

# CASE STUDY

# GAVIN JONES



## Who

Gavin and Jane Jones and children Emma and Lachlan

## Location

Jarvisfield, east of Ayr

## Catchment

Kalamia and Sheep Station creeks

## Rainfall

1022mm

## Property size

146ha plus 196ha leased

## Landuse

Sugarcane production

## Family history

Gavin is a fourth generation sugarcane farmer who grew up in the Burdekin. After finishing high school, Gavin started working on the family farm with his father and mother, Allan and Lynn, and has been involved ever since.

Gavin has also worked off farm during this time including cane hauling, contracting planting and as a field officer at Burdekin Productivity Services for five years.

In 2010 Gavin took over management of the 146ha family farm and has expanded the business by leasing 196ha in the Brandon area.

## Practices

Gavin runs the farm on single row at 1.52m centres using a conventional billet planter. Fallow management is

predominantly bare fallow, with ebony cowpea used as a green manure crop in the lighter soils.

The farm is furrow irrigated and there are no catchments or recycle systems in place.

Gavin is in the process of EM mapping the farm with approximately 20 per cent completed, which will be expanded during rotational fallows.

This information is primarily used for strategic gypsum application, allowing better management of sodic and low calcium areas. Soil testing complements the EM mapping with the view of applying it to custom nutrient inputs in the future.

## Chemical practices

Gavin uses a block specific weed management plan and incorporates a specific regime for vine and sorghum infestations on the farm.

The rate and timing of herbicide applications are guided by label, agronomist recommendations and Gavin's personal experience.

He uses both Irvin legs and shielded sprayers for chemical application depending on weed type and pressure, and crop situation.

## Nutrient practices

As Gavin was managing two farms at a substantial distance from each other, it was difficult

to manage fertiliser applications and reduce overuse of fertiliser.

To help address this problem, Gavin successfully applied for funding through the Reef Programme Water Quality Grants in 2014. He purchased a fertiliser rate controller and GPS system which allows constant monitoring and an avenue for record keeping for nutrient practices.

Gavin has adapted his machinery to work with the new equipment. He's now able to reduce his fertiliser inputs by providing more efficient and accurate measurement, reducing waste and runoff into the waterways.

Gavin said: "Without the financial support from the grants, this project would have taken me four years longer to complete."

Fertilising is currently applied at standard blends and rates guided by SIX EASY STEPS recommendations, regular soil testing and yield data.

A granular mix fertiliser is applied subsurface using a stool splitter after the first watering with a side dresser and then if split applications are needed.

Gavin carries out a full calibration of equipment annually and re-calibrates when changing blends between the various types used across the two farms.

### Motivators for change

Gavin's aim is to keep the farm in the family, so he is always will to look at new systems to economically and sustainably manage the farm.

### 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

Gavin is hosting one of 12 GameChanger replicated 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  
T2 - Urea @180N  
T3 - Entec @180N  
T4 - CR25% @180N  
T5 - CR50% @180N

### Monitoring

The Enhanced Nitrogen Efficiency 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 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 any of the treatments. No productivity was lost through reducing rates from 220N to 180N. Treatments T2, T3, T4 and T5 had better nitrogen use efficiencies (NUE) than T1. Treatments T4 and T5 produced higher CCS than T1 and T3 had a better NUE than T4. All treatments have been reapplied and will be further investigated in the 2016 harvest season.

### Showcasing to community

Gavin has shared his work with variable rate gypsum application within block, and is a member of the NQ Dry Tropics Sugarcane Innovations Programme.

### 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 146,000km<sup>2</sup> 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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