Omya Calciprill® & Magprill® trials

Evaluating the effect on soil ph and yield compared with standard dolomite

Trial protocol

This trial evaluated the soil conditioning effect of Omya Calciprill and Omya Magprill in acidic soils over four seasons when compared with standard dolomite. Products were applied before seeding with three different crops, maize, peas and mustard. A full NPK program was applied to each plot including an untreated control. Yield was measured for each plot to provide comparisons of yield benefit for each product.

Trial partner:	Brisa Agricultural University
Trial location:	Jharkhand, Ranchi, India
Trial dates:	Rainy and winter seasons 2017 - 2019
Site/soil type:	Open field/sandy loam (Alfisol)
Starting pH:	5.3
Trial design:	Randomized blocks
Number of plots:	12
Replications:	3
Application Method:	Broadcast
Crops:	Maize, Peas, Mustard

Treatment description
Untreated
Trial treatment: Untreated + 100% NPK

Omya Calciprill
Trial treatment: Calciprill + 100% NPK
Recommended application: 750 kg/ha
Application prior to seeding, repeated every season

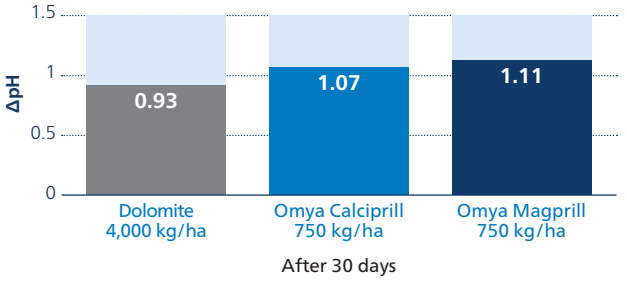
Dolomite
Trial treatment: Dolomite + 100% NPK
Recommended application: 4,000 kg/ha
Application prior to seeding, repeated every season

Omya Magprill
Trial treatment: Magprill + 100% NPK
Recommended application: 750 kg/ha
Application prior to seeding, repeated every season

Results

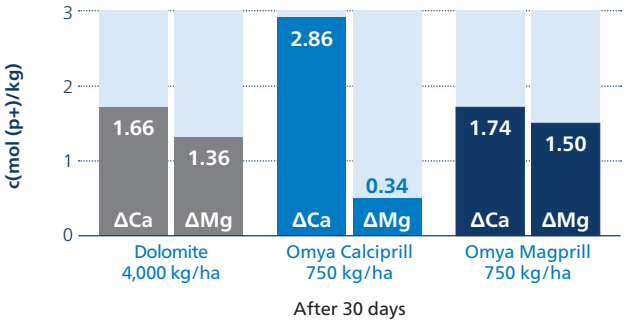
Soil conditioning – pH Correction

The trial demonstrated that both Omya Calciprill and Omya Magprill raised the pH of the acidic soil significantly within the first month of treatment, compared with standard dolomite, despite their application rate being less than 20% of the amount of dolomite applied. The data shows the average results achieved over a four season (two year) period.



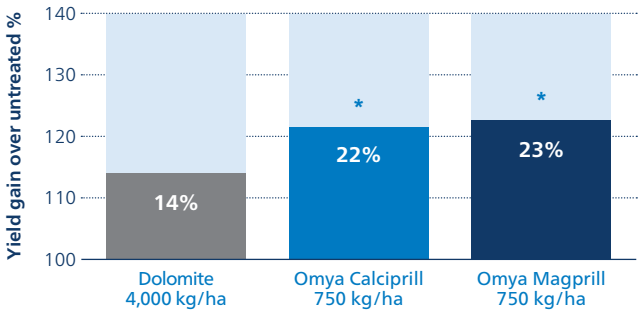
Soil conditioning – Ca and Mg levels in the soil

Soil conditioning with Omya Calciprill and Omya Magprill results in higher levels of exchangeable calcium and magnesium in the soil within 30 days of treatment. When compared with dolomite applied at much higher rates, Omya Calciprill delivered 72% higher calcium levels and Omya Magprill delivered similar calcium levels but 10% higher magnesium levels.



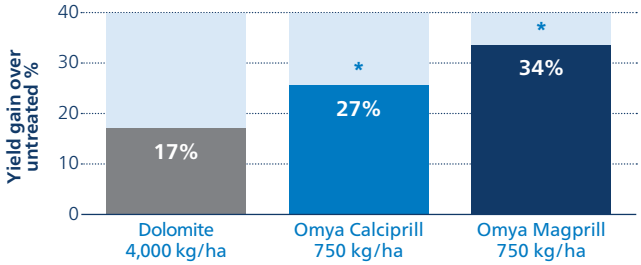
Yield – maize

Plots treated with Omya Calciprill and Omya Magprill delivered 8% higher grain yields than plots treated with dolomite and 22-23% higher yield than untreated plots. Grain yields were higher as a result of better germination and seedling survival leading to a denser crop. Better nutrient availability resulted in more cobs per plant with a heavier grain weight.



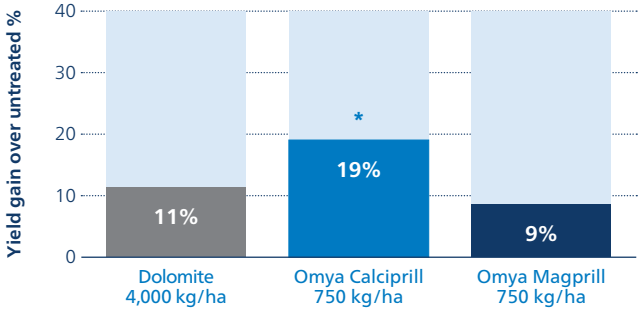
Yield – peas

Over two years the trial demonstrated significant yield improvement in both vegetable peas and green peas, with Omya Calciprill delivering a 27% increase in green pods over untreated and 10% over dolomite. Plots treated with Omya Magprill gave a 34% increase in green pods over untreated and 17% over dolomite.



Yield – mustard

The mustard crops treated with Omya Calciprill and Omya Magprill showed greater plant height and more pods per plant, leading to a significantly higher yield from Omya Calciprill and a similar result for Omya Magprill against dolomite. Both Omya Calciprill and Omya Magprill applications resulted in a yield increase over untreated plots.



* significant change

	Dolomite 4,000 kg/ha	Omya Calciprill 750 kg/ha	Omya Magprill 750 kg/ha	Reasons behind the results
Plant population (m2)	+10%	+12%	+12%	Better seedling germination and survival leads to denser crops
No of cob/plant	+17%	+27%	+28%	Better nutrient availability leads to more fruiting bodies
100 grain weight (g)	+8%	+8%	+8%	Better calcium nutrition improves grain weight

Proven solutions for a more productive world

Omya Calciprill and Omya Magprill are highly reactive, granulated soil conditioners made from finely ground, high purity natural minerals. They react quickly with soil acidity, correcting soil pH to optimal levels at much lower application rates than commonly applied dolomite. At optimal pH, nutrient use efficiency is maximized, delivering significant improvements in yield. The availability of exchangeable calcium and magnesium provides better crop nutrition.

Ask your crop advisor for specific advice on the application rates.

Benefits of Omya soil conditioners:

- Rapidly correct soil pH to the most productive level, maximizing the utilization of fertilizers
- Easily applied with standard fertilizer spreaders
- Provide essential nutrients (calcium and magnesium) to enhance crop quality
- Enable precise variable rate application.

Source: Omya International AG (2025/05) EN