PROJECT CATALYST

Case Study

Mixed Legume Fallow and EM Mapping to Apply Variable Rates of Gypsum

LANDHOLDER	PCCCF2020BAV20
LOCATION	Stone River
CATCHMENT	Lower Herbert
RAINFALL	1460.4 mm
PROPERTY SIZE	205 ha
ON-GROUND PROVIDER	HCPSL

Project Catalyst is a grower led, sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

BROADER ADOPTION VALIDATION & GROWER SUPPORT

Founded in 2009, the project operates in the Mackay Whitsunday, Burdekin and Wet Tropic regions to deliver valued practice change outcomes and develop methods for industry adoption. Under the Broader Adoption and Grower Support program, professional on-ground service providers assist selected growers to adopt and validate appropriate change practices. Service providers continue to monitor implementation benefits and derived environmental performance improvements. Through targeted extension activities, the program seeks to accelerate the uptake and broader adoption of improved farming practices at local, regional and industry levels.

Mixed legume crop of Ebony cowpea and Ronagi Lablab

Cultivating legume crop in preparations of planting cane

Australian Government | REEF TRUST | Great Barrier Reef Foundation | THE Coca-Cola FOUNDATION | WWF

2021

Mixed Legume Fallow and EM Mapping to Apply Variable Rates of Gypsum

Goal

To grow mixed legumes on all fallow blocks when possible. To EM map and apply variable rates of gypsum to his blocks.

Plant cane germinating after a successful legume crop

Overview

The grower wants to improve soil health across his farms by growing mixed legumes on his fallow block when possible.
By growing mixed legumes the grower will be able to reduce his nitrogen rates in plant cane, improve weed pressure during fallow periods and reduce erosion after serious rain events.
He will also start EM mapping his blocks as they are harvested, to better understand where his major soil constraints are. This allows him to specifically target sodic issues within his blocks with variable rates of gypsum and therefore improve nutrient use efficiency and yields.

Action

- Lime and prepare blocks for planting legumes.
-This season 2019/2020 the grower has planted most of his fallow blocks to mixed legume crops.
-Season 2020/2021 the grower once again has planted most of his fallow blocks to mixed legume crops.
- Season 2020/2021 the grower has started EM mapping blocks after harvest to target sodic issues. He will then soil sample site specific areas of his blocks so he can apply variable rates of gypsum

Outcome

-The grower really noticed a difference to his weed pressure after trying a mixed legume crop, compared to a straight soybean crop and straight cow-pea crop on his farms in Stoneriver. He used the traditional mix of Ebony cow-pea and Rongai Lablab.
He said the different species dominated in the different soil types across his blocks and significantly reduced his weed pressure. He also had some form of legume growing across the whole block instead of exposed patches of soil that where vulnerable to erosion.
- The grower has started EM mapping and soil sampling site specific areas to target sodic issues within his blocks. He has said that sodic issue are a big problem for his area. EM mapping allows him to target and apply variable rates of gypsum by putting the product where it is needed most.

EM mapping blocks after harvest to better understand soil constraints.