Catalyst Project Report

Early vs. Late Plant with minimum and Zero Tillage Ground Preparation.

Grower Information	
Grower Name:	Adrian Darveniza
Entity Name:	South Johnstone Farming
Trial Farm No/Name:	08555
Mill Area:	South Johnstone
Total Farm Area ha:	266
No. Years Farming:	10
Trial Subdistrict:	South Johnstone
Area under Cane ha:	231

Trial Status
Continuing

Background Information

Aim: Measure difference between early and late plant

Background: (Rationale for why this might work)
In the wet tropics disturbed soil represents a great risk for soil erosion in our paddocks and as a result not many farmers will early plant due to the need for cultivation prior to planting. We feel that this is limiting our yields as late plant only allows for a 12month crop at best.
Want to compare the benefits of **Zero and Minimum till early plant** versus **Minimum Tillage late plant**. Most trial work has been done on fallow versus replant but not so much on the timing of planting and would like to know the benefits on productivity and water quality from early plant.

Potential Water Quality Benefit:
Reduced risk of sediment loss in cane planted during May with zero cultivation versus August plant after full or zonal cultivation

Expected Outcome of Trial:
Improved yield in early plant compared to late plant.

Service provider contact:
IDCGO Peter Becke 0436678800

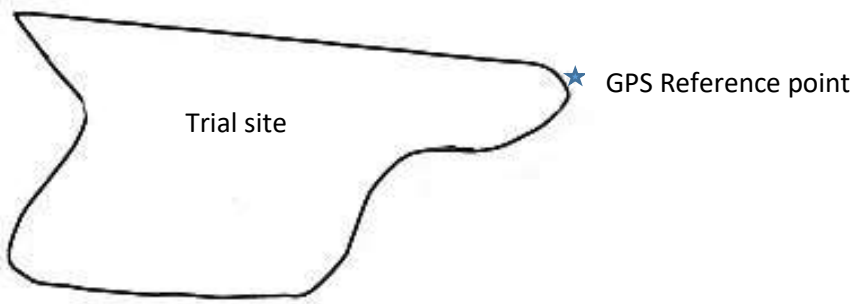
Where did this idea come from:
Own observations over the years of trying to change row spacing and adopt more efficient farming practices. Local advisory staff have been helpful along with projects and staff at Johnstone River Catchment Mangement Association.

Plan - Project Activities	**Date : (mth/year to be undertaken)**	**Activities :(breakdown of each activity for each stage)**
Stage 1	**Dec 2017/Jan 2018**	Plan trial design and location 3 reps x 2 treatments Plant legume fallow
Stage 2	**May 2018**	15-16/5/18 – Early Plant zero & Minnimal tillage
Stage 3	**July 2018**	19/7/18 – Tiller counts early plant
Stage 4	**August 2018**	29/8/18 - Late Plant minimal tillage
Stage 5	**October 2018**	29/10/18 – Late Plant Tiller count
Stage6	**January 2019**	22/1/19 – Biomass cut Early and Late Plant
Stage 7	**Harvest 2019**	Measure and record trial plot data at harvest
Stage 8	**2019 onwards**	Ratoon, harvest and record trial through crop cycle (4R)

Project Trial site details

Trial Crop:	Sugarcane
Variety: **Rat/Plt:**	Q208 Plant
Trial Block No/Name:	Block 23
Trial Block Size Ha:	7.99ha
Trial Block Position (GPS):	-17.587121, 145.974802
Soil Type:	Pin Gin

Block History, Trial Design:



Trial Design

T1
T3
T2
T1
T2
T4

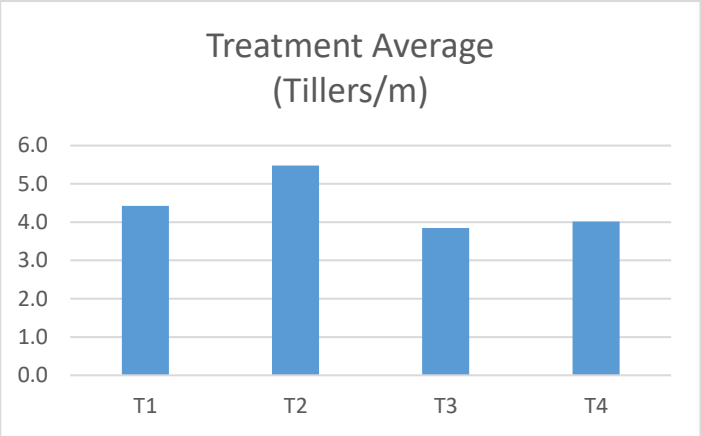
Treatments:

T1- Zero Till Early Plant
T2- Minimum Zonal Till Early Plant
T3- Minimum Zonal Till Early Plant (2 passes)
T4- Minimum Till Late Plant

Results:

Tiller Count 2 months post plant

		Treatment Average (Tillers/m)
T1	Zero Till Early Plant	4.4
T2	Minimum Till Early Plant	5.5
T3	Minimum Till Early Plant (2 Passes)	3.9
T4	Late Plant Minimum Till	4



Biomass cuts January 2019

Samples were collected on 22/1/19 across all treatments by cutting and weighing 1m samples from each treatment replicate, 14 samples in total were collected and weighed.
Samples were collected from both the top and bottom of each treatment to account for the variation from top (higher and drier) and Bottom (lower and wetter).

Averages			
Treatment	Top	Bottom	Total
T1 (Zero till Early Plant)	5.31	11.77	8.54
T2 (Minimum Till)	8.51	8.11	8.31
T3 (Minimum Till 2 passes)	7.38	13.76	10.57
T4 (Minimum Till Late plant)	3.43	5.47	4.45

Conclusions and comments

Advantages of this Practice Change: Early Plant will Hopefully result in Higher yields and will reduce pressure not having to plant and harvest at the same time.
Disadvantages of this Practice Change: Risk of plant failures and erosion during wet season.
Will you be using this practice in the future:
% of farm you would be confident to use this practice :