PROJECT CATALYST

Case Study

Multiple Benefits of Introducing Extended Fallow Break Crops to the Farming System

LANDHOLDER	J & C Deguara
LOCATION	Brightley (Central Region)
CATCHMENT	Sandy Creek
RAINFALL	Mean 1413mm, Median 1336mm
PROPERTY SIZE	240ha
ON-GROUND PROVIDER	Farmacist Pty Ltd Author: John Turner

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.

Fig.1 Successful winter maize crop (2020)

Fig.2 Harvested winter maize crop (2020)

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Goal

To increase paddock soil health, yield performance and income diversity by using multiple break crops during an extended fallow.

Fig.3 Summer soybean crop (2019)

Overview

Trials conducted by the industry's step-change research effort, the Sugar Yield Decline Joint Venture, determined that long-term breaks in the monoculture of sugarcane resulted in significant increases in soil health and sugar cane production.

A number of crop types are considered valuable to this whole farm system approach: legumes (ie. cowpea, mungbean,sunn hemp, soybean), grain crops (ie. sorghum, maize) and fibre crops.

Break crops provide an alternative income to the farm business when harvested for market. Legumes can also be used as a valuable source of nitrogen (N).

Fig.4 Deguara's harvesting cane

Action

John Deguara plants a break crop (most often a legume soybean) after sugarcane that is suitable for the wet season.

The winter crop that follows may be any one of maize, sorghum or rice. He consults with Farmacist on the crop that is most suitable for the coming season based upon predicted seasonal conditions and market prices.

Once the winter crop has been harvested, he replants a soybean crop over the wet season.

John returns to sugarcane after three break crops.

Outcome

After the sugarcane crop of 2019 was harvested, soybean was planted early January and harvested late May 2020. The crop yield was 2.5 t/ha with a market food value of $940/t. John's winter maize crop was planted in late August and harvested in late December 2020. The crop yield was over 7 t/ha. A soybean crop was then planted directly after. The grower is aiming to plant sugarcane back into this paddock in 2021.

Additionally, the introduction of legumes has produced an opportunity to reduce N fertiliser rates on the following plant cane. Reducing applied inorganic N lowers the risk of off-farm water quality impacts to local catchments.
John believes extended fallow break crops are important to the farming system and business.
For further information contact John Turner (Farmacist)
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