

CASE STUDY

RYAN JONES



Who

Ryan Jones

Location

Jarvisfield, 12km east of Ayr

Catchment

Plantation Creek

Rainfall

965mm

Property size

485ha sugarcane and 12,000ha grazing

Landuse

Sugarcane production and grazing

Family history

Ryan started working on the family farm after school and has approximately 20 years of experience in the industry. Ryan started his own helicopter business in 2000, providing services of contract herbicide spraying, cattle mustering and pest management.

In 2005 Ryan took over full management of the family's sugarcane and grazing businesses.

Practices

Ryan runs the sugarcane at 1.52m in a single row system. He works on a three ratoon crop cycle and a fallow rotation which he believes maintains his yield average.

The farm's business capacity has been expanded and all the farm's harvesting service is provided in-house.

Ryan said the motivation to make the change was due to past issues with contract harvester operators damaging the crop and affecting future yield. They now have control over the speed of cutting the cane and set up (spacing) of the harvester to suit the farm and definitive improvement of yields has been noted.

In the fallow rotations Ryan is trialling legume crops of soya bean, cowpea, dolichos and navy bean. All legume crops are harvested and used as cattle feed for the family's grazing properties.

All runoff from the farm is caught in a recycle pit system and can be re-used on approximately 90 per cent of the sugarcane farm area.

Chemical practices

Ryan has a block specific weed management plan, taking into account cultivation and weed pressures. A high clearance tractor does the majority of herbicide applications fitted with Irvin legs, shield sprayers and dual herbicide application capability.

GPS guidance and flow rate monitors are fitted to the tractor, which means there is the capability of applying herbicide at a variable rate.

Ryan purchased the shielded sprayer as historically knockdown herbicides were used predominantly in all ratoons. He is now experiencing problematic weed pressure which is believed to be due to weed resistance and he has gone back to using Irvin legs to be able to vary the herbicide program to address the problem.

As the core of Ryan's helicopter business is herbicide application in lodged cane, he is able to use this avenue of broadacre application for his own operation, in particular targeting vine outbreaks.

Nutrient practices

Ryan has been gathering data during fallow rotations via soils testing and EM mapping to start using custom blends based on block specific nutrient requirements under the guidance of local agronomists.



This process has evolved into a whole-farm nutrient plan, where the farm is broken into three zones in which three different granular blends can be applied (nine blends total).

Recommended rates are allocated via soil type, crop class and applied side dressed, subsurface with a trash incorporator.

All blends rate are preset annually into the GPS guidance system and constantly checked during all nutrient applications, calibration is generally required with any blend change.

Motivators for change

Ryan is looking forward to seeing the results from the Enhanced Efficiency Fertiliser Trials as he can see the potential benefits.

If Ryan can incorporate enhanced efficiency fertiliser within his crop rotation plan, there are definite gains in water quality, economics and productivity, although he believes that weather conditions will play a huge part in the success.

Challenge

There is significant cost to using nitrification inhibitors (ENTEC) and controlled release formulations (AGROCOTE) and uncertainty around their reliability.

Further assessment is needed to determine cost versus benefit.

Other major challenges to the trials include soil type, matching nutrient requirement and reducing losses from the farm.

Project involvement

Ryan is hosting one of 12 replicated GameChanger Enhanced Efficiency Fertiliser Trials which are looking at breaking down the barriers to the adoption of enhanced efficiency fertiliser in the Burdekin, through environmental, economic and social monitoring.

Treatments

T1 - Urea @220N
T6 - CR25% @220N
T7 - Entec 220N
T8 - Urea @160N
T9 - CR25% @160N
T10 - Entec @160N

Monitoring

The Enhanced Efficiency Fertiliser Trials were designed by Farmacist to identify production differences between N formulations and ratios based on different soil types, application rates and application timings throughout the year.

Results

Using these more efficient formulations to target delivery of N has the potential to not only increase production, but also reduce N losses, resulting in improved water quality.

Results from the 2015 harvest season indicate no significant difference in productivity between all treatments.

Treatments T8, T9 and T10 (160N) had better nitrogen use efficiencies than T1 (control), T6 and T7 (220N). T8 (Urea 160N) was more cost effective than T6 and T7 in a dry year.

All treatments have been reapplied and will be further investigated in the 2016 harvest season.

Showcasing to broader community

Ryan is a major contributor to the Burdekin sugar industry and brings a vast knowledge base built up from years of working in the local area through his helicopter business.

Ryan is constantly providing input into various water quality, pest management, sugar industry forums, meetings and field days.

Ryan is also a member of NQ Dry Tropics Sugarcane Innovations Programme.



PRACTICES...

Shielded sprayer historically used to apply knockdown herbicides

Who are we?

NQ Dry Tropics is an independent, not-for-profit, non-governmental organisation that supports the Burdekin Dry Tropics community to sustainably manage its land and water. As the leading Natural Resource Management body for the 146,000km² Burdekin Dry Tropics region, NQ Dry Tropics views innovation as crucial to the future of the agriculture sector.



The Programme

NQ Dry Tropics Sustainable Agriculture programme offers information, training and support to assist agricultural producers to use best management practices for resilient landscapes and productive enterprises. Within this programme, the Sugarcane Innovations Programme delivers a number of projects that support innovative farmers with opportunities to trial their practice ideas with the assistance of technical experts. Delivery partners are Farmacist, the Queensland Department of Agriculture and Fisheries and the Burdekin-Bowen Integrated Floodplain Management Advisory Committee.

The Projects

The fast-tracking adoption of game-changing sugarcane nutrient and pesticide management practices (GameChanger) project is funded by the Australian Government Reef Programme. GameChanger management practices focus on using precision agriculture technologies and advanced planning to provide opportunities for cane farming to be more economically and environmentally sustainable.

Project Catalyst is a pioneering partnership funded by the Coca-Cola Foundation through the World Wildlife Fund, which reduces the environmental impact that sugar cane production has on the Great Barrier Reef. The project is grower-led and involves a group of innovative farmers that are developing and testing management practices that improve the quality of the water leaving sugarcane crops. Growers receive support for projects through Reef Programme Water Quality Grants.

The Australian Government Reef Programme is reducing the impacts of agriculture on the Great Barrier Reef through implementing a water quality improvement programme to achieve sustainable agricultural practices in the Burdekin Dry Tropics NRM region. The targeted extension and financial incentives programme aims to improve water quality by focusing on reducing sediment, pesticide and nutrient loss from Burdekin properties.

For more information

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