2024

# Case Study

## Inter-row Organic Matter and Banded Mill Mud in Combination with Reduced N Fertiliser in Late Cut Ratoons

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|---|---|
| **LANDHOLDER** | CSLH010005 |
| **LOCATION** | Macknade/Yuruga |
| **CATCHMENT** | Lower Herbert |
| **RAINFALL** | Macknade - 2159mm<br>Yuruga - 1861mm |
| **PROPERTY SIZE** | 240ha |
| **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.

A sunflower head alongside sunnhemp in a mixed legume block

Banded mud application across demonstration block

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## Goal

- To reduce nitrogen inputs in late cut ratoons.
- To investigate the value of banded mud at reduced rates.
- To apply wood-chip/organic matter in the inter-row to reduce inorganic chemical runoff and help suppress weed issues.
- To try different mixes of legumes to reduce pathogenic nematodes.

Water sampler located in the inter-row of the banded mud treatment

## Overview

By applying a cheap source of organic matter to the inter-row, the grower believes he can reduce run-off from his blocks. This will also suppress weed growth in the inter-row and reduce herbicide application.
Mill by-products also provide a number of benefits for soil health. Both organic matter and mill mud improve soil structure, allowing the soil to capture and store water, while also supporting soil and root systems to more efficiently.
In addition to inputs, the grower would like to try different mixes of legumes as fallow crops to help control pathogenic nematode populations.

Sampling for nematodes.

## Action

-The grower was unable to source the wood-chip organic matter for applying to the inter-row for the past two season so they will aim to finalise an assured source before trailing this practice.
- During the 2021-2022 fallow planting season the grower planned to compare two different legume mixes across their fallow blocks, and sample for nematodes to assess impacts however due to seed access they ended up planting just one mix across all their fallow blocks. Nematode sampling was undertaken to determine possible impacts and potential control options using the legume mix.
- A demonstration block for compare applications of banded mill mud at reduced rates with standard practice was selected on the 7th October 2022. Soil tests were taken and 75 wet t/ha mud-ash applied to the treatment strips on the 17th of October. The block was fertilized with a standard and reduced N rate on the 15th of November and water samplers installed shortly after on the 21st. Monitoring of the block continues.

## Outcome

- A whole-farm nutrient management plan was developed for this grower with a detailed N & P budget that included a reduction of nitrogen in late-cut ratoons.
- The grower was satisfied with all but a few of the mixed fallow blocks in sandier soils where the legumes were patchy as a result of a spray effect.
Results from sampling the mixed legume zones and the weedy fallow areas where the legume strike had failed showed a differences in nematode populations with higher numbers of plant parasitic root lesion and spiral nematode in the weedy fallow as compared with the mixed legumes. The grower is interested in exploring legumes & molasses to manage nematodes.
- Water samples have been collected for the 2023-24 season and the results can be found in the latest Water Report. Harvest results were also collected in 2023 for the demonstration block.

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