PROJECT CATALYST

PRACTICE FACT SHEET

ROLE IN EXPANSION OF MILL MUD SPREADERS

Project Catalyst is a grower-led innovation project in sugar cane that was formed to explore and validate farm management practice change leading to improved water quality for the Great Barrier Reef.

BACKGROUND

Mill mud (AKA filter mud, filter press, or press mud) is a byproduct of the sugar milling process and is considered a rich source of nutrients, in particular nitrogen, phosphate and calcium.

The Mackay-Whitsunday region produces approximately 600,000 tonnes of mill mud and boiler ash per year (wet weight) which is subsequently returned to cane fields in trucks.

By elevating the tipper body and using a paddle in the tail gate, these trucks distribute the mud in a largely ad-hoc manner.

The trucks are driven over the field applying mud at a nominal rate of 150 tonnes of wet mud per hectare, but infield measurements show wide variability in application rates (pictured).

Elevated nutrient concentrations in water run off, particularly during wet weather events are considered a risk when using this method of application in conjunction with the higher rates of application.

Traditional broadcast method of application. Examples of the inconsistency in mud application and the exposure of mud to possible run off is evident.

DEVELOPING A BANDED APPLICATOR

Gerry Deguara's three-row spreader.

Banded mill mud application onto sugar cane was initially developed in the Mackay region by **Gerry Deguara** as part of his project catalyst activities during the 2009-10 season. Gerry developed a three-row, tractor drawn mill mud applicator that applied mill mud and/or boiler ash at an application rate of 50 wet tonnes/ha.

Read more overleaf.

ACCURATE APPLICATION

Gerry has adopted controlled traffic farming with all machinery set at 2m wheel centres and with the assistance of GPS guidance operation, mill mud can be accurately applied between dual row sugarcane (50cm apart) in a 2m row configuration. Tillage operations have been reduced where possible to conserve organic carbon and improve soil health. Incorporating mill mud into a seasonal nutrition program is seen to potentially reduce granular urea inputs and optimise nutrient cycling through enhanced soil health.

This method of application (pictured, right) greatly reduces the risk of nutrient run off due to:

1. Mud being placed in the centre of the row which is elevated
2. No mud distributed onto the wheel tracks where the ground is more likely to have been compacted and is therefore more prone to water run off
3. Mud is incorporated into the soil soon after application when planting or tillage occurs

Mud spread on three rows at accurate application rates using the Deguara applicator.

Above, Mackay Sugar three-row back of truck applicator.

Above, result of application using three-row back of truck applicator.

EXPANSION

Following the success of the Catalyst project, **Mackay Sugar**, in association with **Reef Catchments** Mackay Whitsunday, funded a project that sought to address the issues of mill mud application via the following means:

- **Improve the use of mill mud** by developing a truck spreader enabling mill mud to be spread evenly over the field in a banded application directly onto the growth zone of the plant
- **Develop an applicator t**o spread across three rows of cane in one pass thereby increasing spreading efficiency and lowering cost of application
- **Application rates to be reduced to 50 t/ha** - a reduction of 66% on previous practices

The resultant applicators have been established and fitted to all mud application throughout the Mackay Sugar region. Further expansion of similar methods of this type of application has occurred throughout several milling regions in Queensland.

The ABCD framework of farming practices for sugar cane identifies filter mill mud application at rates of 50 t/ha, banded onto 3 rows as an A class practice. The success of the Catalyst project and the subsequent expansion of using the banded application method has delivered a widespread and rapid uptake of an A class practice to growers within many sugar cane growing regions that is deemed to have a positive effect on water quality.

Catchment Solutions

PROJECT CATALYST

Cover photo: Warren Papas

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