



Pasture for Beef – Upper Murray NSW

Enhanced soil structure improved yields

Soil tests

Routine soil tests across two decades have helped guide and provide a clear picture for BioAg’s customer in their transition from a chemical fertiliser program to a balanced biological approach to fertility.

A review of the long-term changes in the soil has shown several improvements, in particular an increase in soil organic matter or soil carbon. Soil organic matter plays a key role in high performing soil.



Scan for more information on Increasing Soil Carbon



Background

A long-term customer for 25 years, this highly successful commercial Angus breeder in the Upper Murray region of NSW has had their fair share of difficult years. The property was initially acquired in a run-down state. Natural season variability and extreme events such as fires on the slopes and higher paddocks, and floods on the flats has made year-on-year assessment difficult.

However, looking at soil test results over the last 20 years provides a clear picture of the benefits achieved. Organic matter has increased more than 1.5 times across various farm sites.

Summary of soil test results for organic matter

Block	Hill	Flats	Bowls
2003 Organic Matter	3.06%	7.18%	3.58%
2023 Organic Matter	6.60%	11.00%	5.80%
Change in Organic Matter	↑ 1.8x / 3.54%	↑ 1.5x / 3.82%	↑ 1.6x / 2.22%
Increase in Carbon T/Ha #	26.7	28.8	16.7
Benefit expressed as Tonnes of CO ₂ / Ha	98	106	56

Based on 58% of organic matter being carbon and sequestration of 10cm in the soil profile being equal to the soil probe samples.

Changes

Given the initial run-down state of the property, the owners set about changing their stocking program from set stocking to rotational grazing, as this helps maintain ground cover and build structure in the soil.

With the seasonal variations and cataclysmic fire and flood events, the owners also realised the importance of working and bending with nature. BioAg developed a long-term soil health program to improve soil fertility and structure, to deliver improved yields and quality, while gradually regenerating and building resilient soils.

Regular soil testing is key to the program. Knowing from soil test results what is and isn't required, ensures money and resources are not wasted.

Our customer applies a bespoke mix of *BioAgPhos*[®], lime and gypsum on a biennial basis, applying to half the farm each year which significantly reduced spreading costs. *BioAgPhos*[®] is a high-grade highly reactive phosphate rock combined with BioAg's natural microbial digesting agent. 100% of the phosphorus is bio-available, not leaching and less susceptible to lock up, making it highly cost-efficient.

When it's hard to find your stock, quadbike and dogs amongst the pasture, you know you're doing something right.

Too much chemical and mechanical intervention can indeed lead to reduced yields at increased cost. However, biological management of soils, will support a healthy and high yielding crop with less need for expensive fixes.

In addition, BioAg's *Soil & Seed*[®] is used as a winter / post winter stimulant to enhance nutrient cycling. Additional trace elements and Dolomite (to increase Magnesium) are applied from time to time as determined by soil test results.

Phosphorus levels improved quickly across the first 2 years of the program. However the most important results have come from ongoing gradual improvement over 20 years to build resilient healthy soils for the long-term.



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