

FEBRUARY 2022

Potato – processing

Strategic Investment Plan 2017-2021

PERFORMANCE REPORT



Potato – processing SIP performance report

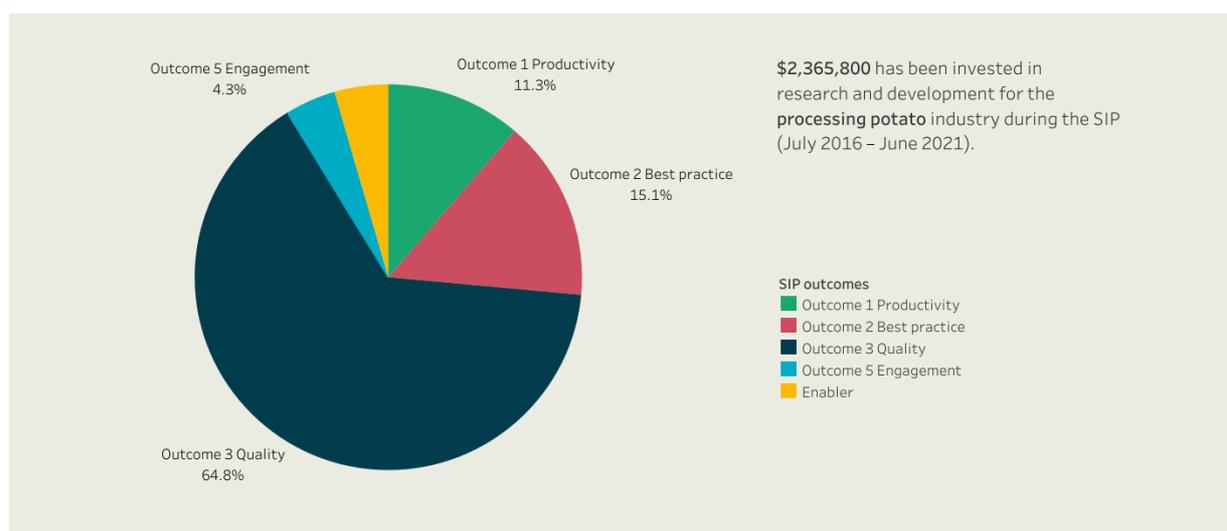
This performance report reviews the performance of levy investments delivered against the potato – processing Strategic Investment Plan (SIP), which was active for the 5-year period from 2016/17 to 2020/21. The SIP was developed to strategically guide research and development (R&D) levy investment in accordance with core industry priorities. The SIP featured five outcome areas, 28 strategies and 24 key performance indicators (KPIs), summarised in Table 1. A total of \$2.4 million was invested into the Potato – Processing Fund over the 5-year period of the SIP. The total investment expenditure allocated against each outcome is provided in Figure 1.

Table 1: Potato – processing SIP outcomes

Outcome	Description	Expenditure allocation*
1. Productivity	Industry has access to the world’s best agronomic information and networks resulting in increased productivity	11.3%
2. Best practice	Growers are serviced by professional agronomists with best practice potato expertise, resulting in improved industry skills and knowledge	15.1%
3. Quality	Losses from pest and disease are reduced, resulting in improved quality and increased marketable yield	64.8%
4. Technology	Precision agriculture and related technologies/systems become standard practice, resulting in reduced cost of production	0.0%
5. Engagement	Collaboration across the supply chain to achieve cultural change has resulted in improved economic sustainability	4.3%

*Total investment \$2.4 million as of June 2021. Balance of expenditure comprises of enabler investments, which includes expenditure to support the delivery of the SIP including advisory meeting and publication costs.

Figure 1: Potato – processing SIP investment expenditure analysis



SIP performance analysis

This performance report reviews the investment achievements delivered within each outcome area that have generated impact for growers. The overall status of each strategic area, informed through an assessment of KPI performance, is also provided. The evaluation status and criteria were:

Strategic area status	Criteria
Achieved	KPIs for this strategic area were met
In progress	Investment delivery remains ongoing
Not achieved	Investment was not prioritised in this strategic area

The results have been informed from evidence compiled through reviewing investment documentation and engagement with project managers. Outcomes generated through the investments are documented and brief case studies of flagship performance and impact for each outcome area are also provided.

Outcome 1: Productivity – Industry has access to the world’s best agronomic information and networks resulting in increased productivity

The potato – processing SIP 2017-2021 recognised that the Australian processing potato industry is a global, trade-exposed industry, and needs become globally competitive to be sustainable. It was therefore seen as critical that the industry had access to the world’s best scientific knowledge.

Summary of strategic area and achievement status:

The strategies in the SIP that were identified to support processing potato productivity are listed below. An achievement status is provided based upon internal evaluation of project performances:

Strategic area	Status
Compile a database of knowledge sources from local and overseas centres of excellence	In progress
Assist our research community to establish/tap into global virtual scientific community on potato research	Not achieved
Identify gaps where the global science does not cover Australian-specific issues or challenges and initiate projects to fill these gaps	Achieved
Introduce annual visiting fellow program	Not achieved

KPI callouts:

- The project *Potato stakeholder needs analysis and extension strategy development* (PT18003) identified gaps in the industries knowledge and skills relating to: potato seed production and storage; crop storage post-harvest (fresh); integrated crop protection through integrated pest management (IPM) cultural practices; identification and management of diseases; crop nutrition and irrigation understanding and management; and technologies including ‘Precision Ag’. Key activities to support delivery against the gaps included industry coordination, knowledge transfer and communications.
- The project *Navigating the wealth of soil health information and identification of opportunities* (PT16003) critically reviewed the relevant soil health literature, identified knowledge gaps, provided direction for research priorities, and provided industry-ready information for extension activities.
- *Program approach for pest and disease potato industry investments* (PT17002) provided support in coordinating the industry’s R&D investments in pest and disease management to develop an integrated program approach and enabled other projects to better share information and coordinate their efforts in research as well as in extending the research findings to potato growers and processors.

Outcome 2: Best practice – Growers are serviced by professional agronomists with best practice potato expertise, resulting in improved industry skills and knowledge

A critical factor in building average yields is to make sure that processing growers have access to the best possible information from around the world. With growers’ main source of information coming from consulting agronomists, it was seen as essential that they have access to the best information.

Summary of strategic area and achievement status:

The strategies in the SIP that were identified to support the use of best practice in processing potato production are listed below. An achievement status is provided based upon internal evaluation of project performances:

Strategic area	Status
Run subject specific professional training workshops for consulting agronomists (consider accreditation scheme)	Achieved
Supply advisors with information and materials that simplify and summarise the science in a format that growers can relate to (so-called ‘muddy boots science’)	Achieved
Establish a social media network facilitated by industry experts and professional advisors within the processing potato community (ensure adequate funding to maintain)	Not achieved
Develop soil management resource kit with practical and affordable tools	Achieved
Develop a calendar of coordinated program of regional field days/trials, specifically for processing growers (in cooperation with industry suppliers)	In progress
Develop Skype- or web-based advisory platforms/tools so growers located in remote areas also have access to visiting experts and any industry training on offer	Not achieved

KPI callouts:

- The industry was supported by the *Potato industry communication program 2016-18* (PT15007) producing hardcopy, online and video material. Data collected through PT15007 indicated that 43% of surveyed growers had implemented some research outcomes as a result of seeing them in industry communications.
- In 2018, the fresh and processing potato industries invested in the *Soil wealth and integrated crop protection – phase 2* (VG16078) initiative, providing growers and industry participants access to soil wealth and IPM events, resources and advice. The provided potato growers with the latest information in soil and pest related areas, in formats that are readily accessible and easy to use, through the Soil Wealth website, workshops, webinars and other resources.
- The investment *Australian potato industry communications and extension program* (PT20000) is developing regional field days, which will engage processing potato growers to support practice change.
- *The Australian potato grower’s manual* (PT19003) is scheduled to deliver a comprehensive online guide to potato production best practice.

Outcome 3: Quality – Losses from pest and disease are reduced, resulting in improved quality and increased marketable yield

The potato – processing SIP 2017-2021 recognised that a large part of the reduced and variable yield problem was due to persistent pests and disease issues, which vary by region and season. It was therefore seen as critical that the industry has adequate responses to those that pose the biggest challenges.

Summary of strategic area and achievement status:

The strategies in the SIP that were identified to support fresh potato yield are listed below. An achievement status is provided based upon internal evaluation of project performances:

Strategic area	Status
Encourage use of PREDICTA® PT and support R&D to extend application to pink rot and Potato cyst nematode (PCN)	Achieved
Establish appropriate, prioritised R&D and extension programs for highly rated pest and diseases.	Achieved
Expand pest trapping program and develop national response plan and biosecurity manual for psyllid and other threats (as per Tasmania)	Achieved
Support wider industry efforts to increase the quality of certified seed throughout the supply chain in order for it to be fit-for-purpose	Achieved
Initiate project with chemical companies to gain a better understanding of chemical efficacy and compatibility of active ingredients	Not achieved
Integrate IPM as a core subject area in the regional field days program	Achieved
Review current soil surveillance systems	Achieved

KPI callouts:

- Ongoing at the end of the SIP, *An IPM extension investment for the potato and onion industries* (MT16009) delivered direct IPM training for growers through workshops, field days at commercial on-farm demonstration sites in each growing region, and also supported IPM adoption through the training of field officers from major processors, major reseller agronomy companies, and independent advisors.
- *Extension of the PreDicta Pt potato diagnostic service* (PT15008) expanded industry knowledge of DNA-based testing that identifies pathogens and helps potato growers manage the risk of soil and seed borne diseases. The project resulted in 51 industry representatives completing the training, with nine agronomists accredited to deliver PreDicta PT across Western Australia, New South Wales and Queensland.
- *Review and update of the National Standard for Certification of Australian Seed Potatoes* (PT15004) reviewed and updated the National Standard for Certification of Australian Seed Potatoes to support reliable high-health seed production in Australia.
- *Surveillance of tomato potato psyllid in the Eastern states and South Australia* (MT16016) conducted surveillance activities designed to bolster the early detection of tomato potato psyllid (TPP). More than 3,000 traps were distributed across Tasmania, Victoria, New South Wales and Queensland, along with trapping protocols and other key information, from which some 6,400 native psyllids were detected, but none were known to feed on potato plants.

Case study: Extension of the PREDICTA® Pt potato diagnostic service (PT15008)

Soil borne diseases are a major cost for the Australian potato industry and are difficult to manage.

The DNA-based testing service, PREDICTA® Pt, was developed through earlier potato levy investments (*Australian Potato Research Program 1 & 2* (PT04016 and PT09023)) to provide growers with a pre-plant risk assessment for black dot, root knot nematode, and powdery scab. Tests were calibrated in South Australia, Victoria and Tasmania.

From 2016 to 2020, PT15008 updated the PREDICTA® PT testing system. Key updates included expansion to cover Western Australia, New South Wales and Queensland growing regions, development of new tests for silver scurf and pink rot, calibration of the tests for potato cyst nematodes, development of peel testing, validation of tests across all major growing regions, inclusion of seed tuber testing, and updating protocols for sample collection and interpretation of results.

Prior to the update in PT15008, use of PREDICTA® Pt was with static around 200-250 samples per year, with samples mostly from potato seed and processing producers in Tasmania, South Australia and Victoria. As a result of the updating of the service, sample numbers doubled to 400-500 samples per year. In addition, through five training workshops, an extra 51 agronomists were accredited to deliver PREDICTA® Pt, with nine agronomists accredited in Western Australia, New South Wales and Queensland for the first time.

Outcome 4: Technology – Precision agriculture and related technologies/systems become standard practice, resulting in reduced cost of production

Precision agriculture and other technologies were highlighted in the potato – processing SIP 2017-2021 as offering the potential to improve efficiency and lower overall cost of production.

Summary of strategic area and achievement status:

The strategies in the SIP that were identified to support the development and adoption of new technology in processing potatoes are listed below. An achievement status is provided based upon internal evaluation of project performances:

Strategic area	Status
Run regional 'future farming' workshops as part of proposed extension projects	Not achieved
Ensure industry is engaged with other Hort Innovation precision agriculture programs such as robotics at the University of Sydney	Not achieved
Identify blockers to commercial adoption of precision agricultural systems and other technologies then initiate priority projects in response	Not achieved
Establish a precision agriculture virtual community or information resource for potatoes	Not achieved

This outcome was not prioritised for investment during the 5-year period of the SIP.

Outcome 5: Engagement – Collaboration across the supply chain to achieve cultural change has resulted in improved economic sustainability

The potato – processing SIP 2017-2021 considered the processing potato industry to be arguably the most globally exposed of any horticultural industry, with a long-term sustainability conditional upon being responsive to change and keeping up with world’s best practice. It was deemed essential that all players in the supply chain understand the realities of global competition and the need to take a partnership approach to creating a sustainable industry across environmental, economic and social values.

Summary of strategic area and achievement status:

The strategies in the SIP that were identified to support processing potato industry engagement are listed below. An achievement status is provided based upon internal evaluation of project performances:

Strategic area	Status
Provide scholarships for agribusiness professional development courses	Achieved
Introduce Next Gen program including overseas study, mentoring, internships, basic business skills for growers, scientists and advisors	Not achieved
Initiate project to identify and communicate alternative business models to growers	Not achieved
Initiate and communicate self assessment tool for web-based benchmarking on yield and cost, for example, University of Idaho web-based tool	Not achieved
Build a processing potato specific digital information database	Achieved
Initiate extension program in natural resource management (NRM), best practice land use and sustainability	Not achieved

KPI callouts:

- The project *Potato stakeholder needs analysis and extension strategy development* (PT18003) examined the Australian potato industry’s needs, wants and opportunities around extension and communication activities and developed a proposed integrated approach to deliver them for greater industry engagement.
- The industry was supported by the *Potato industry communication program 2016-18* (PT15007) producing hardcopy, online and video material. Data collected through the program indicated that 43% of surveyed growers had implemented some research outcomes as a result of seeing them in industry communications.
- The ongoing investment *Potato industry communications and extension program* (PT20000) launched *PotatoLink* in June 2021, which summarises key research topics across growing, harvesting, processing and crop protection.