

Project Catalyst Final Report

Alternate Row Irrigation

Grower Information

Grower Name:	Sam Marano
Entity Name:	Myola Farming Co
Trial Farm No/Name:	BKN-01687A
Mill Area:	Inkerman
Total Farm Area ha:	48
No. Years Farming:	
Trial Subdistrict:	Causeway
Area under Cane ha:	48

Trial Status

- Completed

Background Information

Aim: To compare alternate row irrigation to watering every furrow.

Background: (Rationale for why this might work)

There is anecdotal evidence that irrigating every second row in the Burdekin can reduce water use and still maintain crop yields. There are a number of growers using this technique however there is no science behind the water saving or crop factors surrounding this practice. While there may be yield decreases from irrigating every second row, it is thought that irrigating in this fashion will reduce the amount of water applied and therefore reduce pumping costs and therefore increasing net profitability during the sugarcane crop.

Potential Water Quality Benefit:

The potential water quality benefit can be seen through a likely reduction of irrigation runoff along with a potential for decreased nitrates in the runoff water. This is because there is a reduced amount of water running over areas that have had fertiliser applied to the hill.

Expected Outcome of Trial:

Until measurements have been taken it is impossible to tell which application method will be better for the The expected outcome is that there will be a reduced amount of cane yield in the skip trial, however the economic benefit of the reduced inputs in the crop will outway the loss of yield leading to a profitable outcome.

Service provider contact: Alice Warner (0402924955) alicew@farmacist.com.au

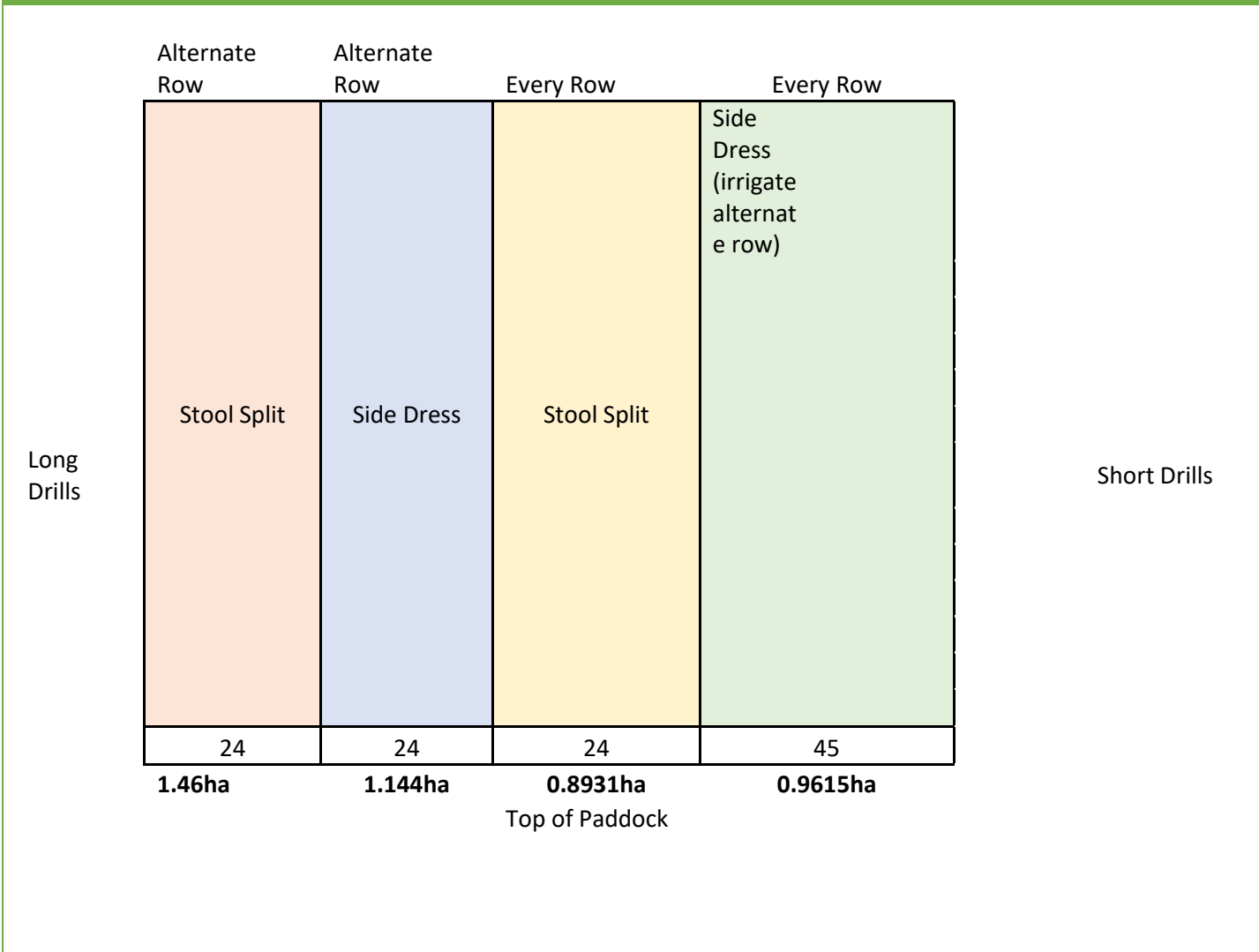
Where did this idea come from: Grower

<u>Plan - Project Activities</u>	Date : (mth/year to be undertaken)	Activities :(breakdown of each activity for each stage)
Stage 1	November 2016	<ul style="list-style-type: none"> • Plexus system is installed in each treatment and data recording will begin.
Stage 2	November/December 2016	<ul style="list-style-type: none"> • Growth measurements and SISCO run will occur.
Stage 3	October 2017	<ul style="list-style-type: none"> • Harvest trial site • Analysis of trial data
Stage 4	November 2017	<ul style="list-style-type: none"> • Economic Analysis of first year trial complete
Stage 5	December 2017	<ul style="list-style-type: none"> • Assess whether installation of trial is beneficial for years 2 & 3

Project Trial site details

Trial Crop:	Sugarcane
Variety: Rat/Plt:	1 st ratoon Q240
Trial Block No/Name:	BKN-01687A-05-01
Trial Block Size Ha:	6.99
Trial Block Position (GPS):	-19.720703° 147.346803°
Soil Type:	RUgbS

Block History, Trial Design:



Treatments:

This trial also incorporates an alternate row irrigation trial which explains the extra treatments.

T1- Alternate Row and Stool split.

T2-Alternate row and side dress

T3- Every row and Stool Splitt

T4- Every Row and Side Dress.

Results:

			tc/ha	CCS	Ts/ha
Alternate row	Stool Splitt	Rep 1	95.98	16.2	15.54876
Alternate row	Stool Splitt	Rep 2	108.18	16.4	17.74152
Alternate row	Side Dress	Rep 1	108.17	15.5	16.76635
Alternate row	Side Dress	Rep 2	104	15.9	16.536
Every Row	Stool Splitt	Rep 1	112.03	16	17.9248
Every Row	Stool Splitt	Rep 2	104.2	16.2	16.8804
Every Row	Side Dress	Rep 1	104.9	16.1	16.8889

The results for the first year are shown above. There was no statistical difference between any of the treatments, including alternate row v every row and stool split v side dress.

Moisture data was also collected throughout the year which showed the replenishing of the profile during irrigation events.



Water quality results were collected from each treatment over 7 irrigations and 5 rainfall events. However this data also showed no statistical difference between the runoff amounts between treatments.

Due to the lack of differences between the treatments the trial was not continued past the first year. This could be due to the relatively low yields for area.

Conclusions and comments

Advantages of this Practice Change:

The advantages of the practice change of swapping to alternate row compared to water every row wasn't found during this trial. While on other sites it has been shown to reduce the amount of water applied and increase the CCS it wasn't the case on this paddock.

Disadvantages of this Practice Change:

The disadvantages of the practice includes potential for longer irrigation run times watering every second row which could potentially lead to higher electricity costs.

Will you be using this practice in the future:

Due to the lack of definitive results on this particular paddock, this practice will not be applied across the farm in future.

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

0%