

Project Catalyst Report

Sub-surface Mill Mud application and reduced

Grower Information

| | |
|----------------------------|--------------------|
| Grower Name: | Chris McClelland |
| Entity Name: | CJ & LB McClelland |
| Trial Farm No/Name: | 5767 |
| Mill Area: | Mossman |
| Total Farm Area ha: | 180.01 |
| No. Years Farming: | 25+ |
| Trial Subdistrict: | South |
| Area under Cane ha: | 153.66 |

Trial Status

Continuing

Background Information

Aim:

The aim is to trial whether applying mill mud subsurface has benefits to productivity and also water quality benefits. We will also be looking at the logistics of how this practice could work in a practical sense.

Background: (Rationale for why this might work)

Usual application of mill mud previously applied as broadcast and now as a zonal application, looking at taking this a step further placing the mud right where the growing plant can take up the nutrients. Often the benefits are not to the crop when the mud is applied but more benefit to the subsequent ratoons.

Potential Water Quality Benefit:

The potential water quality benefit comes from reduced losses from the mill mud itself by being underground and also we will be looking at lower rates of fertiliser.

Expected Outcome of Trial:

It is expected that the mill mud subsurface will yield better than no mill mud even with the lowered fertiliser rates.

Service provider contact:

Mossman Ag Services

Where did this idea come from:

Mossman Ag Services agronomy staff

| Plan - Project Activities | Date : (mth/year to be undertaken) | Activities :(breakdown of each activity for each stage) |
|----------------------------------|---|--|
| Stage 1 | Sept 2016 | Plan out trial, rates of fertiliser to be used. Confirm site is appropriate. Install field equipment (equipment purchases to align with project application). Seek agronomic advice for trial design. Develop workplan for trials. Soil and product testing (if applicable). Set up trial sites. |
| Stage 2 | Nov 2016 | Mark out trial site and form beds. |
| Stage 3 | Nov 2016 | Plant legumes |
| Stage 4 | July 2017 | Mark out rows, apply mud subsurface. Plant to cane. And topdress with appropriate fertiliser rates. |
| Stage 5 | July 2018 | Harvest Trial keeping records of strips cut, bin numbers in order to get bin weights and CCS samples from the mill. Site Access. Progress report. |
| Stage 6 | July 2019 | Harvest Trial keeping records of strips cut, bin numbers in order to get bin weights and CCS samples from the mill. Site Access. Progress report. |
| Stage 7 | July 2020 | Harvest Trial keeping records of strips cut, bin numbers in order to get bin weights and CCS samples from the mill. Site Access. Progress report. |
| Stage 8 | July 2021 | Harvest Trial keeping records of strips cut, bin numbers in order to get bin weights and CCS samples from the mill. Site Access. Progress report. |

Project Trial site details

| | |
|--|------------------------|
| Trial Crop: | Cane |
| Variety: Rat/Plt: | Q208 |
| Trial Block No/Name: | 10.1 |
| Trial Block Size Ha: | 3.26 |
| Trial Block Position (GPS): | -16.501135, 145.435689 |
| Soil Type: | Clifton |

Block History, Trial Design:

| | Treatment | N rate | Rows |
|--------------|-----------|---------|------|
| Rep 1 | No Mud | 6ES | 3 |
| | No Mud | 75% 6ES | 3 |
| | Mud | 6ES | 3 |
| | Mud | 75% 6ES | 3 |
| Rep 2 | No Mud | 6ES | 3 |
| | No Mud | 75% 6ES | 3 |
| | Mud | 6ES | 3 |
| | Mud | 75% 6ES | 3 |
| Rep 3 | No Mud | 6ES | 3 |
| | No Mud | 75% 6ES | 3 |
| | Mud | 6ES | 3 |
| | Mud | 75% 6ES | 3 |

Treatments:
T1: no mud, 6ES fert rate
T2: no mud, 75% 6ES fert rate
T3: mud, 6ES fert rate
T4: mud, 75% 6ES fert rate

Results:

| | | | CCS | t/ha | ts/ha |
|----|--------|---------|------|-------|-------|
| T1 | No Mud | 6ES | 15.5 | 87.7 | 13.6 |
| T2 | No Mud | 75% 6ES | 14.7 | 85.3 | 12.5 |
| T3 | Mud | 6ES | 14.5 | 91.7 | 13.3 |
| T4 | Mud | 75% 6ES | 13.7 | 100.5 | 13.8 |

Conclusions and comments

The results of the first plant harvest show minimal differences between the treatments, the end tonnes of sugar per hectare, it is far too early to draw any meaningful conclusions.

Advantages of this Practice Change:

The advantages may be seen in subsequent harvests, at this stage there would be no productivity or profit advantage of this practice change, it is too early to draw conclusions.

Disadvantages of this Practice Change:

Currently has shown to be a more costly practice, but it is too early to draw a conclusion.

Will you be using this practice in the future:

If results show a benefit and we adapt the system to a more streamlined application of the mud then yes.

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

Possibly in the future all blocks that receive mud prior to planting.