WESTERN SYDNEY
UNIVERSITY

Hawkesbury Institute
for the Environment

Soil Biology and Genomics Research

RESEARCH THEMES



Research Focus

Soil biology sustains the primary industries that drive the Australian economy, whether dealing with food production, timber harvest, or rehabilitation of mined lands.

Soil biology underpins our efforts towards climate mitigation and adaptation so our research focus is on increasing soil carbon as a means of counteracting greenhouses gas emissions.

Our expertise in soil biology, plant-microbe interactions, biogeochemistry, and soil food webs puts us in a unique position to tackle some of Australia's most important environmental issues in holistic and innovative ways.

RESEARCH ACHIEVEMENTS

Our researchers have developed an impressive portfolio of partnerships with major industry and government collaborators to collectively drive advances in soil health and productivity. The Institute is recognised by our peers as being among the best leaders in Australia and internationally in the areas of soil biology research, with extensive involvement in the Global Soil Biology Initiatives that collaborates worldwide to increase our understanding of applied soil biology.

Our researchers have achieved excellence and are part of prestigious federal grants from the Australian Research Council, Department of Agriculture, Food and Fisheries, and the Grains Research and Development Corporation's Soil Biology Initiative II.

"Complex environmental changes require in-depth understanding of effects on plants, animals and ecosystems..."

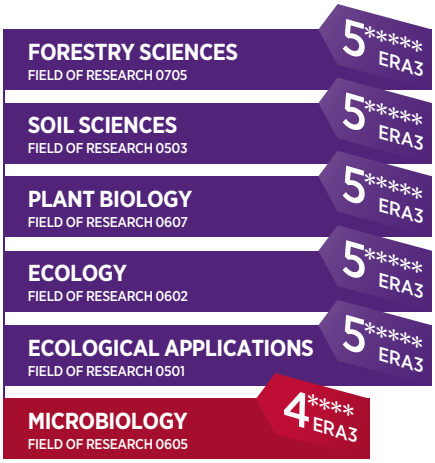
These partners choose to work with our team as the best researchers in soil science from across the world, with access to the finest technology and facilities. Our research is recognised as Well Above World-Standard in the 2015 Excellence in Research Australia, with a ranking of 5 in Soil Sciences.

OUR VISION FOR THE RESEARCH THEME

The real opportunity for advances in productivity across agriculture, ecosystem restoration and mining rehabilitation lies in improving the way we manage the soil as a living entity. Healthy, biologically active soils contribute to increased carbon storage, crop yield and ecosystem stability, whilst allowing reduced nutrient inputs and use of chemicals for pest control.

Crop productivity growth has plateaued in recent decades, and the key to increasing crop yield and quality and plant establishment is to make the most of the soil environment's ability to foster healthy plant growth. This will provide a greater return on our effort than any other practice.

Our vision is to uncover how soil biology can be manipulated to accelerate productivity gains at a time of diminishing returns. In this way, growers, industries and their partners can achieve the very best outcome from available human and natural resources while ensuring the long-term sustainability of the systems on which they depend.



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