



# Case Study

## Introducing Fallow Cropping and Improved Nutrient Use



<b>LANDHOLDER</b>	Richard Papale
<b>LOCATION</b>	Home Hill
<b>CATCHMENT</b>	Burdekin
<b>RAINFALL</b>	948mm
<b>PROPERTY SIZE</b>	115ha
<b>ON-GROUND PROVIDER</b>	BPS

**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.



Cowpea fallow



Nodules on cowpea prior to spraying out.



Great Barrier Reef Foundation



●●●● Goal

To introduce fallow cropping into the farming system which will provide ground cover and increase soil health.

To increase nutrient use efficiency by using fertiliser blends with more nutrients required by the cane.



●●●● Overview

Richard farms 115 hectares in the Burdekin where traditionally after a cane crop cycle is finished he leaves his ground bare until he plants cane again in months to come.

Richard became interested in the potential soil health benefits a fallow crop could bring to his farm with minimal input costs. He wanted a legume that could purely help his soil health improve as he had no intention of harvesting for grain. We decided that cowpea would be his best option due to their drought tolerance.

Cowpea fallow.

●●●● Action

A soil test was taken prior to the fallow crop being planted to establish what nutrients were required for the following cane crop. The Ebony cowpea seeds were broadcast applied at 41kg/ha and left to germinate from rain fed moisture in February 2020. They were grown until early April when they were sprayed out just as flowers were forming. The short growing period was due to Richard wanting to plant cane in April and to prevent the cowpea from producing seeds which could potentially smother the cane if not managed appropriately. Cane was then planted without any fertiliser, it was brought up only with the nutrients provided by the cowpea. The cane crop had a total reduction of 70kg/ha of nitrogen as Richard did not want to sacrifice CCS for tonnes.

Soil tests were obtained for the whole farm spanning over the last 5 years to create a nutrient management plan to optimise his nutrient use.

●●●● Outcome

The cowpea came up consistently across the block without any irrigation inputs. Richard was happy with the results and believes his soil health has improved through the use of cowpeas. He is now implementing this practice across his whole farm to include cowpea in his cane rotation. He will continue to reduce his nitrogen inputs depending on the success of the cowpea cover crop.

A nutrient management plan has been created for the farm to optimise his cane's nutrient requirements rather than using one standard blend across the farm and the cowpeas have been taken into consideration. This will continue to be updated each season.



Plant cane after cowpea fallow

