



Tom McShane with the community NRM agency BBIFMAC, says that applying microbes to improve soil health needs to be considered in relation to the overall soil environment.

Project details

Key Focus Area: 2

Soil health and nutrient management

Project name

Investigating the role of microbes and carbon in soil/plant interactions in Burdekin soils

Project number

GGP068

Principal provider

BBIFMAC Inc.

Project end date

December 2015

Grower project yields lessons for soil health improvements

A Burdekin grower group project is finding that applying microbes to soils is not enough by itself to improve soil health, and that when applying microbes you need to consider the entire soil environment.
By Brad Pfeffer

Tom McShane with BBIFMAC has led the SRA-funded project, and he said that while microbes have been anecdotally yielding positive outcomes for growers, by themselves they are not a "silver bullet".

"You need to have a home for them to live in," Mr McShane said. "You can apply microbes to your soil, but if the conditions are not right for them, then they simply won't function."

The project has conducted both large pot (70 litre) and field trials on Burdekin delta loam soils (Airville) and on Barratta clay soils (Clare) over the last two years.

Treatments included a wide range of microbial brews and ameliorants in different combinations, and these treatments include mill mud, fish oil, kelp, humic acid, soybean rotations, and others.

Mr McShane said the various microbial brews that were applied had so far shown little positive impact on yield, although he cautioned that building soil health was a process that could take many years.

"Soil health requires everything to be right," he said. "If you put microbes on and you have not got your soil moisture, soil mineralogy and other parameters right then you end up achieving very little. The ultimate aim is to increase the organic carbon content in your soils."

He said that there were many steps that farmers could take to improve their soil's health over time.

He said some farmers in the district have had very positive results from long-term application of mill mud and microbes, allowing them to consistently apply less nitrogen but continue to achieve high yields.

He also said other options include break crops, legume rotations, and controlled traffic, while adding it was also important to have a good bed profile to keep the soil aerobic.

SRA has funded several other grower group projects in other regions that have also looked at the role of microbes upon soil health and other inputs such

as biochar. These projects are showing similar results to those found by BBIFMAC in the Burdekin. Some of this work is continuing but there have been initial indications that not all blocks and conditions are conducive to positive results from biological applications. Simply, growers need to provide an environment in which these microbes can survive in order to realise any positive benefits.

Mr McShane said that BBIFMAC has also worked with NQ Dry Tropics on an extension of this project to conduct a range of soils measurements by linking the research with NQ Dry Tropics's soil health program.

This work will also continue and Mr McShane is hopeful that in the future it could lead to a practical measurement of soil health for growers.

"This was a grower driven project and it has delivered some important information for the industry regarding considerations for the application of microbes to improve soil health."