2024

Case Study

Lower Rates of N Fertiliser in Older Ratoons & Ameliorant Management

LANDHOLDER	CSLH010031
LOCATION	Wet Belt
CATCHMENT	Lower Herbert
RAINFALL	2126mm
PROPERTY SIZE	89ha
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 bene its 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.

Goal

- Reduce N applications in older ratoons where possible. Explore amelioration practices to manage soil constraints relating to pH and Calcium.

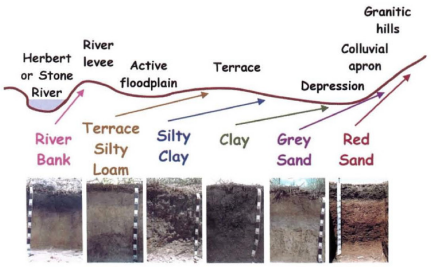
Discussing soil properties for a dry River Sand soil

Overview

- This farm is split up across the Herbert Wet Belt productivity zone. Soils across blocks are highly variable ranging from sandy and red loams, to silty and black organic clays.

- Historically the farm is split into zones based on sufficient and required phosphorus. The grower is interested in exploring where they might be more targeted in their applications and where N reductions might be made for older and/or late ratoons.

- The grower is also keen to explore different liming and amelioration approaches before legumes.



Common Soil Profile for Herbert Wet Belt

Action

- The grower has received a Nutrient Management Plan for 2023 with the recommendation to reduce N rates across several older ratoon blocks. This recommendation should enable immediate cost savings and improve the value of these blocks with reduced potential.

- Blocks requiring amelioration were determined from soil testing. Conditions around the time of amelioration impeded a comparison between agricultural lime and a prilled calcium carbonate product. Instead the grower applied a nitrogen stabiliser across three blocks to explore potential benefits in nitrogen use efficiency. These blocks will be leaf tested to assess the benefit of the Enhanced Efficiency Fertiliser.

Outcome

- The grower received their Nutrient Management Plan with a recommendation to reduce the Nitrogen application in their late ratoons by approximately 10kg/ha to support improved nitrogen use efficiency in this crop class and subsequently improve water quality outcomes.
- Leaf tests were taken in early April. Results will allow grower and their advisor to determine the benefits of EEFs for the crop under seasonal conditions and to further refine rates in the following nutrient management plan.
- In November 2023 the grower hosted a field tour group for the 'Walking the Landscape' workshop facilitated by the Catalyst Team. As part of the workshop the grower described how they use detailed soil maps and soil testing to monitor nutrient availability and determine soil-specific management approaches.

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