



Case Study

Wider Row Spacing and Variable Rate Application



LANDHOLDER	Ben McClelland
LOCATION	Mossman
CATCHMENT	Mossman
RAINFALL	1500 - 2500 mm
PROPERTY SIZE	37 ha
ON-GROUND PROVIDER	Mossman Ag Services

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.



Ben McClelland's GPS Controlled Fertiliser Applicator



Ben McClelland's Peanut Crop on the Mossman Farm



Great Barrier
Reef Foundation



●●●● Goal

The goal is to continue to work with Ben and support him in his practice improvements and changes. Looking at ways to assist him with Nutrient Management Planning, moving to wider row spacing, mixed species fallowing and also with his purpose built liquid stool splitter fertiliser applicator.



Ben McClelland applying fertiliser with the purpose built applicator

●●●● Overview

Ben McClelland has recently come back to the farm, both Ben and his Father, Chris, have been working on ways to improve farming efficiencies, they are also converting the farm to wider row spacing, while they have recently built a GPS controlled liquid fertiliser applicator. Mixed species fallowing has also taken their interest. In 2020 they started converting their row spacing to 1.8m Through Project Catalyst, they have built connections with other Cane Growers in the Wet Tropics, and other cane growing regions. Ben brought together his own ideas and combined resources to build their own fertiliser applicator, which now allows them to vary and better target their nutrient application.



Peanut Crop on Ben McClelland's farm

●●●● Action

Ben has come to the farm with a keen interest in adopting innovative practices, he has built a 5 row, stool splitter, liquid fertiliser applicator. The applicator is GPS controlled, where fertiliser rates can be varied with the flick of a switch in the cab, and row width can also be adjusted from within the cab of the tractor. The paddocks are mapped and the individual row application can automatically shut on or off with tapered rows. As well as this they have adopted mixed species fallowing, and seeing the benefits this is providing to their soil health and subsequent cane crops. The move to wider row spacing is gradual, and the ability to fertilise with ease has been a big factor in the move to the wider row spacing. Mismatched row spacing on implements can be difficult and time consuming to manage, Ben has worked around this with their applicator. The applicator also has split tanks, which can hold individual nutrients that better target the needs of each block based on soil types and soil sampling.

●●●● Outcome

The 2021 season saw the farm productivity improve with fine tuning of Ben's nutrient management plan. Continuing to maximise nutrient use with the variable rate controller. Unfortunately in 2021 the EM mapping of the blocks did not occur due to resource constraints. Ben is interested in continue to look into options for further refinement and possibly looking at some future Phosphorus related trials. 2021 saw the first peanut crop harvested which was a success. Their fallows are planted to peanuts currently, with one block suffering a major unpredicted flooding event in Early Jan 2022 causing complete loss of the newly planted crop. The fallow crops also allow for control of problem weeds which in turn results in reduced weed pressure for the subsequent cane crop. Ben has been able to move away from reliance on residuals in ratoons, focusing on knockdown treatments only.