

# Case Study

## North Queensland Banana Farm

**Location:** North Queensland, Australia  
**Case Study Period:** 2015 to present  
**Crop:** Bananas

This case study documents the program, its application and results at a successful banana operation based in North Queensland, Australia. Due to the increasing cost of fertilisers the business decided to investigate soil biology and the benefits that it could bring with regard to nutrient efficiency and yields. The process started in 2015 and the operation decided to take samples during a crop cycle in 2016 to start to determine whether the program had commercial value. Since this trial, the farm has converted 100% of its cropping area to the Bactivate Program.

### The Challenge

- Understand soil characteristics
- Improve paddock yields
- Review additional program benefits
- Confirm commercial benefits.

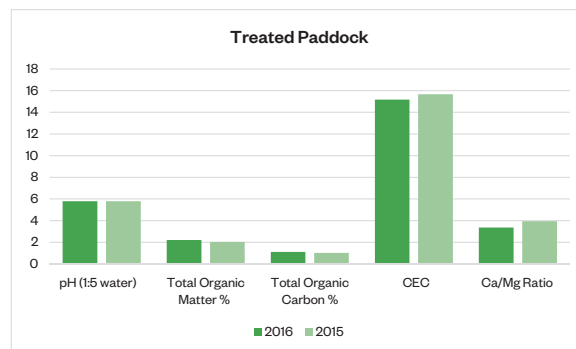
### Products Utilised

- Bactivate Granules
- Bactivate BioBoost
- Bactivate Seaweed

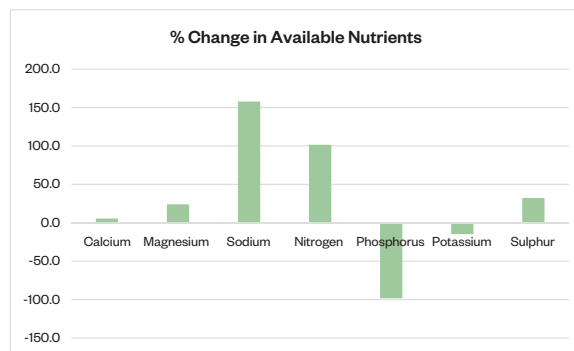
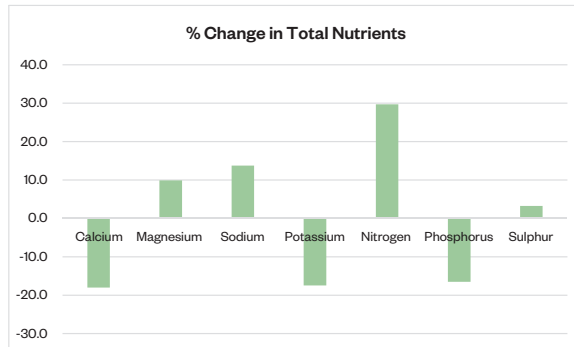
### Program Application:

- 6 applications of Bactivate BioBoost at 3L/ha
- 6 applications of Bactivate Seaweed at 1L/ha
- 2 applications of Bactivate Granules at 250kg/ha

### Soil Test Results

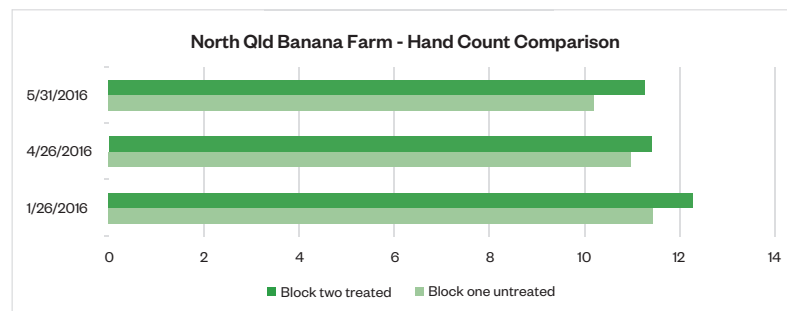


The results for the 12 month period show that the analytes have been pretty consistent. There have been improvements in total organic matter and total organic carbon by approximately 9%. Cation Exchange Capacity has lowered by 3% and Ca/Mg ratio by 13%.



Whilst there have been changes in the total nutrients, it is the percentage change in available nutrients that should be studied. Across all analytes, except phosphorus, there have been improvements to the percentages. Even in the early stages of the trial, this is an indication that the soil biology may be having an effect on the structure of the soil. With regards to the phosphorus levels, the iron levels are elevated and this may be having an undesired effect on phosphorus availability.

### Yield Results



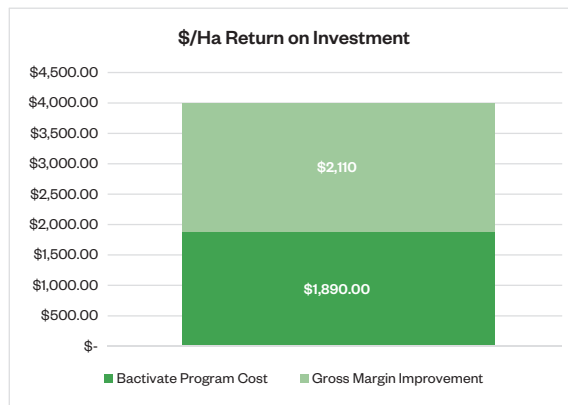
The increase in bunch size in 10 Ha Block 2 treated compared with 10 Ha Block 1 untreated is statistically significant over the 5 month period that data was collected. Over the 129 bunches assessed during this period, the difference in hand counts between untreated and treated was 11.06 to 11.58, an increase of 0.52 hands. A 4.7% increase in production from the observed data in the Bactivate treated Block 2.

At the time of the trial the following assumptions were followed and were true and correct

- Calculations used 1500 bunches/ha
- The weight of 0.52 hand calculated at 2kg
- Therefore, an extra 3000 kg/ha of banana production from the treated area
- 2016 pricing \$20/carton based upon 15kg carton weight

**Based upon this data the treated area produced an extra 200 cartons/ha. This equates to a \$4000 increase in return per hectare.**

The retail cost of the Bactivate program for this paddock equated to \$1890/ha. So the gross margin advantage to the grower was \$2110/ha. Subsequently the program has been adopted throughout the farm.



### Anecdotal Evidence and Results

Evidence since adopting the Bactivate program from the North Queensland Banana Farm has included

- Improved plant regrowth
- Reduced impact from soil pathogens and pests such as Erwinia, Fusarium, and Nematodes

### Future Tests and Actions

Future soil tests are scheduled to continue the monitoring processes in the paddock.

