Case Study

Application of Wood Chips to Hold Moisture, Reduce Weed Sprays and Reduce N Fertiliser Rates in Rate Ratoons

LANDHOLDER	CSLH010015
LOCATION	Toobanna
CATCHMENT	Lower Herbert
RAINFALL	2022 - 2057mm 2023 - 1877mm
PROPERTY SIZE	47ha
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.

Block 6 drone map showing poor performing zone

Poor performing area after cut

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2024 Application of Wood Chips to Hold Moisture, Reduce Weed Sprays and Reduce N Fertiliser Rates in Rate Ratoons

Goal

-To assess the benefits of applying wood chip across blocks to retain moisture and reduce weed pressure and the need for spraying.
-To review and update the farm nutrient management plan, considering how reductions in fertiliser application rates might be possible for simultaneously maintaining yields and reducing costs.

Overview

-The grower is finding their row spacing has introduced new weed control challenges. They have access to wood chip and are interested in determining the possible benefits for weed control and moisture retention with the addition of further mulch across their blocks.
- In addition to weed pressure the grower is finding some patchiness and yield variation across blocks. These challenges to yield and the potential underlying constraints will be explored further with plant health and soil mapping to identify any underlying issues and possible approaches to addressing these.

Plant block

EM and Soil Map displaying soil variability readings influenced by moisture & constraints

Action

- Samples of the wood chip will be taken to ensure there are no potential adverse impacts on pH etc. from its use.
- A trial block for the wood chip will be selected and the mulch will be applied once the block is cut.
- The grower will receive a full nutrient management plan for their farm which takes into account the nutrient rate requirements across differing management zones, allowing the grower to be more targeted in their applications.
- As blocks are harvested EM mapping will begin. Strategic soil testing based on the EM maps will then help generate prescription maps for zonal and/or variable rate amelioration.

Outcome

- A block with a poor performing, consistently bare patch was EM mapped to identify potential management zones. Strategic soil sampling based on the EM map helped identify a calcium and magnesium deficiency within the block, however more factors influencing the poor performing zone are being considered.
- The wood chip was sampled and analysed in 2023. It was found to be within the parameters for application in cane. However poor weather conditions meant the grower was unable to get on the block and apply the woodchip. Condition and timing of application remained a challenge in 2023. The grower intends to use woodchip earlier in the season in 2024.
- The grower has worked with their on-ground service provider to refine their phosphorus recommendations under 6ES.

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