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CASE STUDY

REEF CATCHMENTS

Australian Government | National Landcare Programme

THE OCPS PARTNERSHIP HELPS OVERCOME THE ECONOMIC CHALLENGES AND DEFICIENCIES OF ADOPTING NEW MANAGEMENT.

TRIAL: SKIP ROW
LANDHOLDER: Scott and Maria Simpson
LOCATION: Bloomsbury, around 90km north-west of Mackay

FOCUS ON

- PARTNERSHIP FARMING
- SKIP ROW SYSTEM - INVOLVES PLANTING (DUAL ROW) THE FIRST 1.9M ROW OF CANE AND THEN LEAVING OUT A FALLOW ROW (STILL 1.9M) BEFORE PLANTING THE NEXT
- CONTROLLED TRAFFIC FARMING SYSTEM

BACKGROUND

Scott and Maria Simpson live on a farm near Bloomsbury, around 90km north-west of Mackay. It is bordered by the beautiful O'Connell River, which is home to big barramundi and the rare jungle perch, and flows into Repulse Bay and the Whitsundays. Scott helps to manage around 620 hectares of cane which is a mix of self-owned, family and partnership farms.

IMAGE 1

The partnership is called O'Connell Catchment Precision Services (OCPS) and was formed in the early 2000's bringing together the equipment and services of the Jeppesen, Considine and Simpson farming entities (all involved in Project Catalyst). The partnership helps overcome the economic challenges and deficiencies of adopting new management practices individually.

OCPS settled on a dual row 1.9 metre controlled traffic farming system using 2cm Real Time Kinematic (RTK) satellite navigation GPS guidance. Scott's cane is grown in mounded beds following a legume fallow. "The legumes are sprayed out and we go through with a bed renovator and sometimes we use a trowel implement to smooth the beds to make sure the soil is all the same height for uniform set depth," explained Scott.

Scott also lightly cultivates his wheel tracks as, while the controlled traffic system leaves his cane bed in great shape with excellent infiltration, the compacted wheel tracks can channel water off the blocks.

Nutrient management is done with a prescription nutrient blend made for the property. Application is based on soil tests and Electromagnetic (EM) mapping, and rates are applied accordingly to each paddock based on the identified input needs.

Scott and OCPS have utilised funding to help complete the transition to a GPS controlled traffic system, to help modify high clearance spray equipment. They have purchased a 6-row shielded sprayer unit to change their chemical management strategy, and utilise more knockdowns and a bean planter to plant legumes in fallow blocks.

TRIAL OVERVIEW

While Scott has been able to adopt new management practices that have helped to break the monoculture of cane and aim, in time, to improve soil health, there are still issues around input management that he and OCPS are keen to improve. Areas of improvement will focus on return and reducing the costs of big operations such as planting, fertilising and harvesting by reducing inputs and improving efficiency. This involves planting (dual row) the first 1.9m row of cane and then leaving out one 'fallow' row (still 1.9m) before planting the next one.

Image 1 shows Scott with a skip row set up. The fallow rows are retained for the entire crop cycle and if possible will be planted with a legume crop each year after harvest. Scott says he hopes this system will end the need for a whole block fallow; instead he will plant straight into the skipped rows, and plant legumes into the old cane rows. Simply put, each crop cycle the cane and fallow rows will alternate but the majority of land preparation happens during the first cycle. In the second and subsequent skip row crop cycles, no land preparation is expected before replanting into the fallow rows. Scott has planted soybeans into his skipped area and has now planted sugarcane into those rows in 2015. Physical soil testing from deep cores has been conducted in this rotated area: testing included bulk density, slaking and dispersion.

OUTCOMES TO DATE

Scott established his first plot in 2008 and after a successful harvest added another 5 hectare plot in 2009. He is happy with the trial and hopes that the skip row will yield an extra ratoon in the second cycle as the larger cane requires a low harvester speed which reduces stool damage. Other advantages are a reduction in cultivation required before planting reducing costs and soil losses. It is expected that the legumes in the fallow rows will fix nitrogen in the soil benefiting the current crop and potentially reducing nitrogen required in the plant cane and first ratoon of the second cycle.

With only half the area planted, Scott has noticed a big reduction in farm inputs and improved efficiency in harvesting, nutrient and chemical application. This gives water quality benefits, with only half of the fertiliser and herbicide applied compared to conventional block.

While only 50% of the block is planted the cane grows larger than conventional blocks with reduced competition for nutrients, water and sunlight. Scott feels that there is no significant impact on economic returns to the farming entity. "When the price of fertiliser goes up we do especially well, as the big advantage with the skip is the savings on inputs. This gives us economic and environmental advantage" he said.

The skip row planted cane is easier to harvest as the row is clearly defined, and the harvester speed is slower with a higher pour rate. The slower harvester speed reduces stool damage, and as a result Scott expects to retain skip row blocks for an additional ratoon compared to conventionally planted cane. This will allow one extra year of income from the crop before requiring replanting.

Economic analysis by DAF QLD shows that so long as the yield of the skip row does not drop more than 21% below what can be reasonably expected from a conventional block, Scott will reach break-even.

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