research.
Focus on R&D in potato industry. - Consultant
Fund PhD students for particular projects - Processor
Happy with adoption of research to date. - Grower
In research, parochialism and competition a real problem.

Information coming out of research has to be useable.
Knowing what does not work in a research project is important. Failures are often not reported and yet are very important.
Lack of feedback to researchers.
Lack of new technology coming through. If there is, we do not know about it.
Lot of information is not digestible.
Need progress reports on research projects.
Not always the best people get to do the research.
Not hearing enough about the research work. - Grower
Opportunities for budgeting in extension component which could be carried out by a service provider such as Serve-Ag.
Potato Conference is very good. Good cross-section from industry.
Publications should be better designed. Important to have research results translated into meaningful information. - Grower
R&D projects need extension built in and active from the beginning.
Researchers need to have practical approach. Top American researchers are very practical. Ours are not in the running.
Should use a portion of the funds for extension/communication. - Grower
Standard of research in Australia not good. Lot of demonstration research but not a lot of basic research.
The extension part of the project is the most important component.
TIAR research planning process should work well.

Networking and communication

A lot of information coming out of Serve-Ag and McCains workshops. McCains works with people very well.
Not much coming out of DPIF. Farm Best practice was useful but goals not realistic.
Access to information interstate not so good although do have some good contacts.
Big believer in one to one extension.
Communication component of research project: What is meant by that. Thinks that it is done quite well and need to look at money for extension component.
Deal with growers using a personal approach. Invite growers personally. Social approach. Not large groups.
Demise of DPIF extension has not resulted in a reduction of TT. - Processor
Difficult to get good statistical data from processors.
Difficult to get growers interested in field days.
Difficulty in getting interest in workshops - does not believe growers are comfortable in this environment.
DPIF lacking depth due to loss of people.
Every 2nd year McCains has worldwide conference.
Good fruit and vegetables a good source of information.
Good relationship between DPIF and growers. Service needs to be improved.
Growers do not like travelling. Very regionalised.
Growers have a short attention span but are hungry for information.
Have good international networks gained from travel. - Processor
Have people travelling interstate and overseas regularly.
Impartiality of private advisers not considered a problem. Quality of relationship the important issue.
Industry is well serviced.
Information needs to be readable.
Landline is very good. Cross Country too early. - Grower
Lot of animosity and distrust in the industry that impacts on the access to information.
Lot of growers like videos.
Lot of information comes through Good Fruit and Vegetables
Lot of information from local DPIF and have local input into research projects.
Lot of information from Serve-Ag.
Lot of support from commercial links.
McCain agronomists work with portables a lot in the field and give back information to growers on the spot.
Immediate feedback.
Needs to be quality feedback to growers (eg. bruising) - (Investigate feedback loop)
No TFGA newsletter
Not enough input into national body.
Not sufficient interaction between the states.
NZ a very good example of people really committed to their industry.
One agronomist will travel internationally each year. - Processor
Processors need better understanding of grower's situation. (Probably visa a versa too !)
Rather than give growers information give them tools.
Serve-Ag more product focused which can slow adoption of more holistic technologies.

State reps have a greater responsibility to communicate to national body.
Subscribe to overseas publications.
Tapes are good. Vegelink was very good. These are probably not well marketed. - Grower
Videoed movement of potatoes through a harvester. Then showed growers on the spot. Generated a lot of comment.
Weekly column in Tasmanian Country - not a lot of potato info

Internet and directory

Access to expert systems would be good.
Because there are so many crops many of the computer programs cannot handle it. One program needs to be able to handle all. - Grower
Bulletin Board a possible option.
CAB and Agris abstracts better for scanning.
CD on years research
CIN - Community Information Network. ex DEET computers put out into country areas and libraries
Could have Potato Conferences on the net.
Database of past research would be very helpful.
Don't have time to read for hours in a day.
Email has a lot of potential.
Email is good. Quick, convenient. - Grower
Get a lot of information through the American system. - Processor
How do you find information from projects done 10-15 years ago. Can it be put on internet.
Information on the internet needs to be more industry specific so you do not have to wade through irrelevant information.
Internet has very specific uses. Not a scanning medium.
Internet should have links to all potato research connections in other parts of the world.
Internet to be used as a repository of past work.
Internet would be a good option.
Internet would be good because we could access it when we need it. Paperwork hard to keep track of. Easy to loose booklets. - Grower
Key point is being aware of what is available.
Know a reasonable number of growers using the internet.
Lot of growers have Pcs, faxes and mobile phones.
Lot of problems sourcing information once key people leave - DPIF.
Need a list of people in government departments, universities and processors.
Need a list server for the potato industry.
Need a system to look at the raw research data. Talk to Rothamsted.
Need to be able to obtain research information.
Not difficult to keep track of research in Tasmania.
Not many have internet but many have computers. - Grower
Source a lot of information from America.
Trade directory better as a computer program.
Trade directory good. Access type with description would be good.
Use Agnet
Use email and internet.
Using on-line services such as Dialog.
Would not underestimate the internet as a technology for growers.

Newsletter and Potato Australia

Distribution four times a year not a problem.
Growers have limited interest in national body.
Need broader reporting about what is happening in the industry.
No feedback from articles in Potato Australia.
Potato Australia (researcher perspective). Is more interested in input. Receives more information from peers, industry and R&D advisory committee.
Potato Australia is good.
Potato Australia is informative but not stimulating. State roundups good. Growers seem to accept it quite well.
Growers seem to suffer from information overload.
Processors, Serve-Ag and consultants not on mail list. Give bundle to Simplot for distribution.

Grower management

A lot of the decision making is vested with consultants

Chemicals, fertiliser and then petrol are the major costs. - Grower
Cost structure quite high.
Cropping is an ongoing operation due to the range of crops.
Diversity puts a lot of pressure on growers.
Expectations are not high enough.
High degree of contracting, consulting and field officer input. Major portions of the management are being delegated.
Industry produces a premium product. While that advantage remains, the industry will remain viable.
Input costs a major problem due to higher freight costs.
Irrigation very behind.
Lot of growers and advisers do not have time to reflect.
Machinery a major factor in indebtedness. Cost of land also a significant factor.
Most farms do not track costs well enough.
Need greater focus on how to reduce costs. Grower
Not a lot of financial planning.
Not a lot of market options.
Not enough drive for high yields.
Old culture still prevails.
Potato industry is often hit and miss.
Seed industry needs a lot of work.
The loss of control is split between delegation and control via processors.
Things such as seed piece integrity have been known for years and yet is still not being adopted.

Miscellaneous

Best practice has a bad name due to processors emphasis on price reduction.
Concern over freight subsidy on goods being shipped to mainland.
Current generation of growers not highly educated.
Do a lot of their own development. - Consultant
Few fresh growers are only fresh growers.
Harvesting time dictated by processors which can mean harvesting is done when the soil is susceptible to compaction. Processors do not have sufficient storage.
In QA what are growers getting for their better product. (Highlights the need for a differential pricing system based on quality.)
Interested in base data from research not summaries or conclusions.
Major issues - rhizoctonia and scab - confusion between scabs.
Need for integrated management, rotations.
Need to focus on marketing using the R&D levy - Grower.
Presentation of results at seminars was poor but is improving.
Realistically, how much time is available for reading, attending field days and bookwork?
Scope for consultants to customise software for individuals.
Water erosion and soil compaction a problem from wet harvesting.
What is it that growers are not doing that would improve their position?

Appendix F: Comments from industry interviews – Victoria

Code of practice

(Growers need outlet options and reasons to supply quality and disincentives for suppling poor quality into quality outlets. Too much of the - us against them mentality. Code of practice needs some teeth!!! Can we rely on attitudinal shift solely in achieving compliance?)
A lot of potatoes went out for seed into other areas in the early stages. These areas were not tested.
All three codes of practice need to be put into place: Transport to Atherton, Export and Hygiene.
AQIS regulations for importing onions are not followed.
Bacterial wilt is another significant issue.
Because the Gembrook growers looked for it and found it they were penalised. Many other areas did not look. Why should they suffer.
Certification scheme is a compromise between the ideal and the practical.
Certified seed accounts for about 20-25% seed. Needs to be worked out again. A lot of growers will get two crops.
Code of practice not worth a crumpet if the regulations are not policed. Current system does not work because it is not policed.
Code of Practice viewed as important to prevent diseases such as PCN and bacterial wilt becoming established.
Code of practice. Basics the same for many diseases. Need to focus on packing sheds.
Current system encourages people with diseases such as PCN to hide the problem. Develops paranoia.
Cysts can last in the soil for about 20 years. In Ireland will not retest an infected paddock until 14 years.
Demo machinery can spread disease.
Differences between PCN species is in their climate preference.
Education hurdle has to be jumped with people coming onto property.
Electricity, fuel suppliers' and cars spread disease.
Entrenched culture. Many of them know the issues but change is difficult.
Female nematode produces about 500 eggs.
Funding for PCN stopped 30/6/94.
Gembrook growers have probably about another 20 years and then urban encroachment will absorb the area.
Gembrook growers want to pack their own produce and send it interstate. If packed into 20kg bags and branded for only consumption it should not be a problem. (Same as bacterial wilt) The produce gets to the marketplace anyway. Does not have to indicate PCN but just for table use only.
Gembrook only area where PCN was, that is still in production.
Growers will not export until they get a letter of credit. Export code of practice for the growers has been prepared. Seed should be cured after grading before containerisation.
Growers will want to sell everything they produce irregardless of quality or other issues. (Need to be linked to returns.)
Have vendor agreement which growers have to tick off on. This has been an educational tool as well. – Processor
Hosts include; egg plant, tomato, thornapple, nightshade. Any solanaceous weed is potentially a host. Potato and tomato best hosts. Host range well documented.
How does it fit; what comes onto the property, general hygiene, focus on packing sheds, mixing of bins, range of products being handled by packing sheds and the range of areas packing sheds are drawing produce from.
In an outbreak there is a cost sharing arrangement. Commonwealth will lead a program and states will support.
In seed there is a certain amount of disease allowed. This is wrong. There are a lot of problems with seed quality.
Lack of confidence in the process.
Inequity between local movements of potatoes from PCN affected areas and import trade from other countries.
Information has to come back in a useable form to convince people they are getting good value for their money.
Juveniles require potato root exudate to hatch.
Lot of disagreement as to whether PCN is endemic or controllable.
Lot of information from the UK and USA. NZ went their own way and quite different to other groups.
Lot of negativity towards the department by Italians due to quarantining during the war, dieldrin and then PCN.
Lot of the PCN debate relates back to trade barriers.
Lot of work done on Code of Practice. Have learnt a lot through the bacterial wilt in S.A. Use boot covers to go onto properties. When on properties use owners vehicle, not own, which could have moved between properties.
A lot of other people such as fertiliser agents and dealers do not worry about it. The onus should be on growers.
Simple things such as all visitors report to office. Need a culture change. There is a lack of understanding by many people.
McCains drive QA through specifying parameters. Those that comply stay in system, those who don't drop off. Contract driven.
Methyl Bromide should penetrate cysts in ideal conditions. Difficult to get good diffusion throughout the rooting depth.

Much greater reduction of nematodes under a resistant variety.
Need a code of practice that is workable and user friendly. Look at onions.
Need a good reason for farmers to implement a code of practice.
Need people to specify requirements for seed.
Need to go into a hygiene situation for PCN and let everyone be equal.
Nematicides only kill juveniles.
No compensation was going to be paid for PCN affected areas.
No perception of a problem with disclosing disease issues. - Processor
No potato shed with ISO9002 in Victoria.
NZ use Nemacur to control PCN. Does not completely control. Very toxic.
Onions brought into some packing sheds that pack potatoes increasing potential of contamination.
Only PCN surveying going on is by seed growers and for interstate movement from Victoria into South Australia.
Opportunity for contracting in some seed planting in Ballarat (Some seed cutting already contracted).
Other diseases as bad as PCN are not treated in the same way.
Other diseases can enter through entry point created by nematode entry.
Packing sheds can pack potatoes from affected areas and send them anywhere.
Packing sheds for potatoes very rough.
Packing sheds should be able to segregate bins. They are dealing with fewer and fewer customers.
PCN booklet (AHC) proposals unworkable.
PCN can grow anywhere potatoes do.
PCN has created a barrier between the growers and the department because of the implications of having a quarantinable disease..
PCN is a critical issue for the seed industry.
PCN is a grower issue not a quality issue.
PCN is a notifiable disease - why would anyone notify when there is no support.
PCN now considered endemic and quarantined.
PCN originally found in Wandin.
PCN sampling strategy has been national.
PCN survey booklet. Sent to every potato farmer in Australia.
People buying seed are buying a system.
Potatoes from PCN areas can be brought into local packers and bins sent back out to these areas. Hypocritical.
Onions also move through the sheds.
Potatoes going into S.A., paddocks are tested every year.
Qld DPI looking at problems with effective use of southern seed.
Quality of certified seed variable due to weather conditions.
Quality of seed an issue.
Quarantining hides problems and creates a range of social dilemmas. Enormous amount of personal pressure which creates a lot of local problems.
Queensland will not sample for PCN.
SA potatoes from bacterial wilt areas are branded not suitable for seed. (Why cant potatoes from PCN affected areas?)
Seed scheme aim is quality at the gate.
Some people hurt badly by PCN.
Some problems with poor handling and inadequate attention.
Spuds are not being sold out of PCN ground. These PCN areas have been taken out of production. The areas where they are being grown have all been tested.
Storage for curing is difficult as ideal curing conditions can render it susceptible to bacterial problems.
Talked to growers in other states where many tests were done superficially. Tasmania only state to have properly tested.
The areas where there was PCN was put back to pasture. Since PCN outbreak, three tests have been carried out.
Are currently using hygiene practices so it is less likely to be spread than in areas where it occurs but is not known.
The issue of dirt being brought in is a major issue.
The quarantine lines for PCN were not logical.
There are problems with incorrect handling of seed between buyer and seller.
There is a lot of awareness of the issues amongst growers in the process industry.
To be fair to everyone there should be a national PCN test.
Traceback for the original source of the PCN was not conclusive. Appears to have come from the packing sheds and possibly from onions.
Two issues; who had PCN and who is near it?
Use hygiene at factories. - Processor
Usually only one cycle per crop.

VFF proposal on PCN too much the other way.
WA outbreak - nematodes not in collection. Do not know what strains involved.
We lack information on the degradation of cysts.
When Wandin got PCN, Gembrook went into a Code of Practice using bags with the above for sending into NSW. Growers in NSW had the rules changed to stop exporting.
Where not allowed to grow PCN affected plants in quarantine for training purposes.
Younger ones are introducing a more businesslike approach. Need to instill the hygiene ethic in them.

Research

(Limited support for researchers except on request. Need for guidelines to assist product development.)
Could focus more on major issues - breeding, pest and diseases - especially fungal.
Does not think researchers are putting information out there. Are we tapping all that is being done?
HRDC - Communication a two-way thing.
HRDC termination reports slow in the coming.
Input into research issues from farmers – this is not being done.
Main R&D program Napies. Not sure about the remainder of the R&D.
Need guidelines for researchers to develop a level of consistency.
Needs to be more information coming out.
Not interested in some of the research projects especially some of the repetitive agronomy work eg.fertiliser work.
Would use the searchable database on the Internet for research information.

Networking and communication

Interested in any information that may impact on potato production from governments such as catchment, zoning changes, etc.. .
Austrade services are not consistent and products not transparent. They should know the cost of their services in overseas countries.
Ballarat and Thorpdale conservative and introspective. Thorpdale less conservative than Ballarat.
Benchmarking information especially if we move into export. Striving to become more competitive.
Better networking required into processor.
Both processors and growers are putting money up for R&D so it is important that information comes back.
Can we incorporate APEN's work in the potato industry.
Difficult to motivate many of the growers. (eg. vegetable levy)
Difficulty in targeting old and more experienced growers and younger growers.
Dyslectic, deafness and literacy problems.
Farmers are not good promoters of products.
For exporting need for market information and who to contact.
Good to have a list of people who assist in linking you with the right people.
Growers are not able to tap information effectively.
Growers come in to look at publications and videos.
Growers do not come to meetings.
Growers getting to information through commercial groups. Generic information there is a lack of and not centralised.
Growers not clued up with marketing. A lot have no marketing acumen.
Growers not getting right type of information because there is not the people there to provide the information. Eg. Chemicals. Farmers rely heavily on retailers. Farmers need good information on pests and diseases. Chemical Reps provide good information. Sales people can distort what should be used.
Have lost some of the capability for sharing information and people need to be acknowledged for their efforts on Potato Crisping groups in Victoria and S.A. Need to pull the big names from overseas. Lot of opportunities in this area and should be important to HRDC.
In potatoes they need to be more internationally focused. Need to understand what is happening overseas.
Information needs to be interesting.
Information on what they want, import permits, regulations, companies, products required. In Japan potatoes have to be peeled. In Korea they have to be washed and dried. Austrade not providing enough detail.
Initially did not know much about Austrade.
Interstate interaction has been market focused. Not a lot of interaction. Where there is a specific market goal there is more likely to be interaction (eg. McCains group)
Just get a feel for the system and it changes (ie. government organisations) Problem of consistency.
Lack of extension is not understood.
Last technical conference, he thinks, was the Healesville conference. Only had about 50 people, 10 growers and a mixture. Not a lot of specific workshops.
Literacy is a problem. Comprehension is a problem.

Major need is really on total crop management.
Maybe the correct forum for sharing information - American Potato Industry has conference every year and coming up in September.
McCains have their own agronomy program. Do not rely on government services.
Most of the information comes through farming community.
Need a central point for finding out.
Need a market focus - still has to be developed.
Need better information on who to contact to develop a strategy for export.
Need cross-fertilisation between industries. Get together to brainstorm.
Need greater focus on women
Need more demonstrations using demonstration farm in Ballarat.
Need opportunities for seed funding for export initiatives.
Need real practical things that can be implemented.
Networking could be improved. Very necessary.
Networks with other states no problem but not strong due to lack of time. Also a problem keeping up with technical information. Need more time allocated for this and recognition of need.
No problems in understanding what is available.
Opportunities to draw stories from market research data.
Other industries are more internationally focused.
People still wanting recipe information.
Private groups exist that link people to exporters, shipping, etc..
Quality information needs to come back linked to the financial side.
Relationship between Agvic and industry improving.
Researchers have very limited perspective.
Should be feeding back information to industry managers.
Spud growers do not read a lot of information. Work long hours and do not get time to read.
Story on the Tasmanian approach to contracting. USA approach is a lot further along than Tasmania. Good basis for a story.
Technical conferences were very valuable.
The cadmium leaflet should be the sort of publication all research projects should produce.
There is a need to educate service industry better. (eg. Western Flower Thrip)
There is a perception that farming can be prescriptive. The interpretation is not always appreciated.
Thorpdale set up a marketing group which tried to address QA and other marketing issues.
Use to have an industry conference and a technical conference which was more for professional.
We need simple rules - In wine industry less than 10^{o}C, less than 10mm of leaf wetness that links to simple management decisions. We need simple rules.
We need to be more colourful and eye catching in the production of information.
Western Marketing doing excellent work.
Within a region growers (processing) willing to work with each other. Some competition especially during downsizing.
Would be good to have a monthly literature review of potato research from around the world. Headings such as breeding, pest & diseases, etc..

Internet and directory

Directory - prefer it on disk.
Do not know about computers on farm.
Growers (Gembrook VFF) support the need for the internet. Training an important need for the internet.
Internet - need to protect our information. Cost of this process expensive.
Internet concept sounds good. - Processor
Internet would be useful for HRDC research information.
Most of the farmers have computers in the home. Not necessarily bought for business.
Not connected into internet but would consider it if there was something to use.
Not connected to Internet. Not considering.
Probably would not use publication guide and Internet.
Would keep Information Directory as reference.

Newsletter and Potato Australia

Growers look forward to Potato Australia coming out.
Hardly have time to read Potato Australia.
Info from HRDC is reasonably well reported.
Information needs to be timely.
Maybe focus on export statistics especially during promotion of export.

Maybe once a year overseas trade statistics.
Need articles in Potato Australia on how to use the internet.
Need cost of production data.
Need greater frequency of information output.
Need more cost price information.
Newsletter a good idea. Keep it short. Chemical Standards newsletter a good example. Like the shorts approach.
Prefers a scanning newsletter. Durable matt.
On the front cover of Potato Australia can the key items inside be listed.
PA - does not know where it comes from. Need a letter to growers telling them they are paying for it and what it is all about.
PA is a stale magazine. Information is coming out too late.
Potato Australia - For an interested layman, interesting, some of it gets too technical. One in four growers cannot read properly (his estimate, maybe higher). Literacy is a major problem. Information has a two week shelf life.
Farmers need to know more about what is happening in their industry (eg.APIC).
Potato Australia - Keep articles short and easy to read. No problem reading, just the desire.
Potato Australia is very good. Growers do look for it. Distribution has improved. Who looks after other groups such as the merchants? Need a mailing list from the Merchants Association.
Product catalog possible for Potato Australia.

Grower Management

Does not agree with rotation (1 in 5) but it is how they manage the rotation.
Grower approach mainly driven by tradition. Other regions of the world have potatoes removed by winter, not so in Australia. They take it too easy.
Growers are still not use to going past the farmgate.
In the crisping industry grower management is very good and the incentives are there to drive the industry. Lot better than fresh and seed.
In the fresh sector there are a lot of problems. Many are loathe to change. Traditional growing areas.
Lack of benchmarking awareness in industry. Badly needed.
McCains Grower group (~80 members) involves the whole state. Plant in Ballarat. Solid group. Brought guy from USA to establish agronomy program. Cost about $1/t but increased yield by 17% and rejects went down.
Most growers around Central Highlands area. Involved in a lot of local government activities.
Need potato specification chart.
Need to move industry towards not over capitalising and looking at opportunities.
Seed potatoes; difficulty in year round planting, not using certified seed is a major problem, leaving potatoes in the ground too long and digging wet creates problems for disease.
Too much focus on production, not enough on marketing.

Miscellaneous

14 day disclaimer on tag.
AgVic has not been market focused enough. Need to match rhetoric with action. Department relying on growers a lot.
All inspectors are qualified auditors under the AQIS system.
Average rejection in certified scheme is about 5%.
Check distribution of seed handling leaflets that Chris Williams produced. Leaflet was very good.
Good if AgVic program can have people who can walk through with grower groups. At present too much distance between government and grower groups who are trying to do it.
Growers have three audits a year. Two announced and one unannounced.
Had QA scheme in place since 1991. About half the Victorian seed production is QA. QA growers asterisked in seed booklet. This is not marketed though. Most QA growers are the bigger growers.
Have accreditation scheme with laboratories to ensure they meet quality standards.
Increased yield through their own one-one program by about 5t/ha which is $1000/ha.
Lack of pest data for developing district prediction programs.
Lot of changes in the industry as a result of market demands. Moving towards more virgin country.
Lot of non-certified seed used.
Main HRDC project is breeding program. Has been more negatives than positives. Last major local release was Coliban in 1974. Nothing out of 80s crossbreeding that inspires. Cannot think of a lot of HRDC projects and thin impact.
Most problems resolved between buyer and seller.
Need to look at export opportunities.
Not competing with Tasmania and WA because they have closed borders.
NZ has a truth in labeling scheme.
Our growers should be looking at alternatives such as organics.

Over time the ability of farmers has declined.
Potatoes from Ballarat are not attractive for the fresh market and therefore the focus by McCains for processing.
Seed growers are more concerned about the negatives.
Seed industry very competitive.
Seed scheme QA similar to SQF2000.
Too many varieties - need only a few in each group for the market to comprehend.
Victorian growers pay for public seed bank at Knoxfield.
WA have bought QA system. Opportunity for SA to buy system.

Appendix G: Comments from industry interviews – Western Australia

Code of practice

Code of practice for seed production. Part of a larger Code of Practice for the whole industry. Have a consultant working on COP for ware growers.
Controlling spread of disease is very tricky. W.A. is to export seed into South East Asia.
COP big issue
COP needs to be market driven.
COP needs to be more scientifically based.
Hoping to quarantine Albany.
Import of seed from Tasmania has potential to bring in white rot of onions which is not here. Government is foolish with regards to quarantine. Should be doing more. Government putting it back onto producers. Should be a government responsibility.
In Perth area, all varieties have to be washed due to PCN.
Leaf Roll is devastating for processing chips.
Lot of growers in Albany reasonably old. Lot of potential.
Need an umpire in the seed scheme. COP (QA) guarantees a procedure not quality. Tying COP to HACPP. Do not want to go to ISO9001. Food safety is the major concern in the process.
Need incentives to use COP
Seed growers comments on draft COP was that the recorded information needs to be part of a management system.
The whole industry has to have a COP. Very important for survival of industry.
Very little contracting. Virtually no machinery is shared.
Ware group leading the way with COP. Processing not moving yet.

Research

A lot of the work has been done.
Always plant demonstration next to trials.
Amount of demonstrations is not increasing. Some researchers do not demonstrate.
Be nice to get good feedback from HRDCs about how good the approach is. HRDC not good for feedback.
Concerned about cost-benefit analysis – HRDC application.
CSIRO does fantastic work on black beetle.
Demonstrations need to be done in local areas.
Do not hear too much about national research.
Does some evaluation by washing them and putting into plastic bags.
Encourage scientists to write up industry articles when doing research articles.
Farmers need to see the results in practical demonstrations.
Finding research easy enough to pick up.
Fleck is a significant problem. A number of diseases go under this name. Would like to get research done on this.
Have lost information services and this could be more difficult. - Researcher
HRDC doing fairly good job. Can ring up and get any reports. Does not agree with rise from 7½-10% administration cost. Would be very concerned if it were higher.
If we are spending $m1½ on research then we have to move researchers around the country.
In W.A. R & D produce 6 bimonthly reports which go out in W.A. newsletter.
Interested in increasing circulation of Biofumigation update which comes out twice a year.
Major need is information on new varieties. Can be caught out with not having the right seed available.
Need for more nutrition work. Have worked with AgWest in previous trials. More needs to be done.
Need more agribusiness support. Need to work up a research program.
Need more demonstration type work.
Need problems to be addressed by research. Problems with storage are causing difficulties.
Need some thought about how collaborative projects really are. What is the best way for them to work. This last minute ring around for collaborators. Need for truer collaboration, rather than just seeing to be doing it.
Networking important. Workshops such as Norbet's very important. Finds other researchers in other states very easy to work with. Knowing who is working in the industry.
Not happy with feedback from some interstate researchers. Researchers should be accountable. They should get back to people. Need to keep people up to date when a person is involved in supplying information.
Not into R & D. Not big enough. Tend to follow industry. – Small processor
Nutrification problems with estuaries.
On coastal plain still a lot of information being written up. Have had a good information group, but they have been privatised. Do not know what affect this will have.

Projects need to take into account the department funding requirement. Purchaser/ provider model. Look at Horticultural Development Council Model in England. Have TT component. That seems to work fairly well.
Pulling information together sometimes requires a project in its own right. - Researcher
Putting microbes back in the soil Biologic-SC27. Difficult to obtain information on it. Ag Department did research and was controlled by department.
Scientists are pressured to do high quality, innovative and specialised research. In today's climate, this creates instability.
Seminars held each year. Major extension effort is through demonstration.
Supports greater accountability with funding being cut if research reports not being written up.
There is a need for more nutrition research.
Think it is wrong that we pay $20 for report. Want information in a form suitable for growers.
Time a problem in producing extension material.
Variety information needs to be summarised. Roger intends to do this. Should be breeding more for our latitudes. Doing an excellent job. Some problem with processors taking new varieties.
Variety trial information and field day last Thursday was very good and well supported by growers.
We do not get the results of what is going on in other states.
We do not receive the reports from the research.
White fringed weevil work has resulted in an increase in use of metham sodium. Trying to pull back on this.
Focusing on risk and need for using metham sodium. The best opportunity is the biofumigation. Lot of farmers are aware but nobody is really trying it. Not pushing biofumigation until we better understand it.
Without feedback scientists are making guesses about what is needed.

Networking and communication

A lot of problems in Tasmania and like to know what is happening there.
Also have Western Potatoes newsletter. Can also talk at zone meetings. Have reasonably good network for getting information to growers. Work with Pemberton and Busselton. ¾ of industry in those two areas. Not a lot of contact in the Metro or Albany. None in Albany specifically dealing with potatoes.
Biennial index thought was a good idea.
But have a location disadvantage to attending meetings, conferences
Communications quite good in W.A.
Consulting work. Use program for fertiliser recommendations.
Difficult to attend meetings. The APIC R &D and Marketing meetings in different states. Difficult to get people to these functions.
Difficult to monitor pests and demonstrating what is happening.
Difficulty in convincing older generation of need to change.
Do not always get invited to growers meetings.
Main information through Potato Grower & Chemical companies.
Do not get much information.
Do not have good international links. Local consultant has good links.
Do not know what is happening in Qld & NSW.
Does not read so much at night. Read at breakfast time. So prefer more bit size lumps. Tom with Potato Grower put punch holes in it to aid filing.
Does not tap interstate links. Works through Potato Australia and not growers. Finds AgWest okay, but staff have reduced and loss of inspection was not liked by growers. AgWest views potato growers know what they are doing so only provides support when needed.
For cadmium, leaflet is main information and seminars..
Fortunate in having the Potato Grower in this state.
Get California Farmer, Spudman, Potato Grower. - Grower
Get Potato Business World (Essential reading for Potato Processors).
Gets Good Fruit and Vegetables. - Agent
Gets W.A. Horticulture put out by Countryman and the local paper. These two papers main source of information and chemical companies. Wesfarmers in the past was not horticulturally orientated.
Good contacts in Israel in vegetables, but have not traveled overseas with Ag Department.
Good farmer association - Extension
Good support from Simplot in America.
Good to get better information from overseas. For example, is the SE Asia demand real or not.
Good way of getting feedback is through reprint requests from published papers.
Growers are willing to communicate with each other but this would change if Western Potatoes is lost.
Growers get direct feedback from Board and keep informed.
Growers need to chase the information. Do not tend to employ consultants.
Growers wouldn't necessarily know what is happening on national bodies.
Happy in gaining access to information interstate.
Has seen cadmium leaflet & HRDC.

Has written a lot of articles for the Potato Grower, but has no options for other states.
Have difficulty trying to gain access to older research. Especially research not library tested.
Have done workshops. Would get 150 growers. Do get a good turnout. - Grower
Have good contacts in S.A. Not well developed outside research. Good with Vic and Tas. Not so good in NSW and Qld.
Have got a good network for getting information out.
Having Western Potatoes & Simplot. It is fairly easy to reach most growers.
How much research is in the local area with these varieties? How relevant is the information? Lot of the technology aids are not much better than a visual indication.
Industry not good at setting priorities.
Interested in what reference books there are.
Invited to zone meetings - Agent
Is invited to field days and field walks on potatoes. - Researcher
Lack of expertise in AgWest. Had good people which have been lost.
Local Potato Journal fairly ordinary. Does not receive Western Potatoes newsletter.
Looking at establishing gazette and bulletin service.
Lot easier dealing with new growers.
Lot easier for big operators to afford consultants.
Magazines can be read in ute.
Main problem is lack of any information on processing.
More difficult to get information.
Need for booklet for identification of pests in potatoes (e.g. Victorian pome fruit).
Need for networks.
Need for retailer education, consumer education.
Need to build up a meeting structure to improve technical transfer.
Need to get market information back to grower. Need marketing information back to consumer.
No consultants in potatoes in W.A.
No problems with AgWest - Consultant
No real department network since Peter Dawson left Albany. System a bit of a shambles. Not a lot of confidence in seed inspection people.
No real process for getting R & D out. There is no one way that is best for getting information out.
No resources for reactive extension.
Not a lot of information in the processing industry in W.A. Not a lot of resources.
Not aware of how other areas do things. Positive to learning more.
Not much to do with AgWest. Not well regarded now. Used to be very well regarded. Growers view them with contempt. - Agent
Not on mailing list for interstate information. Others on.
Not sure whether we really hear about all the R & D in the east. Can we access overseas information? Do not get overseas magazines. Interested in finding out more about magazines. Interested in what is happening in general.
One effect of the pool system is a buffering of information.
Only information we receive is through Western Potatoes.
Only small number of seed growers. No information about new varieties. No real network interstate or international.
Part of the job I guess is to find out the information, but this is difficult with existing workload. - Processor
People are less reticent about ringing somebody in W.A.
People will accept change if they know.
Potato Grower good for W.A.
Potato moth work in Tasmania is interesting.
Potato Workshop could be opened up to growers. Could be extended with grower involvement. Maybe couple days with researcher and couple days growers.
President has been keen on a national centre where we can tap into. Should include international information.
Internet option sounds good, but a lot of the farmers are not into computers.
Produce newsletter – Horticulture Biofumigation update. 200 on mailing list include IAMA. Difficult to get feedback from farmers.
Receive very little technical information. - Researcher
Send Johima Press & Rural Media information front pages of APS books.
Share a lot of information as a result of the board system.
Simplot do not communicate well. Little feedback.
The field officers' two roles of negotiation and information provider, does cause problems.
The whole situation is made difficult by Departments of Ag cutting support. - Grower
There is a gradual breaking down of the state barriers. More of a national mood.

There was research done on how farmers find information out. Found out more socially at meetings. Talk to researchers at the meetings. Need researchers touring talking to growers. Possible for research presentation to be videoed. Growers tend not to read it after working all day. Growers are not use to reading.
Through PGWA have good access to growers - Researcher
Too much information.
Use to receive a lot of information from Toolangi. Do not get it any more since the board handles the seed.
Used to get USA publications.
Uses consultant and fertiliser adviser.
Value support from chemical companies. - Agent
Very concerned about the lack of experienced field operators that can provide advice to growers.
Very few people know anything, no manuals and even groups like CSIRO could not help. Nowhere to go to get assistance. Tried CSIRO, they did their best they could but were not much help.
We get a lot of help from chemical companies.
We have enough information (do not necessarily need more research) but the difficulty is getting it utilised in the growing community.
Will look at networking with newer smaller groups in Perth.
Would appreciate being able to link into overseas information sources.
Would like to be able to put finger on research from America.
Would like to know more about what their future is. Younger growers are looking forward and need information.
Would like to know more topic specific – seed information, seed grower. (Look at separation for seed/processing/ware).
Would love to know about what is happening in Asia.

Internet and directory

Do not have a computer. x2
Do not have computers. Looking at getting a computer.
Elders are looking at hooking into internet. Would not use internet database.
Has computer and internet.
Have computer. Not on internet.
In information directory, spell out who pays levy and how it is collected.
In other trade directories have four lines of information on products.
Internet database option would be great to have as a resource. - Agent
Internet option – Any information that is available to everyone.
Likes the internet database approach.
On internet. Internet database sounds good. The way to go.
One of their people on internet. Not the company.
Supports a national manual. Wants loose leaf so it can be updated.
Would like the growers to be hooked into internet for information. - Processor
Internet database sounds good.

Newsletter and Potato Australia

Been asked to be put on Potato Australia mailing list, but did not get one last time.
Charge $82 an insert.
Difficult to get advertising to maintain local newsletter. Charge $15 farmers, $20 companies.
Do not get Potato Australia, but get Potato Grower.
Do not get Potato Australia. Would love to get it and any information coming out. - Agent
Does not get Potato Australia personally.
Get Potato Australia. PA must be in a language that growers can pick up. The botanical names etc. are not understood by growers. Catchy headlines and not government headline.
Gets Potato Australia. Good publication. Would have thought it was well received. With newsletter will be a good combination.
Gets Potato Australia. It seems pretty targeted. Good range of articles. - Researcher
I am concerned about national newsletter. The size of the advertising budget and the effect on our local newsletter.
Include in Potato Australia times of sowing.
More information can be printed on potato variety information.
Newsletter – bimonthly.
Normally gets Potato Australia, but not the last copy or cadmium or HRDC book.
Nutrition differences would interest growers. Growing conditions in other areas.
Potato Australia – does a good job. Needs more about what is achieved and recommendations. More like a funding submission than a progress report.

Potato Australia – Need to bring it out more often.
Potato Australia difficult to remember publication date.
Potato Australia happy with but not with NaPies
Potato Australia is good and well worthwhile. Thought maybe some advertorial was going in. Need obvious difference between unbiased editorial and commercially pushed issues. This is a problem with Tom's Potato Growers.
Potato Australia needs to be more regular.
Potato Australia once a year, people wonder if it is still going.
Potato Grower is good. Finds it easier to digest than Potato Australia. Articles good in Potato Australia. Prefer 3 monthly.
Prefer one publication
Roundup of individual areas would of interest to growers.
Very strong on upgrading Potato Australia to four times a year. Do not downgrade articles. Has concern with the way Good Fruit and Vegetables has gone in this regard.
Would be interested in advertising.

Grower Management

80% growers don't rotate. Put in each year. Only potato seed grower. (Relates to Albany. Swamp farming.)
Albany all potatoes. One crop a year. Do not seed every year. Once every two years.
Albany rely on swamps. Cannot top dress to increase yields. Getting $500t because they cannot increase their yields. Many of the swamps go under water in winter so self sows not a problem.
All growers plant own seed, cut own seed and harvest own crops.
Aphid problem minimal due to winds coming off sea. Do not rotate. Approved seed.
Becoming very common to put in underground irrigation systems.
Big gains when traveling irrigators introduced.
Biggest needs are a better seed source and controls for white fringed weevil. Rhizoctonia nearly beaten with Rhizolex.
Cadmium has been an ongoing awareness.
Difficulties with silver scurf. Cannot get good information. Chemicals registered overseas are not allowed to be used here. Woolworths will restrict use of chemicals which is a concern. One example is stop sprout. Woollies is not wanting growers to use stop sprout, but it used extensively in the USA. Pesticide residue testing is improving all the time.
Four year rotation. Pasture/Potatoes. Soil is fairly weak and it would be difficult to sustain more intensive rotations.
Green manuring can increase yields and impact on powdery scab.
Ground similar to Fens in UK and areas of reclaimed land in Holland. Cost of production is going up and specialist. Yield is not high because seed size is kept down.
Grow in swamp. No self sowns. Floods in winter.
Growers tend to focus on yield increases.
Husbandry has to suit area.
Idaho professors who visited were staggered at small size of diggers.
Lot of equipment modified for their own operation.
Most people grow other crops.
Most swamp land being used. Some irrigation in Denmark, WA.
No contractors.
No seed growers do bacteriological tests. Such as Dutch.
Nobody can tell difference between common and powdery scab. Have something called crocodile skin.
Organic carbon seems to be decreasing with each crop. Used to be a lot of green manuring but does not appear to be a lot now.
Potatoes/Pasture rotation. 1 in 4
Rotations down to 4 years – some less.
Scab is biggest problem.
Soil moisture testing helped determine water requirements of crops.
Some areas easily frost prone, use semi-permanent irrigation systems. Semi-permanent is the paddock is laid out once. Pipe moving went out 30 years ago.
Some growers are cropping too frequently. This is sometimes sustained by fumigation. Everybody along the coast has been into this practice. Been going on for last 12 years.
Technology valuable – new types of harvesting, spray, gear, varieties. A lot of the information generated in other sates is not relevant. Have to dig in the middle of winter which the equipment is not suited for. - Grower
Use Rhizolex. Rhizoctonia main concern.
Virus diseases more of a concern than fungal diseases in W.A for seed.
We create a lot of problems with monoculture.

Miscellaneous

50% drop in the number of growers over last five years.
Ag Department pathology services are so scant for the size of the industries.
Agriculture budget went up but the money going to Agricultural Services went down. Money is being used in restructure.
All potatoes have to be sold. Restrictions on how it is sold.
Fumigation usage rapidly increasing. Concerns him as an ecologist.
Concerned about the use of clean and green. Are in extreme danger of believing our own rhetoric.
Consumers getting a raw deal.
Declining numbers of seed growers.
Delaware has an endemic virus called calico, which can cause deficiency symptoms.
Department should be in R & D and group extension only.
Difficulty with handling a range of potatoes is the low throughput due to the size of the W.A. market.
Do not have a rigorous label system.
Due to low volumes of seed produced there is no market pressure.
For prices to be maintained it is essential quality is kept high.
Growers are being paid for quality. For those getting potatoes into Premium category, they are making good money.
Growers in S.A. not so concerned about price are more quality orientated. Most growers who are left are more commercially orientated.
Growers very worried about seed.
Growers were going out of business because they were making less money than the packers.
Have been in a closed system so long that we do not know whether there are issues.
Having a person in Manjimup interested in potatoes will be good. Not a lot of involvement with nutrition. Lack of interest from agents.
If a grade does not sell, then Western Potatoes drops the price. Supermarkets want higher quality.
In England have a patented process for detecting leaf roll in the field. Cannot obtain test at this stage.
In UK selling four potatoes as baker's specialty line.
In UK the disbandment of marketing authorities was the worst thing that could have happened.
In USA have quarantined areas for seed. We have the technology to do this better. The lack of expertise we can get around by doing it more ourselves.
Individuals will have little impact on market. Need co-ordination and co-operative action.
Intergenerational attitude to work a real issue.
Involvement in marketing evaluation provides a lot of useful information. Problem with growers introducing a new variety but more so with the wash/packers. In W.A. wash/packers are not so close to supermarkets.
Irrigation used for cooling.
Is a levy taken on seed potatoes?
Limited in our ability to expand due to water problems. Area limited to between the coasts and Darling Range.
Lot of concern about seed especially due to leaf roll virus.
Lot of problems with variety labeling and packers not concerned with handling.
Lot of smaller growers have left the industry.
Major concerns – varietal changes that the community need or want.
Merchants licensed by Western Potatoes, but not supermarkets.
Merchants rort the system. (Merchants – packers) Pack out may not = the way the merchant sells.
Need a lot more effort going into seed.
Need for in paddock communication. Not a lot of field activities at this stage, but will increase.
Need for industry to take varieties to commercial stage. Industry needs to invest more in new variety development. Need for commercial tests before release and support for new varieties. Need varieties that can tolerate what is thrown at potatoes throughout marketing chain.
Need to promote quality standards. This is done in WA. Premium, Grade 1, Grade 2.
Nobody is winning in the Eastern States with the current systems.
Not a lot of contract seed cutters. Most done on each farm.
Not much movement in or out of industry.
Not much leasing of additional land due to water problems. Used to be more common.
One guy exporting crisp potatoes into Asia.
Only industry in the state to have a promotion system.
Part of problem with seed is a lack of understanding of what certified seed is.
Potato ads lifted the industry.
Potatoes in plastic bag with high specific gravity tend to break down.
Price differences with eastern states.
Problem in Australia we have tendency to over produce and returns are marginal.
Public believe food is to expensive.
Public ought to know how good a product potatoes are.

Quality, deterioration between the time it leaves paddock and purchaser uses them.
Questions rotations given the problems from Victorian certified seed.
Rob Henderson did bench making in Tas. Lot of it was right.
Sees no problem linking projects COP WA with QA and my COP.
Sells seed potatoes to Mauritius and Sri Lanka.
Small tubers have a far higher chance of having leaf roll virus in it. (Why are they small in the first place!)
Sometimes go to Perth and looked at product at other end. An eye opener.
Statutory marketing protects the little people and that is not where it is at.
Supermarkets were loosing confidence with existing varieties and problems in processing varieties.
Technology Transfer is a problem area.
The better grower was not paid adequately for quality. (Like the old AWB system before protein payments.)
The grades are an evolutionary system.
The license system does not promote efficiency. Lot of contracting in processor industry.
The smalls which are used for gourmets are reflected in price back to grower.
There is a lack of agribusiness/consultant support as exists in Tasmania.
Thinks Victorian certified scheme is good. - Researcher
To send seed interstate have to go through quarantine protocols – fork testing etc.
Trucking, packers and others are to be in COP. Those that are not seen as quality assured will be alienated from the industry.
Varieties need to be branded on the bags. Some of the wash/packers are good some are poor. Focusing more on supermarkets. Due to Western Potatoes, we can get our message to consumer. Eastern states are not market orientated.
Very costly to be involved in national bodies.
W.A. system works, not perfect, but positives outweigh negatives.
WA growers trade off higher prices for stability. Smiths, Simplot do it why not supermarket with the Ware.
WA like being in another country. Would like more research being done in WA. Simplot put a lot of groups in Albany out of business by moving into Scott River themselves. Seed is No. 1 priority. Besides the development of the scheme there is also the technology transfer component.
We have difficulty in producing high flavour potatoes because in places like England and N. USA there is longer light period and less harsh conditions for growth
Went to UK on study tours. Very interesting. Techniques very different. Computerised selling results in more frequent ordering which means less storage. All bags of potatoes have use by date. Tesco.
Worst climate for potatoes, yields good and costs high.

Appendix H: Potato Internet Starter Pak Survey Results - 1998

A survey was carried out of the Potato Internet Starter Pak to determine if it was worth updating, and if so, how it could be improved.

The Starter Pak was produced to assist people using the internet to gain easier access to sites with potato related information. It was advertised in Eyes on Potatoes and people ordered and received the Starter Pak by email.

Response

76 people requested and received the Starter Pak, one person was used to test the survey, 71 people were sent surveys, four peoples email addresses were no longer working and 18 people replied.

Due to the low number of responses I did not carry out any detailed analysis. The results have been presented as collated.

Conclusions

The main conclusions were :

- The majority of respondents were able to use the Starter Pak without any problems.
- Most respondents wanted the Starter Pak updated and improved.

There were a number of suggestions for improving the Starter Pak such as:

> Improved indexing (More categories, define categories, more use of sub-categories)
> More information (New varieties, postharvest handling, QA, marketing information relevant to Australia, food statistics, agricultural databases, software for farms)
> Would like to see it updated annually.
> Have a public potato forum (This is usually referred to as a newsgroup which is like the old party telephone line for email users. A newsgroup maybe on Common Scab and anybody can email into the newsgroup or read the mail sent in. These are quite popular with some groups and can generate quite a debate on a topic. Chat rooms are another form of public forum but tend to be a bit tedious at times. They require the interested parties to log in at a particular time and type messages which can be read by anyone linked in at the time.)
> The next step should be a dedicated internet site.
> Very good as it is.

Given the results of the survey I will be updating the Starter Pak this year. In what form the Starter Pak takes after this next update will depend on the project " Facilitating the introduction of electronic information products and services to the Australian Potato Industry " (See p13 Potato Australia 1998).

Results

Q1 Did you have any problems obtaining the Starter Pak by email?

17 *No* 1 *Yes*

If YES what was the problem?

Couldn't decode

Q2 Have you loaded the Starter Pak on your computer and used it?

18 *Yes*

Q3 Did you have any difficulty loading the Starter Pak into your computer?

15 *No* 3 *Some difficulty*

Q4 What browser were you using?

13 *Microsoft Explorer* 4 *Netscape* 1 *Both*

Q5 Once loaded could you get the package to work?

17 *Yes* 1 *Not at first*

Q6 Was the Starter Pak useful?

16 *Yes* 2 *Uncertain*

Q7 Would you like the Starter Pak to be updated and improved?

16 *Yes* 2 *Not interested*

Q8 What would you like changed for the new version?
(Some information was edited out because it was not relevant to the question. The points made though have been noted as they provide some useful ideas for the project - "Facilitating the introduction of electronic information products and services to the Australian Potato Industry ".)

More actual similar sites rather than documents.
Longer subject index or searchable one.
More info on new varieties
More info on postharvest handling, packing and QA market access info relevant to Australia.
Maybe have sections based on categories? so purely Australian /American info can be accessed.
Link to potato production statistics on food and ag database.
People love seeing their names in print. A "public potato forum" or "vege debate!" where feedback may be forthcoming from an increasingly wider "audience".
The way the program works on my system is that I have to go back to the email (sent with the package) to use the program. Is there a way of having the file stored within the browser system for easier use?
More use of indexing - sub categories eg. disease/Pests/Weeds table and frame format (rather than line) - easier navigation.
Define - Index criteria (eg. Commercial)
Quality Assurance - Single category
Would like to see the Starter Pak updated on an annual basis to include new sites of interest as they become available.
Very good as it is - I realise there is relatively little Australian technical type information compared with overseas, especially regarding growing/production.
I think you did a very good job. I found it logical and easy to use. If anything the next step should be a dedicated internet site.

Q9 Do you have any details of any other sites that should be included in the update?

11 *No* 1 *Yes*

If YES site address

Technico site

Q10 Any other comments?

Is this project going to be linked to Fresh Link.
Unfortunately when I received the pak I was fairly new to the internet, so any problems of installation would have been due to that.
I believe this is a good tool to bundle web sites together, updates will be need to be made regularly to keep on top of site changes. Good job!!
A good tool - great place to start searching.
Valuable industry contribution by your project.

Q11 Your state

5 *Qld* 5 *Tas* 3 *NSW* 3 *SA* 1 *WA* 1 *Vic*

Q12 Your town

Not presented due to low number of returns.

Q13 How do you rate your knowledge of computers?

11 *Reasonably good* 6 *Fair* 1 *Just a beginner*

Q14 Is there anyone else in your household or business who has a reasonable knowledge of computers and can help you?

13 *Yes* 5 *No*

Q15 What sort of business are you in?

7 *Farming*
4 *Government - Research*
1 *Local agribusiness*
1 *Government - Adviser*
1 *Farming/Merchants*
2 *Processing industry*
1 *Private research provider*
1 *Consultant*

Q16 Do you want to discuss any other points about the Starter Pak over the phone?

17 *No* 1 *No answer*

Appendix I: Australian Potato Industry Communication Plan 2000-2005

Australian Potato Industry

Communication Plan

2000

Australian Potato Industry Council
Incorporated in New South Wales

HRDC

Awareness

Access

Understanding

Contents

Introduction

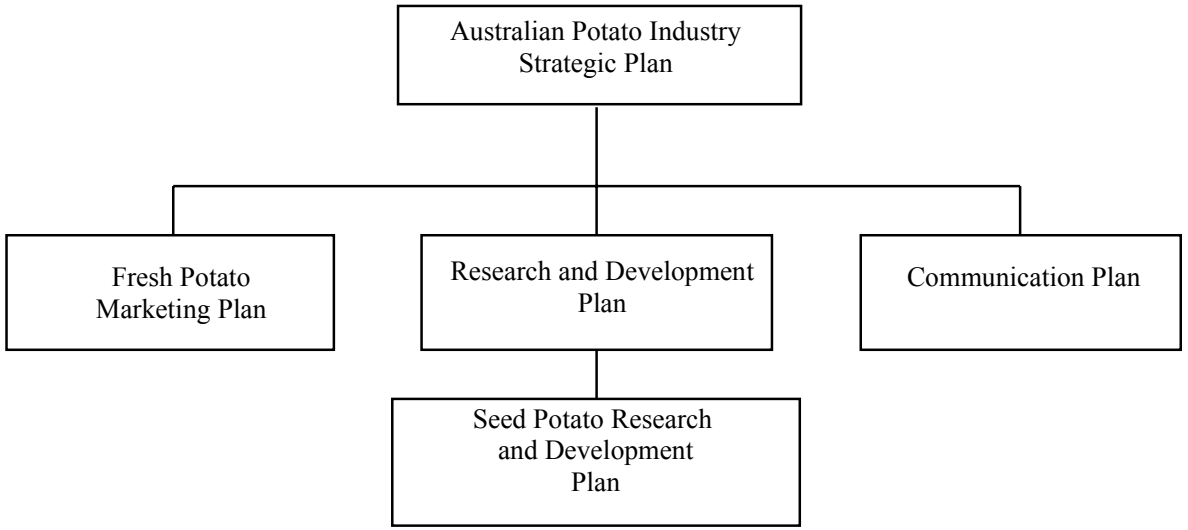
The plan has been created to guide development of the national communication effort within the Australian potato industry. A major focus of the plan is to address communication deficiencies impacting on the adoption of technology from the national research and development program.

The potato industry and government invests in research and development to provide benefits to the industry and the community at large. To ensure we gain the benefits from the investment the industry needs to have mechanisms in place to aid communication and assist in the adoption of new and existing technology.

The Communication Plan outlines how this will be done. The activities outlined in the plan do not replace local initiatives but attempts to provide a solid foundation for which local initiatives can be built whether this is done by government, private industry or grower groups.

The plan focuses on activities that will provide the greatest returns for the investment made given the resources that are likely to be available.

In reading this plan it is important to consider it as a part of a series of plans for the potato industry.



Background

The Communication Plan is an outcome of the Australian Potato Industry Technology Transfer Project that was initiated through the Australian Potato Industry Council (APIC). The objectives of the project were to improve communication in the industry, improve adoption of technology from the Research & Development (R&D) program and as it was a pilot project, develop a technology transfer strategy or as it now has become, the industries Communication Plan.

The plan has been developed through extensive discussions carried out as part of the above project and reflects the current needs of improving awareness, access and understanding of information generated from our R&D program and other sources in the industry. As the needs of the industry will change over time it is important for the R&D Committee to review the plan annually with a major reworking at least once every five years. As part of the ongoing evaluation and planning process, formal market research will need to be carried out to refine our understanding of industry needs.

In the course of developing this plan a number of important issues have become apparent.

- Farmers are distributed throughout a large part of Australia and operate in a wide range of soil types and climatic conditions which complicates the process of doing research and providing services.
- The search for areas low in disease will see new areas continue to open up for the forseeable future further adding to the above problem.
- The declining emphasis by government on traditional extension services and the greater role being taken up by private enterprise has produced new challenges for researchers in the way that they communicate and extend their work.
- The increasing focus on maximising the benefits of research nationally has made it more difficult for researchers to communicate at a group level with growers.
- Government services are in many instances state bound and therefore state focused which creates ongoing difficulties in developing national approaches.
- The service industry is an important part of the industry network. For the purpose of the Communication Plan the service industry is defined as the people who provide technical advice to growers, in particular - consultants, private agronomists, field officers, seed agronomists, fertiliser agronomists, government extension officers, researchers and chemical agronomists. These people need to be

kept informed of industry developments if they are to provide a high quality service for their customers and participate effectively in the development of the industry.

Mission

Better satisfy customer requirements by addressing information needs of farmers and the service industry so that they are able to more effectively face the challenges of a dynamic marketplace and changing community expectations.

Vision

Customers
Customers are able to obtain what they need and they feel the industry is responding to market needs.

Farmers
Farmers feel they have a good understanding of what is going on in the industry, the R&D work is valued and they can obtain the information they require to make management decisions.

Service providers
Service providers are seen as an important source of technical and industry information for farmers and other sectors of the industry and as such an integral part of the industry network.

Goals

- Raise awareness of industry issues
- Improve access to industry information
- Improve understanding of industry information
- Facilitate implementation of Communication Plan

Overview of national communication program

The following is an overview of the communication program based on current and proposed activities.
(✔Already available, Underway - Work started)

Will be supplied free of charge to growers and the service industry

Potato Australia (Sept/Oct) ✔
The colour magazine is the industry's technical journal.

Eyes on Potatoes (Mar, Jun and Dec) ✔
Colour newsletter focusing on research, development, industry news and services.

Information Directory (Biennial) ✔
A technical information resource guide containing details on contacts, information products and other information important in managing a potato business.

Can be obtained or used free of charge by growers and the service industry

Potato Internet Starter Pak ✔
A series of internet pages that provides links to potato information sites around the world. This information will later be included in the industry's internet site.

Potato Internet site ***Underway***
Will provide a 24 hour a day information service. The focus will be on high value services that require constant updating to be effective or are difficult or not economical to provide through other means.

HRDC/AHC Internet site ✔
The internet site provides details for all current and past research and development projects including industry summaries for projects that have been completed. Final Reports of all completed projects can be purchased through the site.

Can be purchased

Management Guides ***Underway***
Management guides are simple tools that help growers and the service industry do their job more easily. For example, an identification guide that can be used to identify pests and diseases in the paddock. These will be developed based on need.

Technical books ***Underway***
These will consolidate information on key topics to make it easy for people to use and gain access to the current knowledge. Proposed topic areas include - seed handling and plant establishment; varieties; nutrition; irrigation management; pests and diseases; managing the business; harvesting, handling and storage.

Potato Archives ***Underway***
This will be the industry's library of research and development information generated from the levy supported R&D program stored on an easy to search and use CDROM.

HRDC Final Reports ✔
All finished research and development projects will have a HRDC Final Report prepared which is available from the Horticultural Research and Development Corporation.

Can be obtained from HRDC free of charge

Strategic Plan and Strategic Plan summary ✔
The plan indicates where we want to go as an industry and how we want to get there.

R&D Plan ✔
The plan will provide clear direction to researchers as to what the industry wants to achieve.

Communication Plan and Communication Plan summary ✔
The Communication Plan describes what is being done to improve communication and the adoption of technology from the R&D program.

Other

All potato growers and the service industry (see Background for definition) are included in the national distribution system.

Key to tables

Priority

High
Medium
Low

Status

Ongoing
Underway
Completed
Left blank for work not started

Completion date

eg. June 2001

Suggested funds

Unknown	No estimate can be given at this point in time
<30	(less than $30,000 per year)
30-100	($30,000 to $100,000 per year)
>100	(greater than $100,000 per year)

or

Estimate of cost or real cost if this is known.

Strategies and actions for achieving the vision

You need to know about it to use it.

1. Goal - Raise awareness of industry issues

	Strategy	*Action*	*Priority*	*Status*	*Completion date*	*Suggested funds*
1	Produce Potato Australia once a year as the industry's principle technical journal.	1. Introduce reporting on all currently funded levy projects.	High	Completed	Sep 1998	Existing project
		2. Improve readability of articles.	High	Ongoing		"
		3. Improve the publication based on feedback from 1999 Market Research.	High	Underway	Sep 2000	"
2	Produce Eyes on Potatoes three times a year for industry news and application of technology.	1. Improve the publication based on feedback from 1999 Market Research.	High	Underway	June 2000	Existing project
3	Investigate the feasibility of an email service for keeping people up to date with R&D and spot news.	1. Carry out a simple questionnaire to establish interest.	Med		Dec 2000	TTM project
		2. If there is sufficient interest develop a pilot 6 month service and evaluate response.	Med		Dec 2001	"
		3. If the service has widespread support develop a permanent service.	High		June 2002	<30

What are we trying to achieve

The more industry participants know of what is happening in their industry the better off they are in dealing with changes, especially if they gain this understanding over time. If participants in an industry are well informed they are also likely to communicate more effectively amongst themselves.

Notes

1. Potato Australia was started in 1991. It has undergone many changes, which has improved the publication to the credit of the current and past Editors. Market Research in 1999 clearly demonstrated widespead support for the publication. No major changes to Potato Australia are planned.

2. Eyes on Potatoes was started in 1997 to address the need for a more regular publication and to broaden the type of issues presented. The newsletter focuses on application of technology, services, outcomes from meetings of peak industry bodies and general industry news, particularly issues that impact on the adoption of new technology. Market Research carried out in 1999 indicated widespread support for the newsletter. As a result only minor changes are being planned with the major focus being on quality of content. Like Potato Australia, it is paid for by the potato levy through the HRDC project "Technology transfer of R&D outcomes and communication within the potato industry through *Potato Australia* and *Eyes on Potatoes*" and advertising. An Advertising Manager handles the advertising for both publications. The production and distribution of the publications is supported by an advisory group consisting of state representatives, Editor, Assisitant Editor, Production Assistant and a distributor in each state.
3. During the initial interviews in the project "Coordinating technology transfer in the Australian potato industry" several people indicated the need for a more regular news update (ie. fortnightly, monthly). Since then the idea of setting up an email list server has been raised and discussed by various people. A list server is a computer that sends out messages to a list of email addresses. People can be put on the list by sending a message to the list server with the word subscribe in the message section. In much the same way they can be removed from the list by sending a message to the list server with unsubscribe in the message section. Anybody wanting to send out a message to the people on the list can send the message to the list server and it will automatically be forwarded on. The list server can be controlled by a moderator or open for anybody to use. The advantage of this type of approach is that it is quick, cheap to use and once it has been set up, you have control over whether you are on the list or not. The type of information could be industry news or research updates.

Tools to provide information when YOU need it.

2. Goal - Improve access to industry information

	Strategy	*Action*	*Priority*	*Status*	*Completion date*	*Suggested funds*
1	Produce an Information Directory of people, products and services.	1. Produce first directory 2. Update directory in 2001 3. Update directory in 2003 4. Update directory in 2005	Medium Medium Medium Medium	Underway	Dec 1999 Dec 2001 Dec 2003 Dec 2005	TTM project
2	Develop and maintain a national distribution system that can reach growers, researchers and the service industry.	1. Develop a national system 2. Work with states to upgrade state databases 3. Validate system each year	High High Medium	Completed Underway Ongoing	June 1997 July 2000 December	TTM project
3	Develop an internet service that makes it easier to access industry resources	1. Develop an industry strategy for the internet and allied services 2. Establish an internet site	Medium Medium	Underway	Aug 2000 Dec 2001	72 >100
4	Produce Potato Archives to provide easy access to past research results.	1. Carry out work. 2. Update archives in 2002 3. Update archives in 2004	High Medium Medium	Underway	Dec 2000 Dec 2002 Dec 2004	70 <30 <30

What we are trying to achieve

A good distribution system is critical for getting information out to people and an important starting point in improving access to industry information.

Business people are generally issue driven so they need to be able to access information at the time that they need it, rather than when someone else supplies it. By having tools that provide rapid access to information, businesses can be more efficient and effective in what they do.

The use of different technologies enables user needs to be satisfied more effectively.

Notes

1. The Information Directory contains contact information on technical advisers, publications, technical services, peak industry bodies, groups, statistics and other information useful when managing a potato business. Much of the information is generated from the central mailing database which is maintained by the Technology Transfer Manager. The Information Directory booklet will be updated every second year.
2. The national distribution system consists of seven databases. As a result of a decision made by AUSVEG Potato Group all growers details are maintained by the states. The central database has details of government and service industry people for all of Australia. The databases are maintained by: NSW (NSW Agriculture - Finley), Queensland (QFVG - Brisbane Markets), South Australia (SAFF - Adelaide), Tasmania (TFGA - Launceston), Victoria (AG-Challenge - Warragul) and Western Australia (PGWA - South Perth). The people who are maintaining the grower databases are also the state distributors for potato publications. The Technology Transfer Manager works with the state distributors to ensure the accuracy of the databases. Some states are moving over to a database system that will make the task of updating information much easier.
3. The industry's internet site will provide a 24 hour information service. The focus will be on high value services that require constant updating to be effective or are difficult or not economical to provide through other means. The project "Facilitating the introduction of electronic information products and services to the Australian Potato Industry" provided the background information and a proposal for a site is in the process of being developed. Outcomes of a national workshop on the issue focused on the need to start off small with high quality services that are valued by the industry.
4. One of the difficulties with having so many research projects is keeping up with all the information. Each finished HRDC project has a Final Report for which copies can be purchased from HRDC. The difficulty though is knowing what to purchase and even knowing that the report exists at the time it is needed. So all HRDC Final Reports, Potato Australia articles and Eyes on Potatoes articles are being put onto a CDROM which will become the industry's library of outcomes from the levy backed research and development program. The information will be in internet format and will be able to be searched using a simple search engine. The CDROM will be updated every two years and available for sale from HRDC. If the industry wants to, the information can later be put on the industry's internet site. All publications are now being produced in electronic format which will make it easier and cheaper to update the CDROM. Between updates of the CDROM copies of Final Reports will remain available through HRDC.

If you do not understand it how can you use it.

3. Goal - Improve understanding of industry information

	Strategy	*Action*	*Priority*	*Status*	*Completion date*	*Suggested funds*
1	Facilitate the development of industry books that consolidate knowledge on key topics.	1. Facilitate the development of a seed handling and plant establishment book.	Medium		July 2003	30-100
		2. Facilitate the development of a variety guide.	Medium	Underway	Dec 2002	30-100
		3. Facilitate the development of an irrigation book.	Medium		Dec 2001	30-100
		4. Facilitate the development of a pest and disease book.	High	Underway	July 2000	30-100
		5. Facilitate the development of a guide to Managing the Business.	High		July 2005	30-100
		6. Facilitate the development of Harvesting, handling and storage book.	Medium		July 2004	30-100
2	Facilitate the development of management tools that will save time, money and add value to the business.	1. Pest and disease field identification guide.	High	Underway	July 2000	Existing project
		2. Facilitate the development of tools as the needs are identified.	Medium			Unknown

What are we trying to achieve

Identifying, consolidating and interpreting information on a subject for a business person is time consuming, difficult and often poorly done due to the limited resources they have available, particularly time.

This process though can be done for the industry to save time, protect the knowledge that has been generated in a field, reduce work that might repeat what has already been done, make the information easier to use and provide an important first reference for dealing with issues.

Notes

1. Books on key topics will be designed for use by growers, consultants and agribusiness. These will consolidate information and make it easy for people to use and gain access to the current knowledge. Proposed topic areas include - seed handling and plant establishment; varieties; nutrition; irrigation management; pests and diseases; managing the business; harvesting, handling and storage. In technical areas a literature review will be carried out and published. This will then form the theoretical basis for the book. The content and design will be determined in conjunction with industry. Where possible the books will be published commercially and will be available through commercial book stores. The copyright will be held by HRDC so that the publications can be updated even if the original authors leave the industry. The publications therefore become a resource of the industry. Any royalties to be divided between the equity partners based on initial investment.
2. Management tools are any simple information product that can assist a person to manage their business more easily, effectively or cheapily. For example, the pest and disease identification guide for use in the paddock.

Someone has to make this all work.

4. Goal - Facilitate implementation of Communication strategy

	Strategy	*Action*	*Priority*	*Status*	*Completion date*	*Suggested funds*
1	Employ an Technology Transfer Manager to implement the Communication Plan	1. Facilitate and work on projects to achieve the goals outlined in the Communication Plan.	High	Underway	July 2005	>100
		2. Provide editorial support and prepare articles for industry publications	High	Ongoing		
		3. Work with growers, researchers and the service industry to facilitate networking and better use of the information products.	Medium	Ongoing		
		4. Work with researchers to ensure maximum benefit is gained from the work being funded through the potato levy.	High	Ongoing		
		5. Participate on the APIC R&D Committee as a Technology Transfer (TT) Adviser and provide support TT support to APIC and AUSVEG where required.	High	Ongoing		
		6. Maintain national distribution system.	High	Ongoing		
2	Facilitate networking within the industry (Networking initiatives are included in many of the strategies within the plan)	1. National Conference in July 2000.	Medium	Underway	Aug 2000	27
		2. National Conference in July 2005.	Low		Aug 2005	<30
		3. Investigate and implement cost efficient activities to facilitate networking within the industry.	High		Dec 2001	Unknown

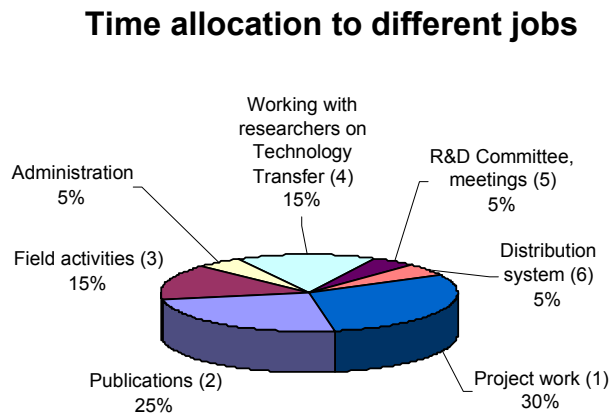
What are we trying to achieve

For a plan to be successful there needs to be someone managing the implementation process. In this case the Technology Transfer Manager.

A two way communication flow between all sectors of the industry is an ideal we strive for to promote better understanding of issues, to develop empathy by participants of others needs and facilitate more effective trade and adoption of new technology.

Notes

1. The Technology Transfer Manager would be responsible for ensuring the Communication Plan is implemented.



2. For an industry to be successful communication between participants is essential. Within this plan a number of strategies tackle networking issues with a strong emphasis on facilitation rather than implementation. In particular, the focus is on providing tools that allow people in regional areas to extend their network into other areas. As systems become established this focus is likely to change over time.

   National Conferences bring together people from all parts of the industry and provides opportunities for developing new contacts, catching up with new developments through formal sessions and informally in discussion, enables people to determine the main issues facing the industry and provides a forum for people to raise issues important to them and have leading specialists comment. For the service industry and researchers the contacts developed at conferences can be invaluable in their work.