



Case Study

Assessing Direct Drill Mixed Species Cover Crops



LANDHOLDER	Damian Wirth
LOCATION	Garradunga
CATCHMENT	Johnstone
RAINFALL	3500 mm
PROPERTY SIZE	67.7 ha
ON-GROUND PROVIDER	CANEGROWERS Innisfail

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.



Direct drilled cover crop 2 weeks after planting



Zonal till cover crop 2 weeks after planting



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●●●● Goal

To improve soil health and productivity through the implementation of direct drill mixed species fallow cropping.



Zonal Till Cover Crop 2 months after planting

●●●● Overview

After attending a Regenerative Cane Farming Forum in Ingham in 2018, Damian decided that he would like to trial mixed species fallow cropping on his farm.

With assistance from the local Project Catalyst service provider, Damian tried zonal till mixed species fallow crops in 2019.

As a result of the learnings from this trial, Damian now wants to assess the performance of direct drilled mixed species cover crops. He believes this will allow him to plant cover crops on more of his farm thanks to a reduction in time to plant the fallow.

Damian's farm covers several soil series, this demonstration is on a Eubenangee soil series.



Eubenangee Soil Profile

●●●● Action

Damian modified his cover crop planter so that it is now able to direct drill seed into the old cane row.

The demonstration fallow block was planted in two sections one zonally cultivated and the other direct drilled into the old cane row.

Following on from the previous project Damian has chosen to plant multiple broad leaf species in his fallow. Damian's fallow crop species mix was:

Leichardt Soybean, Ebony & Meringa Cowpea, Highworth Dolichos & Grey Sunflower planted at a total rate of 39kg/ha.

Cover crop was planted on the 8th and 9th of December 2021.

The growth of the cover crop is being monitored with biomass sampling planned for 3-4 months after planting.

●●●● Outcome

While planting the direct drill cover crop, the planter had a lot of difficulty dealing with the crop residue and needed to be repaired several times.

Both the zonal till and direct drilled cover crops germinated at the same time however at this stage the zonal till cover crop looks to be performing slightly better than the direct drilled. This will be checked with future biomass sampling.

Weed control has been required in both treatments with higher weed pressure in the zonal till section.

At this stage Damian is satisfied with the performance of the direct drilled legumes and is intending on direct drilling all future cover crops.



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