



## What lies beneath?

*It sounds like the catchphrase of a B-Grade horror film, but in terms of sugarcane soil health, it is of the greatest importance. By Dr Anthony Young, Senior Research Fellow, USQ*

For many years the sugar industry has been developing a good understanding of soil nutrition. This knowledge is well-known as the SIX EASY STEPS and has been widely adopted in Best Management Practice programs.

However, what many growers may not understand is that soil nutrition is underpinned by biological processes. As an industry we are only just becoming aware of them.

Dr Graham Stirling has spent over forty years investigating soils, particularly in relation to the Sugar Yield Decline Joint Venture. "Soils represent the most biologically complex ecosystems on Earth. A lot of focus has been on the damaging organisms such as plant parasitic nematodes and fungi, but harnessing the beneficial organisms will be a key driver of sustainability over the next hundred years."

Soil Health Masterclasses will be held in February/March 2018 in the Far North, Burdekin and Southern regions. Visit [www.sugarresearch.com.au](http://www.sugarresearch.com.au) for more information.

While Graham claims only to know 5 percent of what he needs to know about soils, some of what he does know has been translated into the SRA-funded Soil Health Masterclasses.

With a team comprising Andrea Evers (SRA), Sebastien Garcia-Cuenca (SRA), Dr Jay Anderson (University of Queensland) and Dr Anthony Young (University of Southern Queensland), Graham presents material essential to the understanding of soil health.

"Soil carbon is the essential driver of biological diversity within the soil ecosystem," says Graham.

"It is the foundation for the nutrition of the bacteria and fungi that mineralise nutrients for plant use. Although we have depleted significant amounts of the available carbon, by adopting elements of the improved farming system we can help raise it to healthier levels."

Key to the success of the Masterclasses are the personal stories of different growers who have enjoyed significant economic and production benefits by attending to the health of their soils.

These include Ashley Peterson (Hervey Bay), Simon Mattsson (Mackay) and Tony Chapman (Bundaberg). While everything is good in theory, these growers have made practice changes that have boosted their profitability and soil health.

So far, eight Sugarcane Soil Health Masterclasses have been held in Ballina, Ingham, Gordonvale, Tully and Mackay. There are at least six more sessions planned for early in 2018 in the Burdekin, Southern and Northern regions. The Masterclasses are available for all growers and consultants, and have even been attended by people in other industries.

Graham hopes that by presenting information on sugarcane soil health, he can open the door for the Australian sugar industry to improve its sustainability and profitability. After the Masterclasses, participants will be able to better answer the question: What lies beneath?

**Above (left):** Dr Graham Stirling explains what makes your soil tick.

**Above (right):** Participants getting down and dirty at the Soil Health Masterclasses.