

Langleys Bio-Energetic™ technology

- The Next Generation microbial blend
- for both Conventional and Regenerative Farming Systems

This Case Study -

1. The BioMineral treatment produced 32% more premium grade sweetcorn than the recommended best management practice (NPKMg) and had the highest marketable yield.
2. The BioMineral treatment had between 15 and 30% less reject cobs when compared with the other treatments.
3. BioMineral sweetcorn experienced the same level of pest pressure as the other treatments without requiring any chemical intervention.
4. The BioMineral treatment generated the greatest revenue of all treatments.



Langleys Bio-Energetic Microbes **P.1**

Case Study – Sweetcorn Trial **P.1**

Results and Conclusion **P.2**

Comparing the BioMineral production system with a range of fertiliser strategies in sweetcorn.

Report by S.Brain (Field Capacity) and PJ. Storer (FL Tech)

Aim :

To compare the performance of the BioMineral production system with a range of fertilizer strategies for producing sweetcorn in Carnarvon, Western Australia.

Background:

Sweetcorn is a versatile model plant as research results can serve as a reference point for cereal, vegetable and fodder crops.

A randomised replicated trial was conducted by DPIRD at the Carnarvon Research Facility to investigate the response of sweetcorn to a range of fertiliser strategies.

The BioMineral production system comprised:

- 500 kg/ha of Troforté Cropping Plus fertiliser applied at sowing;
- 300 g/ha of Langleys Bio-energetic™ Microbe Blend injected into the irrigation system at week three.
- 20 l/ha of Troforté liquid Nitrogen injected at week 5.

The other Conventional fertiliser strategies were based on the use of soluble fertilisers injected into the irrigation system and are summarised as follows:

- Low N: reduced Nitrogen rate;
- NP: No Potassium
- NPKMg: recommended BMP (best management practice).

All of these treatments included Gypsum.

The nutrient application rate of each strategy is presented in Table 1.

Randomised Sweetcorn Trial Site



Table 1: Nutrient Application Rates.

Treatment	Nitrogen (kg/ha)	Phosphorus (kg/ha)	Potassium (kg/ha)	Fertiliser Cost (\$/ha)
Biomineral	61	35	23	\$1087
Low N	85	33	21	\$689
NP	150	42	0	\$1086
NPKMg	150	43	120	\$1564

Table 2: Marketable Yields.

Treatment	Grade 1 (t/ha)	Grade 2 (t/ha)	Total (t/ha)
Biomineral	7.63	10.75	18.38
Low N	5.12	11.64	16.76
NP	5.96	11.22	17.18
NPKMg	5.77	12.30	18.07

Table 3: Comparison of Revenue.

Treatment	Grade 1 (\$/ha)	Grade 2 (\$/ha)	Total (\$/ha)
Biomineral	\$ 11,750	\$ 5,764	\$ 17,515
Low N	\$ 7,884	\$ 6,239	\$ 14,124
NP	\$ 9,148	\$ 6,014	\$ 15,161
NPKMg	\$ 8,886	\$ 6,593	\$ 15,479

Summary of Findings:

Despite the wide variation in nutrient application rates, all of the treatments produced similar fresh and dry biomass, cob size and cob weight.

The results of leaf tissue analysis demonstrated that all of treatments provided adequate nutrition indicating that nutrition was not limiting production. It also indicated a high nutrient use efficiency of the Biomineral treatment.

The Biomineral fertilizer cost \$1086/ha which was equivalent to NP, but \$477/ha less than the recommended best management practice (NPKMg), and \$398/ha more than Low N.

As presented in Table 2, the Biomineral treatment produced 32% more Grade 1 cobs when compared with the recommended practice (NPKMg). It also produced the highest overall yield and least Grade 2 and reject cobs.

When the market prices at the time of picking were applied to the yields the Biomineral treatment generated the greatest revenue of all of the treatments (Table 3).

Take Home Message:

- The Biomineral production system using Troforté Cropping Plus combined with Langleys Bio-Energetic™ Microbe blend and Troforté Liquid Nitrogen has the capability to:
 - Adequately fulfill the nutrient requirements of sweetcorn;
 - Produce the highest yield when compared with other fertiliser strategies;
 - Reduce the need for intervention with chemical pesticides;
 - Significantly maximise profitability.