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Getting hands dirty for better apples and pears

The Tasmanian Institute of Agriculture (TIA) has commenced an \$800,000 research project to help Australian apple and pear growers stay at the leading edge by better understanding the connection between healthy soils and productive orchards.

The project, *Improved Australian apple and pear orchards soil health and plant nutrition*, is part of the apple and pear industry's Productivity, Irrigation, Pests and Soils (PIPS3) program.

The project is led by TIA Research Fellow, Dr Nigel Swarts, who is well-known by industry for his previous research aimed at enhancing the productivity, profitability, and sustainability of orchards.

"Healthy soils play a critical role in the productivity of orchards through enhanced nutrient availability and resilience to climate variability. Through this project, we are aiming to develop the knowledge to help optimise soil health even further," Dr Swarts said.

"The desired outcome is an apple and pear orchard production system that maximises quality and yield with high nutrient-use efficiency under increasingly variable climates. Findings from this research will be included in a user-friendly web application that will help growers make informed management decisions."

Dr Swarts said Australian apple and pear growers are committed to environmentally sound and sustainable production practices that meet consumer demands and inspire public confidence – this research aims to support that goal.

Tasmania's apple and pear sector makes an important contribution to the State's economy and in 2017-18 had a gross farmgate value of \$46 million¹. As one of Australia's key growing regions for apples and pears, a commercial orchard in the Huon Valley will host a trial site for this project.

"We are grateful for the opportunity to establish a trial site on a commercial orchard in the Huon Valley. This will enable us to undertake a comprehensive analysis of the influence of treatments on changes to soil carbon, the role and function of mycorrhizal fungi and the physiology of tree water relations and crop production," Dr Swarts said.

¹ <https://dpiwce.tas.gov.au/Documents/Agri-Food%20Scorecard%20SNAPSHOT%202017-18.pdf>

Hort Innovation Research and Development Manager Adrian Hunt said the program would build on the success of previous PIPS programs and benefit apple and pear growers across Australia.

“The TIA-led project seeks to provide a step-change to operating more sustainable production systems that proactively integrates management of pests and disease and soil,” he said.

The PIPS3 program is a standout research model as it integrates four collaborative research projects across the whole orchard system. TIA scientists are collaborating on the following projects:

- *Developing smarter and sustainable pear orchards to maximise fruit quality, yield and labour efficiency* (TIA Senior Research Fellow, Dr Sally Bound)
- *Strengthening cultural and biological management of pests and diseases in apple and pear orchards* (TIA Entomologist, Dr Stephen Quarrell)

The project is funded by Hort Innovation using the apple and pear industry levy funds from growers and matching funds from the Australian Government. TIA is a joint venture between the Tasmanian Government and the University of Tasmania.

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and the Tasmanian Government