

THE EFFECT OF MAGPRILL ON ACTIVITY AND DIVERSITY OF SOIL MICROORGANISMS

TRIAL PROTOCOL

This trial evaluated the effect of Omya Magprill soil conditioning on soil enzymatic activity and on fungal diversity in topsoil under controlled laboratory conditions. These two parameters are considered indicative of soil health and quality.

Trial partner:	ANDRIOS Institute
Trial location:	Brazil
Trial season:	2021
Trial design:	Controlled laboratory conditions using 50 g of topsoil per treatment
Soil type:	Oxisol (also classified as Dystrophic Latosol)

Treatment number	Treatment description	Application rate (kg/ha)	Comment
1	Untreated	-	Water only
2	Farmer's practice (Ca and Mg oxides)	250	Common dose
3	Omya Magprill	150	Recommended dose

Calcium oxide with MgO – powder product

Ca: 42%
Mg: 18%
CaO equivalent: 101%

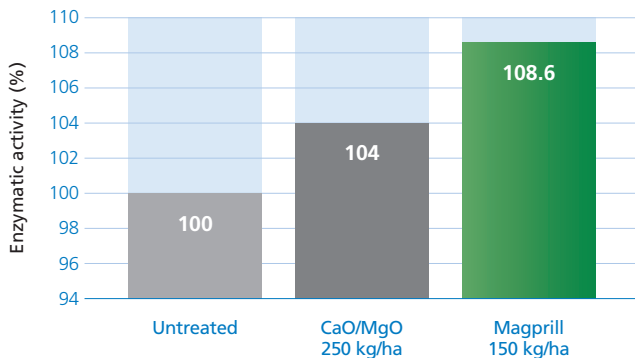
Omya Magprill – granulated product

Ca: 25%
Mg: 9%
CaO equivalent: 56%

RESULTS

Enzymatic activity

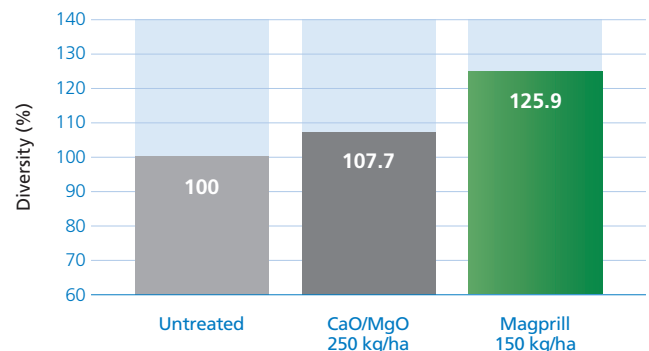
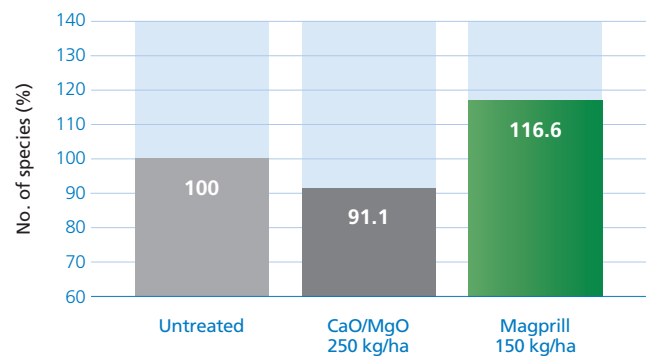
After 30 days' incubation, the application of Omya Magprill increased the activity of the soil microorganisms, demonstrated by the greater production of key enzymes involved in nutrient uptake and decomposition of organic compounds. The Magprill-treated soil showed almost a 9% increase in enzymatic activity compared with the untreated soil and close to 5% more than the farmer practice treatment, although the amount of Magprill used was 40% less.



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Number of fungal species and diversity

The number of fungal species and their diversity are important gauges of soil quality. Soil treated with Omya Magprill showed a significant uplift in both parameters compared with the untreated and farmer practice treated soil.



OMYA MAGPRILL PERFORMANCE IN SUGARCANE

COMPARING OMYA MAGPRILL SOIL CONDITIONING WITH COMMON ALTERNATIVES

TRIAL PROTOCOL

This trial evaluated the efficacy of Omya Magprill as a soil conditioner in sugarcane plantations when compared with the commonly used calcium and magnesium oxides. The products were all applied in-furrow at planting. A full NPK (4-28-8) program of 630 kg/ha was applied to each plot, including an untreated control. Yield was measured for each plot to provide comparisons of yield benefit and return on investment for each product.

Trial partner:	LL Cultivar Group
Trial location:	Municipality of Castilho-SP, Brazil
Trial date:	2019-20 season
Site/soil type:	Field trial, medium textured dystrophic latosol
Starting pH:	5.4
Trial design:	Randomized block design (RBD)
Plot size:	75 m ²
Replications:	4
Application Method:	In-furrow
Crop:	Sugarcane

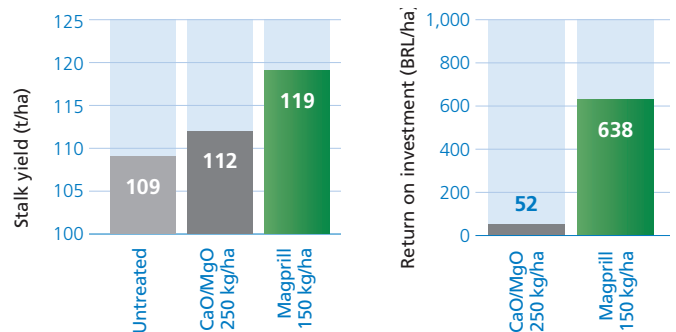
RESULTS

Yield

Magprill delivered the highest yield, with a 10% increase above control and 7% above farmer's practice. Although the CaO/MgO practice has the potential to increase the soil pH quickly, the biological activity and diversity can be hampered leading to an overall lower performance on crop productivity.

Return on investment

Omya Magprill delivered the best return on investment at 3:1, calculated based on a sugarcane price of R\$ 79.62 (source UDOP (União das Destilarias do Oeste Paulista), 2020). In addition, as Magprill is a granulated product, it can be applied with the NPK fertilizer using standard spreading equipment, which saves on application costs.



PROVEN SOLUTIONS FOR A MORE PRODUCTIVE WORLD

Benefits of Omya Magprill:

- Rapidly corrects soil pH to the most productive level, maximizing the utilization of fertilizers
- Can be applied together with NPK fertilizers using standard fertilizer equipment
- Balances the potassium/magnesium ratio
- Provides essential nutrients (calcium and magnesium) to enhance crop quality
- Enables precise variable rate application.

Ask your crop advisor for the most appropriate application rates for your circumstances.

