

# Case Study 2: Michael Attard, Eton

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## Bio-Fertiliser Application Trial

### BACKGROUND

Michael Attard farms 100 ha of sugarcane at North Eton. Michael's transition from traditional farming practices occurred when he came to a crossroads. His yields were down, sugar prices were low and his running costs out-weighted his profits. He had a choice to make, either sell the farm because it was no longer financially viable or look at innovative and alternative farming practices. It was at this point in time that Michael began investigating soil health and experimenting with bio-fertilisers, which he brews on-farm.

Michael has been involved in the Reef Programme (formerly Reef Rescued) with Reef Catchments for more than five years and he has a keen interest in improving soil health on his North Eton farm. "We [sugarcane growers] go from generation to generation, and are thinking about the future. Soil health is a big issue – when you improve soil health you can bring your productivity up, your inputs down, and improve water quality."

Through his experimentation with brewing and applying bio-fertilisers, Michael was able to reduce the use of salt based fertilisers. He wanted to further refine his processes and his goal was to completely move away from commercial synthetic fertilisers and chemicals, so Michael sort help from Kym Kruse of RegenAg®.

Michael had met Kym three years earlier at an orchid field day held at the Tablelands. He invited Kym to deliver a three day consultation on his cane farm in early May 2014, covering off on the Latin American organisation Mashtunus' farm-made Bio-Fertilisers. Over the course of the three days, Kym collected base line data in the form of chromatography samples, which provided a picture of the soil and its current condition and function. The overall condition of the soil was poor with limited organic matter, mineral availability or microbial diversity and activity. Most samples also indicated compaction.

### TRIAL OVERVIEW

Together, Michael and Kym made a range of biologically based mineral fertilisers and various other soluble mineral inputs from readily available on-farm and store bought materials. Instead of setting up trial plots, Michael decided to apply the bio-fertilisers and application regime to his entire 100 ha farm.

### His new inputs are as follows:

- 150kg of urea per hectare;
- 1m3 dunda per hectare (to dissolve the urea!);
- 5kg fish hydrolysate with biology;
- 50L fish emulsion;
- Seaweed – 1-2kg per hectare; and
- Humates.

All the new processes were implemented utilising existing on-farm equipment. Michael has set up his own bio-factory using a number of 1000L pods. The pods are then divided into different sections for different brews. He uses a stubble digester consisting of mycorrhizal fungi and cow paunch, which re-introduces microbes back into the soil. To help feed the microbes, Michael makes a soil food brew made of fish emulsion, seaweed, minerals, molasses and humate. He also makes a bio-fertiliser brew, which is made up of cow paunch, molasses, whey powder, yeast and trace minerals. The brew is required to 'cook' for 30 days before it can be applied to the soil.

A reduced application of urea and dunda were first applied in June and a second application was completed after winter in September/October 2014. Bio-Ferments and other mineral preparations are applied every fortnight and/or whenever the ground is worked. A trash blanket is also applied to the surface.

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### Opposite:

Michael displays some of the innovative equipment established for the trial, which is being applied to his entire 100ha farm. With support from Reef Catchments and Kym Kruse of RegenAg®, Michael has set up his own bio-factory, with all new processes implemented utilising existing on-farm equipment.



### RESULTS

Since the on-site three day consultation, RegenAg® has kept in close contact with Michael to ensure quality of any inputs produced and to assist in answering any questions. Michael has continued to make and apply all of the inputs he learnt over the three day period. As a result he has been able to reduce the rate of application of synthetic inputs, which even with the addition of new on-farm produced inputs has greatly reduced his overall input costs.

Michael has been very innovative in equipment design for the manufacture and application of the bio-fertiliser products. Creating a simple and effective system for application with no significant rise in labour cost. The anecdotal evidence thus far on the success of the trial has been nothing but positive. According to the Michael, the cane has grown very well and shows all the signs of a healthy and happy crop.

Michael continues to apply bio-ferments and other mineral preparations fortnightly and will remain doing so until such time as the cane crop is too large to enter the field with spraying equipment.

Monitoring the success of the crop will be done through yield and soil monitoring via traditional soil analysis and soil chroma samples taken by RegenAg®.

