ABOUT THIS PROJECT

The long-term monoculture of sugarcane has led to detrimental effects on soil health, resulting in declining cane yields. Modern farming systems including controlled traffic, permanent beds, minimum tillage, legume break crops and crop residue retention have helped to overcome some of the adverse impacts caused by conventional management practices.

However, soil health in the industry generally remains poor and soil carbon levels are low. Root systems below the top few centimetres of soil are in poor condition, with a prevalence of pathogenic organisms such as nematodes.

In order to address these issues, new practices that build on the improved farming system (green cane trash blanket, controlled traffic, fallow cropping and reduced tillage) are being explored. Improvements to soil carbon and biological condition in a profitable sugarcane production system will be a key focus.

The project will assess whether improvements to sugarcane soil condition can be achieved through practical management practices that provide additional organic inputs, different types of organic matter and increased diversity of root systems and associated biology.
Running over five years, and utilising some existing long-term trial sites, this project presents a fantastic opportunity to provide useful and detailed information over time.

The project will investigate specific issues including:

- Farming systems and soil amendments to maximise soil condition;
- Mixed species cover crops based upon functional plant groups;
- Intercropping trials; and
- Investigating soil carbon in a long-term trash blanketing trial.

Over five years the project will undertake research on trial sites in the NSW, Central and Far North regions on both commercial and research farms, some being existing long-term trial sites which will provide valuable soil health data over time.

**WHAT ARE OUTCOMES FOR THE GROWERS?**

The project will deliver:

- New knowledge on species selection and timing of mixed cover crops and inter-crops to improve soil health, reduce plant competition and increase carbon and nitrogen availability from soil sources;
- Greater long-term data on whether tillage between crop cycles affects accumulation of soil Carbon under trash blanket;
- Increased understanding of the production and profitability impacts of adopting these additional management practices to a standard integrated farming system;
- Interactive learning sites for broader Soil Health Program research investigation and grower discussion groups.

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