

Organic nutrition delivery in extreme conditions

» **Adam Willson** showed one conventional grower how to rectify his soil health problems using traditional and modern organic practices – the results speak for themselves.

Over the last 12 months, consultant and trainer in organic systems Greg Paynter and I have been privileged to run a series of soil-health workshops on behalf of the Biological Farmers of Australia (BFA) across South East and Northern Queensland. Our focus has been simple: to show producers how to regenerate soils using low-input organic systems. The aim is simply to assist growers to gain confidence in adopting systems management changes based on building stable soil humus, using an integration of traditional and modern organic practices.

Our target audience has been conventional growers looking for tangible solutions to their soil-health problems. We had no expectations but were pleasantly surprised when a number of growers wanted to put trials in place. This is the story of one conventional grower who wanted to regenerate his soils.

Sourcing local inputs

Allen Anderson is a dairy producer from Goomeri, 1.5 hours north-west of Gympie, Queensland. The last few years has seen some of the lowest and most unpredictable rainfall in nearly 50 years. Allen's only source of water, from bores, is declining by the day. Water tests indicated that the water contained high levels of sodium and bicarbonates – this pulls soil structure apart, leading to hard, white surface crusts.

Allen's first task was to look for local sources of manure, potassium, calcium and trace elements. His greatest asset was that the organic carbon content of his soil was quite high – up to two per cent – something he rightfully protected and was proud of. He utilised his partially composted feed pad manures, added the other nutrients and incorporated these into the soil. When the soil was moist he applied soil microbiology and sowed the paddock to forage sorghum. He refrained from using his NPK fertiliser; it was a big step into the unknown.

Committing time to the transition

One of the key aspects of rebuilding soils is committing time to the transition. Growers should expect it to take up to three years to

Healthy forage sorghum despite extreme summer temperatures.



rebuild their soils, though signs of success should begin to appear within six months. The budget should fall within current conventional programmes. Allen gave us a six-acre paddock for three years.

Signs of success

One of the first signs of improvement was that the crop was resilient enough to handle the extreme summer temperatures. This is a characteristic of stable soil humus, which holds up to 20 times its weight in water. The

crop was even across the paddock and grew steadily. Other crops in the district were highly stressed, apparent in the number of cuts taken. Most of the district had one cut averaging a poor 17.5t/ha. Allen took two cuts for a total yield of 57.5t/ha. Considering the difficulties experienced over the summer, it was a great result.

Once the crop was harvested, the paddock was worked up with a disc. It was the first time Allen felt the discs sink in fully. The soil was friable, soft under foot and beautifully broken down – typical signs of


humus rich soil. Other areas on the farm were cloddy and hard.

Excellent winter root growth

Another area adjacent to the forage sorghum was sown down to ryegrass in mid-June. The programme was repeated and the ryegrass was sown slightly outside optimum row spacings. Five weeks later we observed some fascinating results. The pasture was even, root development was superb, despite difficult cold conditions, and the grass was sweet when you chewed on it.

Sweeter crops are another characteristic of humus rich soil. Soil temperature dictates how nutrients and organic compounds are absorbed into the roots. Humus rich soils have fewer daily extremes in soil temperature, resulting in optimal nutrient uptake.

Soil health pays! Have a go!

Building stable soil humus is the cornerstone of good farming practice and is essential to rebuilding soils. It is the fastest way to gain confidence with modern organic farming practices and the results can be extraordinary. 

Adam Willson is the director of Soil Systems Australia Pty Ltd. (www.soilsystems.com.au)

Ryegrass grown on humus rich soil showing even growth .



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