



Case Study

Transitioning Towards Zero Till Plant Cane



LANDHOLDER	Brian Stevens
LOCATION	Ilbilbie
CATCHMENT	Marion Creek
RAINFALL	1500mm
PROPERTY SIZE	550ha
ON-GROUND PROVIDER	Farmacist Pty Ltd Author: Laura Sluggett

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 Brian and two of his grandsons, Cameron and Brendon



Fig.2 Cameron and Brendon with the tractor ready to move irrigators

Goal

To transition from conventional till to zero till via a zonal till management phase.

Overview

Conventional land preparation methods often require more than 5 passes of tillage equipment. High levels of tillage are detrimental to soil health and soil structure, especially on fragile, coastal duplex soils.

Multiple tillage passes create hard pans at depth, typically 40cm-60cm. A rotary hoe pan can also be created by the downward blade force, typically at 20-20cm depth.

The Sugar Cane Yield Decline Joint Venture identified this issue as a key component in limiting yield.

Brian aspires to transition to zero till plant cane to improve soil structure and reduce water and sediment loss during rainfall events.



Fig.4 Results of Brian's 'skip row' planting



Fig.3 Zero tilled plant cane

Action

Over a period, Brian has trialled a number of management practice changes with a goal to transition towards zero till plant cane.

He has trialled 'skip row' planting after seeing the results of other Catalyst Project growers. He also experimented with zero tillage planting that produced mixed results. This was due to hard setting coastal duplex soils common on the farm. Improvements to soil structure will come with time.

The current farming system Brian implements includes:

- (1) 1.8m controlled traffic with GP;
- (2) Zonal, reduced tillage;
- (3) Soybean fallow for ground cover; organic matter and nitrogen benefits.
- (4) Upgraded disc opener planter; and
- (5) Soil EC mapping and targeted zonal soil sampling to better inform his nutrient and soil management decisions.

Outcome

By implementing practice changes Brian has been able to reduce the number of tillage passes and associated input costs.

Water quality sampling undertaken by Farmacist demonstrated a reduction in sediment loss where Brian has trialled minimum tillage and zero tillage plant cane compared to conventional tillage planting.

Brian is pleased with the results so far and will continue to work towards zero till plant cane.

For further information contact Laura Sluggett (Farmacist) Mb. 0429 474 698.