REEF CATCHMENTS GameChanger

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CASE STUDY

FARMACIST

Australian Government

TRIAL: Reduced N application rate
On late harvested ratoons

LANDHOLDER: Paul Borg

LOCATION: Farleigh, 8 km North of Mackay

CATCHMENT: Lower Pioneer

RAINFALL: 1754 mm

PROPERTY SIZE: 100 ha

LANDUSE: Sugarcane

THE GAMECHANGER PROGRAM IS MANAGED BY **REEF CATCHMENTS** (MACKAY WHITSUNDAY ISAAC) LIMITED NRM GROUP IN THE MACKAY-WHITSUNDAY REGION.

GameChanger...

Innovation in SugarCane

The fast-tracking adoption of 'game changing' sugarcane nutrient and pesticide management practices (GameChanger) project is funded by the Australian Government Reef Programme. GameChanger management practices focus on the use of precision agriculture technologies and advanced planning to provide opportunities for cane farming to be more economically and environmentally sustainable.

GOAL

This project aims to investigate a reduced N application rate on late harvested ratoons.

OVERVIEW

Due to the late harvest, nutrient application is often delayed until just prior to the onset of the wet season, with higher potential for adverse environmental and production outcomes if excessive nitrogen has the potential to move offsite.

The current industry best practice for sugarcane farming is to apply N at the rate recommended under the Six Easy Steps (6ES) programme. However, a late harvest limits the growing time of the cane plant to reach maximum potential (i.e. before it is re-cut the following season). The fertiliser rate for late harvested ratoons may, in some instances, be too high for particular farms.

CURRENT ACTION

A late harvest in December limits the growing time to eight to nine months compared to 12 months if the cane was harvested in September.

Mill breakdowns, cyclones, wet weather and harvester break-downs amongst other things can impact harvester operations. Therefore, this trial investigated whether the 6ES fertiliser guidelines can be further refined to reduce N on late cut ratooning cane.

By reducing the N rate, Paul hoped to improve gross margins by generating a saving in growing costs, without hindering productivity. The fertiliser in this trial (LOS+P and MKY160P) has been applied by a contractor, using a 7 row tractor applicator. A precision rate controller has also been used.

THE BORG FAMILY WANT TO COMPARE THE PROFITABILITY AND PRODUCTIVITY OF THE SIX EASY STEPS (6ES) N RATE WITH A REDUCED N RATE ON LATE HARVESTED RATOONS.

OUTCOMES TO DATE

Results for the trial are shown in Table 2. This table shows that yields remained vitually unchanged for the lower N rate as compared to the control.

Rurther trials will be needed to ensure consistency of results under different seasonal conditions, however results to-date present a positive outcome.

REDUCING N RATES FROM 173 TO 131 UNITS ON LATE CUT CANE MINIMISES THE POTENTIAL FOR N TO BE LOST TO THE ENVIRONMENT.

ECONOMIC ANALYSIS UNDERTAKEN BY DAF STAFF INDICATED GROW COSTS IN T2 WERE 15% LOWER THAN T1 AND THE GROSS MARGINS IN T2 WERE 2.5% HIGHER, INDICATING AN ECONOMIC ADVANTAGE FROM REDUCED N APPLICATION RATES IN THIS TRIAL.

Treatment	Decription
T1 – Control	LOS+P @ 3.7m3/ha Total Nitrogen = 173 units Total Cost/ha = $535.21
T2 – Reduced N rates	MKY160P @ 3.7m3/ha Total Nitrogen = 131 units Total Cost/ha = $447.33

Treatment	t/ha	PRS	ts/ha	% Change Grow	% change GM/ha
T1	71.39	14.65	10.46	0	0
T2	70.14	14.48	10.16	-2%	2.4%

THIS PROJECT IS COORDINATED ON-GROUND BY REEF CATCHMENTS, MADE POSSIBLE THROUGH FUNDING FROM THE AUSTRALIAN GOVERNMENT REEF PROGRAMME.

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