2021

PROJECT CATALYST

Case Study

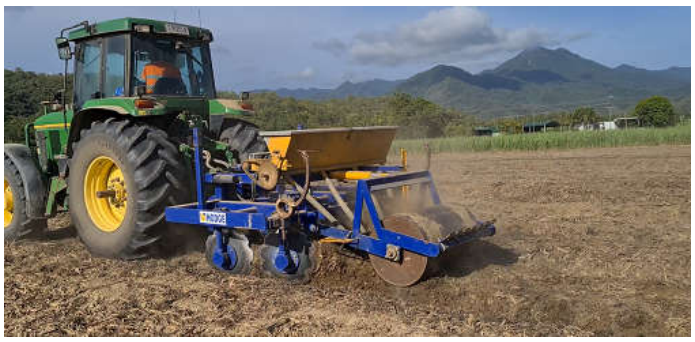
Wider Row Spacing and Mixed Species Fallow

LANDHOLDER	John Padovan
LOCATION	Mossman
CATCHMENT	Mossman
RAINFALL	2000 - 3000 mm
PROPERTY SIZE	611 ha
ON-GROUND PROVIDER	Mossman Ag Services

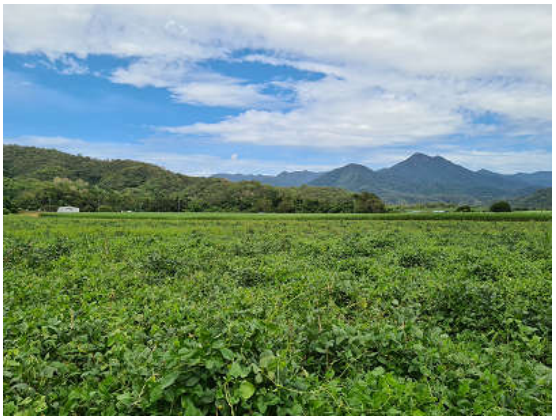
Project Catalyst is a grower led, sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

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 bene its 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.



Planting mixed species fallow at Cassowary in Mossman



Mixed species fallow crop at Cassowary in Mossman

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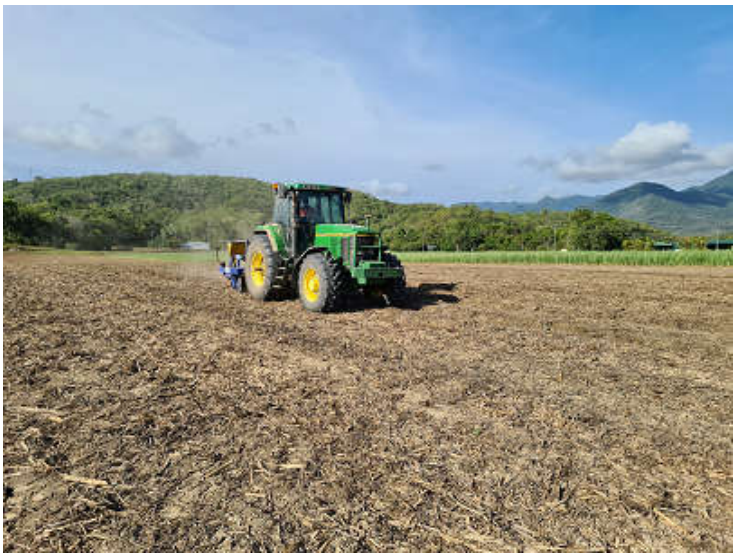
Goal

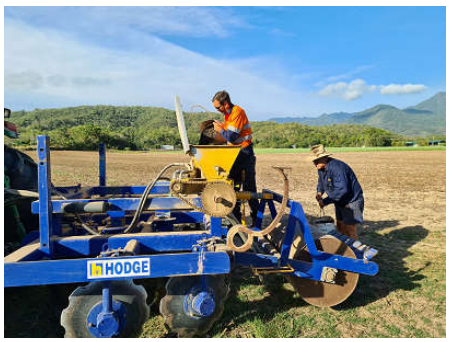
The goal is to continue to work with John and Richard, looking at ways to assist with his mixed species fallow and moving to wider row spacing. Nutrient Management planning and nutrient use efficiency were also a focus in 2021.



Planting mixed species fallow with bed former in Mossman

Overview

Brothers John and Richard have taken an interest in mixed species fallowing, they are also converting their farms wider row spacing as part of their farm plan. Mixed species fallowing has been a interest point of many growers in recent years, due to the trials and demonstrations conducted through Project Catalyst. Many blocks are usually fallowed with a sprayed out trash blanket, or a single legume crop. A mixed species fallow allows the interaction and increased soil microbial biodiversity on the fallow block. It is often restricted by the seed that is available at the time. Wet weather often plays a part in when blocks can be planted. Padovan's have purchased machinery to suit their situation and evolving practices.



John Padovan and Gerard Padovan filling the planter seed box

Action

In 2021 we started planning early to avoid seed supply issues that were encountered in 2020, the plan again was to determine suitable blocks for both direct drill planting and bedforming. The farms range across the Mossman area from the dry area of Mowbray to the wetter Cassowary valley.

The bed former/planter was again use which plants 4 rows of seed into the bed. This is only suitable for some of his land. The ground preparation is very minimal before planting with the bed former - it is bumpered twice, then bed formed and plant in one pass.
Mossman Ag has a direct drill legume planter that is hired out to growers, this service works well.

In 2021 John went through his farm plans to decide which blocks to preform beds and which blocks to direct drill, based on soil types and also potential of for water logging. Mixes were determined for the different blocks. Seed was ordered separately and mixed into a ratio with inoculant as needed when planting.

Outcome

Due to some wet weather over the new year period, the fallow blocks were successfuly planted later than usual in late 2021/early 2022. Weed control has been an issue in some of the mixed species with Balsam pear vine and Convolvulus in particualr. Herbicide options are costly particualr in a green manure cover crop.
Again this year, in the wetter zones, the beds were hilled up and planted with their bedformer/planter. The mix was Cowpeas, Soybeans and Sunflower. In the dryer areas, the direct drill planter was used which plants straight into the old cane row and trash. Here, Cowpea and Sunflowers were mixed.
The fallow crops are progressing well, and germination is good after planting in Dec 2021 and Jan 2022. We plan to take biomass samples to help better determine the nitrogen contribution to the plant crop.

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