

# CASE STUDY

# DENIS POZZEBON



## Who

Denis Pozzebon

## Location

Mt Kelly, 14kms west of Ayr

## Catchment

Sheep Station Creek

## Rainfall

742mm

## Property size

128ha

## Landuse

Sugarcane production

## Family history

Denis Pozzebon is a second generation farmer following in his father Ugo's footsteps who purchased a property and started sugarcane farming in 1957. Denis has since taken over the farm and now has 126ha under production at Airville, near Mt Kelly.

In addition to working on the family farm, Denis' work experience includes contract cane hauling and delivering fuel and oil at the Burdekin Shell depot before taking over full management of the family enterprise.

## Practices

Denis describes his farming practices as mostly B-class in reference to the *Reef Rescue ABCD framework for Sugar Growers - Burdekin Region 2013*.

Denis has adopted a minimum tillage planting system, using a zonal ripper with a single row billet planter at 1.55m spacing on formed bed after green mulch. He cuts 30 per cent of his farm green which is determined by soil type and slope.

## Irrigation practices

Denis uses probes to monitor soil moisture, electro-conductivity and temperature which assists with his irrigation management approach.

He is currently working on developing automated gate valves for his furrow system using water probes placed strategically in the paddock furrow which will feed back to shut off the pumps.

The farm has two recycle pits which catch approximately 90 per cent of farm runoff which is then re-used on approximately 60 per cent of the farm.

Denis said: "I know that I'm now using the water on my farm to the best I can and getting better efficiencies for it."

Denis accessed Reef Water Quality Grants from both Reef Rescue and the Reef Programme through NQ Dry Tropics to make practice changes to reduce nutrient, sediment and pesticide loads leaving his farm.

Practice changes funded included the adoption of permanent beds, improved chemical application, fallow cropping, minimum tillage, variable rate nutrient application, improved irrigation efficiency and runoff management.

## Chemical practices

Denis uses a whole-farm weed management plan specifically targeting vine pressures across the farm.

Denis uses a shielded sprayer linked to a trimble GPS unit and flow rate controller and can apply dual knockdown herbicides, reducing his reliance on residual herbicides. He pays particular attention when planting, to control weeds as this has a flow on effect with potential weed pressures in ratoons.

Label rates and professional recommendations guide herbicide application timing, and Denis undertakes weed management in fallow rotation. All equipment



including an Irvin boom and high clearance tractor are calibrated bi-annually.

Denis also takes advantage of the variable rate technology for nutrient application information (EC, yield maps, elevation and soil tests) to apply different rates within blocks.

### Nutrient practices

Denis uses a block specific nutrient plan which incorporates a variable rate nutrient application system to better match his applied nutrients to plant growth demands and soil type or zones.

He uses three different fertiliser blends and a base rate is broken down and applied in split applications dependant on soil zone. Liquid fertiliser is used in planting; in ratoons a granular mix applied subsurface with a stool splitter and liquid dunder applied on the surface by contractor. All farm machinery uses GPS guidance which allows constant monitoring of rates applied and equipment is fully calibrated annually.

Denis is currently trialling reduced nitrogen application rates with recommended rate, 121 kg/ha and 45 kg/ha plant mix only.

When possible, Denis plants legumes such as cowpea during the fallow which are incorporated into the bed prior to planting to further reduce his inputs delivering cost reductions plus reduced risk of runoff impacts.

### Motivators for change

The property is part of the Sheep Station Creek catchment area which drains a large proportion of the intensive cropping farms in the lower Burdekin. Dennis is passionate about all aspects of sugarcane farming and is actively involved with various water quality monitoring projects operating within the region.

Denis is acutely aware that you need to move with the times and explore new practices. His lifestyle is a big priority and he wants the farm to be a future asset for his family.

### 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

Dennis is hosting one of the 12 Burdekin 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- CR25% @180N

T3- Entec @180N  
T4- Urea @ 180N  
T5- CR50% @180N

### Monitoring

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

### Results

Results from the 2015 harvest season indicate no significant difference in productivity between all treatments. Treatments T2, T3, T4 and T5 (180N) had better nitrogen use efficiencies than T1 (control). All treatments have been reapplied and will be further investigated in the 2016 harvest season.

### Showcasing to broader community

Denis has been involved in Project Catalyst since 2010 and received the Extension Achievement Award at a recent Project Catalyst Forum for presenting his trials at meetings, forums, field days and workshops.

Denis is a proud advocate of the industry and is always willing to share his ideas about progression to sustainability in farming systems.

Through the Smartcane BMP, Denis has benchmarked his farm and is now accredited.



## CHANGE...

Custom machinery  
modification for improved  
chemical application.

### 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

NQ DRY TROPICS | TEL 07 4724 3544 | 12 WILLS STREET TOWNSVILLE CITY | [WWW.NODRYTROPICS.COM.AU](http://WWW.NODRYTROPICS.COM.AU)



Australian Government



Queensland Government