

# Catalyst Project Report

## Sub surface Mill Mud application to reduce applied N

### Grower Information

<b>Grower Name:</b>	Joseph Marano
<b>Entity Name:</b>	Marano Farming
<b>Trial Farm No/Name:</b>	50164
<b>Mill Area:</b>	South Johnstone
<b>Total Farm Area ha:</b>	550ha
<b>No. Years Farming:</b>	30+
<b>Trial Subdistrict:</b>	Moresby
<b>Area under Cane ha:</b>	393ha

### Trial Status:

Continuing

## **Background Information**

**Aim:** Improve soil carbon and reduce applied nitrogen to our sugarcane crops

### **Background: (Rationale for why this might work)**

Want to know if it is better for longevity of the response to apply mill mud/mill ash/compost on top of the stool or below the soil surface in very low organic carbon soils.

Currently at the end of the crop cycle we fully cultivate blocks to incorporate mill by-products. If we could apply these products at a depth of 400mm prior to planting we would be able to accurately determine the rate applied as well as implement a zonal tillage farming system.

Application rates will be determined from our detailed nutrient management plan based on soil type, soil test results and block history for all plant blocks to increase organic carbon levels as well as provide valuable nutrients such as Nitrogen, Phosphorous, Potassium, Calcium, Magnesium and Silicon.

By applying rates around 50 wet tonnes of product below the soil surface we will reduce nitrogen rates by eliminating top dressing of plant cane and reduce ratoon applications in subsequent crops.

### **Potential Water Quality Benefit:**

This project will lead to water quality benefits by incorporating slow release mill by-products into our farming system as a substitute for high analysis synthetic fertiliser. We currently farm almost 400 hectares on soil with very low organic carbon levels. We have shown that by adding mill mud, mill ash or compost to our soil prior to planting we can reduce our applied fertiliser as well as produce a high yielding crop with very good nitrogen use efficiency values

### **Expected Outcome of Trial:**

Increased soil organic carbon, reduced application rates of bagged nitrogen; improved crop yields and ratoonability

### **Service provider contact:**

Innisfail District Cane Growers Organisation

### **Where did this idea come from:**

Previous work Joe has done on his farm

Industry Advisory staff

Trial work done in other districts

<b>Plan - Project Activities</b>	<b>Date : (mth/year to be undertaken)</b>	<b>Activities :(breakdown of each activity for each stage)</b>
<b>Stage 1</b>	<b>April 2018</b>	Plan trial design and location 3 reps x 3 treatments Soil sample fallow Apply mill byproduct and bedform
<b>Stage 2</b>	<b>August 2018</b>	23/8/18 - Plant block and fertiliser according to NMP Planted with 370kg/ha CB88904.
<b>Stage 3</b>	<b>August 2019</b>	Harvest and sample the trial
<b>Stage 4</b>	<b>October 2019</b>	Fertiliser ratoons
<b>Stage 5</b>	<b>August 2020</b>	Harvest trial
<b>Stage 6</b>	<b>2020/2021</b>	Fertilise and harvest trail ratoons Soil sample at end of crop cycle for OC measurement

## Project Trial site details

<b>Trial Crop:</b>	Sugarcane
<b>Variety: Rat/Plt:</b>	Plant
<b>Trial Block No/Name:</b>	2
<b>Trial Block Size Ha:</b>	
<b>Trial Block Position (GPS):</b>	<a href="#">-17.616689, 146.078206</a>
<b>Soil Type:</b>	Brosnan

### Block History, Trial Design:

T1- R1	T2 – R1	T3 – R1	T2 – R2	T3 – R2	T1 – R2	T3 – R3	T1 – R3	T2 – R3
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**Treatments:**

- T1 – No Mill Mud
  - T2 – Sub Surface banded Mill Mud
  - T3 – Surface Banded Mill Mud
- Three 6 row replicates

## Results:

## Conclusions and comments

**Advantages of this Practice Change:**

**Disadvantages of this Practice Change:**

**Will you be using this practice in the future:**

**% of farm you would be confident to use this practice :**