



# Case Study

## Reducing Inorganic Nitrogen (N) Fertiliser Rates on Late Cut Ratoon Paddocks



<b>LANDHOLDER</b>	David Ellwood
<b>LOCATION</b>	Victoria Plains
<b>CATCHMENT</b>	Sandy Creek
<b>RAINFALL</b>	1600mm
<b>PROPERTY SIZE</b>	155ha
<b>ON-GROUND PROVIDER</b>	Farmacist Pty Ltd Author: John Turner

**Project Catalyst** is a grower led, sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

### BROADER ADOPTION VALIDATION & GROWER SUPPORT

Founded in 2009, the project operates in the Mackay Whitsunday, Burdekin and Wet Tropic regions to deliver valued practice change outcomes and develop methods for industry adoption. Under the Broader Adoption and Grower Support program, professional on-ground service providers assist selected growers to adopt and validate appropriate change practices. Service providers continue to monitor implementation benefits and derived environmental performance improvements. Through targeted extension activities, the program seeks to accelerate the uptake and broader adoption of improved farming practices at local, regional and industry levels.



Fig.1 Harvesting trial late September (2020)



Fig.2 David Ellwood harvesting the late cut ratoon trial (2020)



Great Barrier Reef Foundation



## Goal

To determine if yield performance is impacted by a reduction in applied inorganic N fertiliser compared to the Six-Easy-Steps (6ES) recommended rate on late cut ratoons.

## Overview

The last several years has seen the extension of harvest seasons, resulting in crops ratooning closer to the start of wet season. This has seen a reduction in yield performance.

N fertiliser applied to late harvested paddocks at the 6ES recommendations may provide an over-supply to these crops that have a low crop yield potential.

Determining N reduction recommendations is not straight forward as there are many factors that influence crop performance.



Fig.4 David and Tina Ellwood on farm

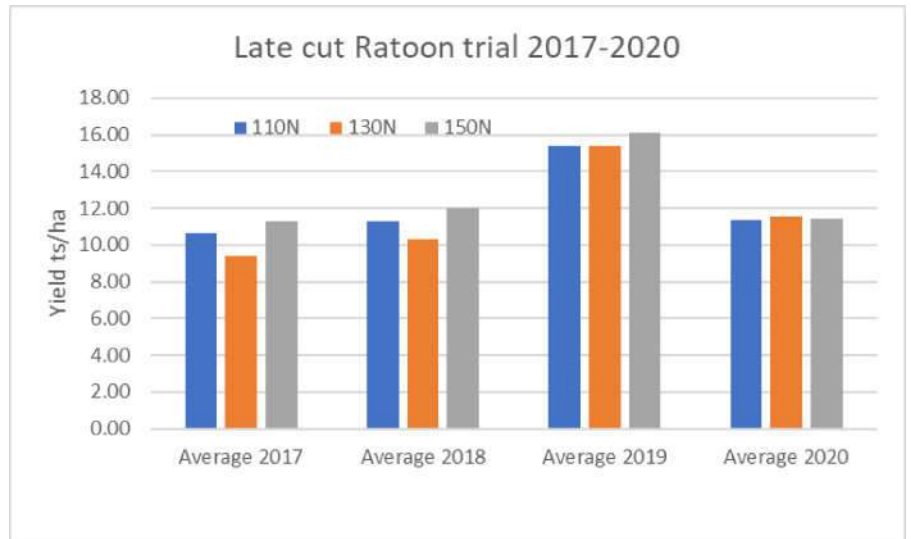


Fig.3 Average yield results for each N treatment 2017-2020

## Action

To determine if lowering N rates on late cut ratoons would have a yield impact, a 4-year trial was conducted on the property of David Ellwood.

3 different rates of N were applied: 150 kgN/ha (6ES), 130kg/ha (6ES-20 kgN/ha) & 110 kg/ha (6ES-40 kgN/ha).

The trial was harvested under typical conditions in each of the 4 years, with each treatment receiving 2-3 irrigations per year of 50-60 mm.

The N was applied as a liquid Dunder on the surface and incorporated by irrigation.

Annual average yield variation between treatments was insignificant (Fig. 3). The trial demonstrated that N rates can be reduced to late cut ratoons. Other factors may also need to be considered under a different scenario.

## Outcome

David has adjusted his N program based on the trial results over the last four years. He is confident to reduce application rates below the 6ES recommendations on late cut paddocks.

The reduced N rates applied to David's paddocks will increase N use efficiency and therefore reduce N run-off risk. This results in improved water quality outcomes for the local catchment and reduced input costs for David.

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