

Growing SOYBEAN-CORN ROTATION IN BRAZIL

KEY FINDINGS

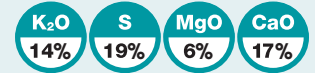
8% soybean yield increase

11% corn yield improvement

US\$253/ha higher revenue



POLY4
A SIRIUS MINERALS PRODUCT



POLY4 BENEFITS



Suitable for crop rotations



Extended nutrient availability



Compatible with NPK blends



Stores and spreads well with conventional equipment

A CASE FOR POLY4

- Soybean and corn are the most grown crops in Brazil (35.1 and 16.6 million hectares in 2018, respectively). Corn grown in rotation with soybean is responsible for 69% of corn production in Brazil.
- Since fertilizers are typically applied only to the soybean crop, a sustained nutrient supply is required to meet nutrient demand of both the soybean and following corn crop.
- Al³⁺ toxicity is a locally significant problem. Ca in POLY4 may help reduce aluminium toxicity allowing for root growth and establishment. At the same time, POLY4 delivers K, S, Mg and a range of micro nutrients in one product.

Treatments	Average nutrients applied (kg ha ⁻¹)			
	K ₂ O	S	MgO	CaO
MOP	80	0	0	0
MOP Plus (MOP + dolomitic lime + gypsum)	80	30	6	27
MOP + POLY4 (72:28)	80	30	10	27

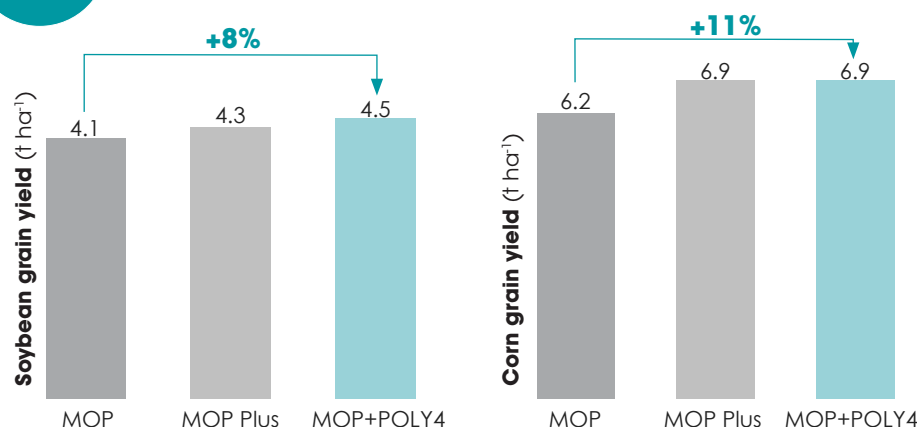
* All treatments received standard applications of N and P fertilizer.



GRAIN YIELD IMPROVEMENT



The highest yield of both soybean and corn was achieved with the MOP + POLY4 (72:28) treatment.



TRIAL FOCUS

To compare the effect of POLY4 and local fertilizer practices on yield in a Brazilian soybean-corn cropping system.

PARTNER

Instituto Federal Goiano

LOCATION

Rio Verde, GO, Brazil

DATE

2018

ENHANCED NUTRITIONAL VALUE

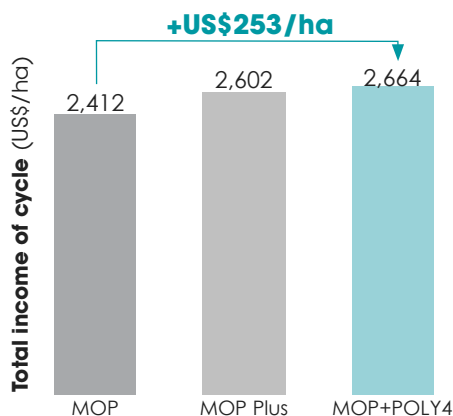


A two percentage points increase in the protein content of soybean was observed with the POLY4 treatment. Soybeans are a major source of protein for human and animal diets and protein content is typically the most important quality characteristic.

INCREASED INCOME



POLY4 gave the best revenue across the cropping cycle.



Notes: 1) CONAB. Companhia Nacional de Abastecimento. Acompanhamento da safra brasileira: tabela levantamento 2017/18. Accessed on 5-Apr-19. <https://www.conab.gov.br/info-agro/safras>; 2) Treatments applied as topdressing at the time of soybean sowing. N and P provided by MAP at 156.9 kg ha⁻¹, plus 35 kg ha⁻¹ of urea at the time of corn sowing for each treatment. Soybean crop used cultivar Flecha IPRO. After soybean harvest, corn cultivar P3436 was sown. Pre-trial soil levels: pH 5.4, OM: 21 g kg⁻¹, 55 mg P kg⁻¹, 7 mg K kg⁻¹, 38 mg Ca kg⁻¹, 15 mg Mg kg⁻¹, 5 mg S kg⁻¹, 0.9 mg Al kg⁻¹; 3) Genstat mean results across applied treatments; 4) Protein content estimated from N% in seed; 5) Crop prices obtained from Notícias Agrícolas. Corn price: US\$182/t. Soybean price: US\$313/t.

Source: Instituto Federal Goiano (IFG), 2018, 78000-IFG-78010-17.

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