



Australian Government

FARMER'S CASE STUDY INNOVATION GRANT 197

**Project title: Innovative nutrient management for the
Australian potato industry**

Grantee Name: Potatoes South Australia Incorporated

Location: Naracoorte and Robe, South East South Australia

Brief project description (from the funding deed)

The project compared the Diffusive Gradients in Thin Films (DGT) test with commonly used soil Phosphorous (P) tests to investigate if the DGT test was more accurate in predicting potato yield response to applied P fertiliser. This is the first study of its kind in a horticultural crop in Australia and was undertaken due to concerns that P fertiliser was being applied at rates in excess of crop needs.



Farmer details

John Young is involved in both the beef cattle industry and the growing of potatoes in the South East of South Australia. John has been involved in the family farming operation for eight years, working in partnership with his uncle who has been growing potatoes for over 40 years. Together, they grow potatoes on 605 hectares of irrigated country supplying potatoes to McCain Foods (Aust) Pty Ltd and The Smith's Snackfood Company Ltd. The majority of the crop is planted in spring.

Why did you (the farmer) get involved with the project?

John became involved in the project as he saw it as a great opportunity to improve his knowledge and understanding of soil fertility issues. The opportunity to be involved in a project concerning the adoption of new technology was a key driver. "It's great to see something new come along, get involved and learn from it" he said.

What was your involvement in the project

John hosted two trial sites on his property and was involved in a producer meeting to discuss results.

Outcomes:

What changes has the farmer made as a result of the project?

The results from the project helped further John's understanding of soil and plant phosphorus (P) interactions. Traditionally the application of P fertiliser was based more on 'trial and error' than exact science. The calibration of the DGT test for potatoes has enabled John to have much greater confidence in the correct P rate to apply to match both soil type and plant requirements.

What were the benefits to the farm business: (including improved productivity and/or increased farm profitability)?

John now has the knowledge to use the DGT test to calculate appropriate P application rates. This ensures that crops are not over fertilised which can have negative environmental consequences. Additionally, he now knows on which soil types he can safely increase P rates to increase saleable yield; the key to business profitability. It has also provided information on retained soil P levels in paddocks post potato harvest and demonstrated that in many cases, further P applications are not required for paddocks going into a pasture phase.

Where to from here? How will the group or farmer maintain these benefits after the funding period)?

John is very pleased that he became involved in the project. He has found that the website is very useful and believes that it will assist with the ongoing promotion and uptake of the project results by other producers and advisors. The engagement of local consultants and agronomists through the life of the project means that there is now a core group of people who are skilled in the use of the DGT test and the interpretation of results, and who will continue to work with the industry.

What are other benefits or challenges?

The project has created new networks for the producers involved and given them greater access to soil scientists, researchers, agronomists, Government extension staff and each other. The extension of this research across other soil types and specific varietal trials at a national level will greatly assist in the quantification and validation of these initial results and further enhance the critical importance of the application of the DGT test in horticulture/agriculture as a decision-making tool.