Growing SOYBEAN IN BRAZIL

POLY4
A SIRIUS MINERALS PRODUCT

K_2O 14% | S 19% | MgO 6% | CaO 17%

KEY FINDINGS

0.4 t ha^{-1} grain yield improvement with POLY4 0:18:18 blend applied at planting

Up to 4% grain yield increase with POLY4 applied pre-planting

Enhanced K and S grain nutrition

POLY4 BENEFITS

- Source of macro and micro nutrients
- Extended nutrient delivery
- Stable during storage
- Compatible in NPK blends

A CASE FOR POLY4

- The state of Maranhão grew 950,000 hectares of soybean in 2017-2018 with a total production of 3 million metric tonnes.
- Potassium fertilizer is usually applied as an NPK blend at planting or as a straight K application broadcast before planting. The latter allows quicker planting operations.
- POLY4 is highly compatible with other fertilizers in NPK formulations.
- POLY4's sustained nutrient delivery can make it particularly suitable for pre-plant applications.

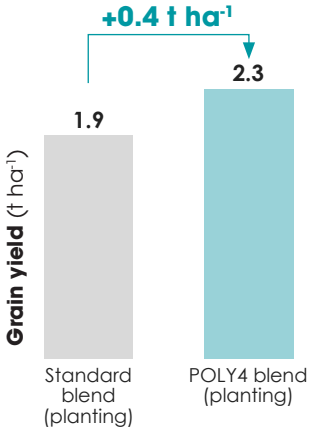
poly4.com

Treatments	Nutrients applied (kg ha^{-1})					
	Timing	P_2O_5	K_2O	S	MgO	CaO
Standard blend (0:18:18)	Planting	90	90	28	0	89
POLY4 blend (0:18:18)	Planting	90	90	38	12	73

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

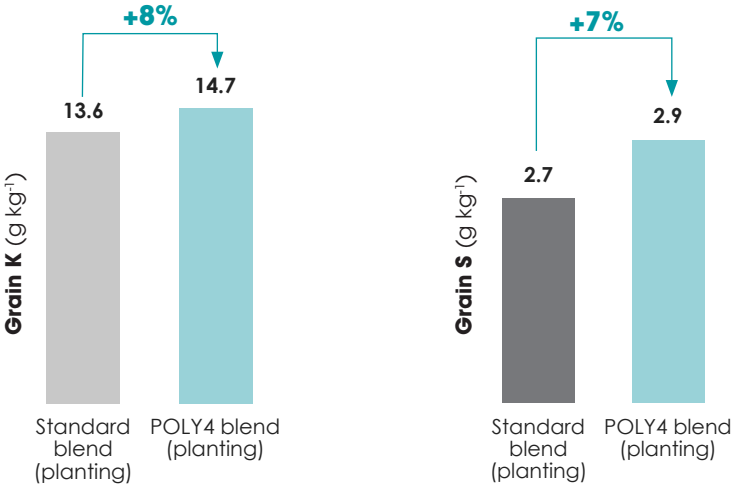
IMPROVED OUTPUTS WITH POLY4 BLEND AT PLANTING

When fertilizer was applied at planting, soybean fertilized with the POLY4 blend had greater yield than the standard blend.



IMPROVED NUTRITION WITH POLY4 BLEND AT PLANTING

Soybean, fertilized with the POLY4 blend at planting, had greater grain K and S than soybean fertilized with the standard blend.



TRIAL FOCUS

To compare the POLY4 0:18:18 blend's performance to a standard 0:18:18 MOP-K blend applied at planting and pre-planting.

PARTNER

EMBRAPA

LOCATION

Maranhão, Brazil

DATE

2018

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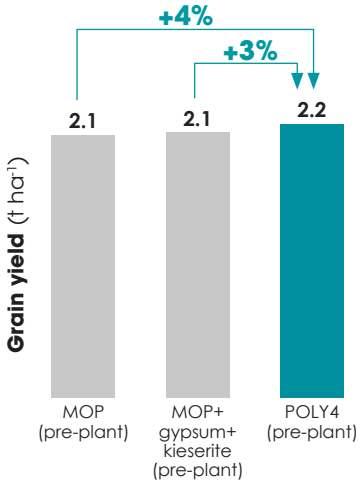
Treatments	Nutrients applied (kg ha^{-1})					
	Timing	P_2O_5	K_2O	S	MgO	CaO
MOP	Pre-planting	90	90	0	0	0
POLY4	Pre-planting	90	90	122	39	109
MOP + gypsum + kieserite	Pre-planting	90	90	96	39	109

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

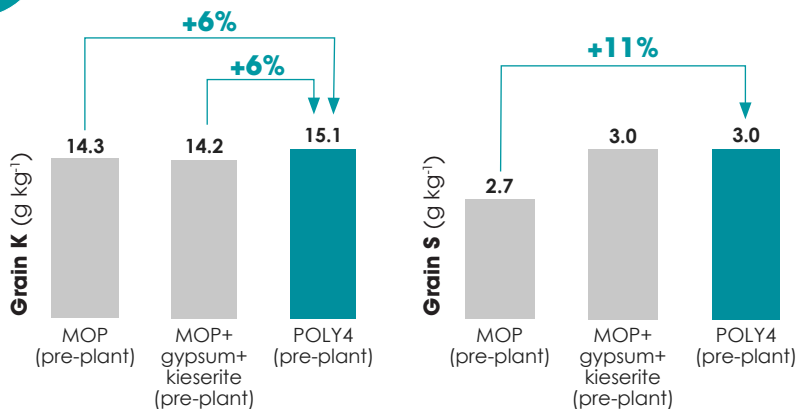
IMPROVED OUTPUTS WITH POLY4 APPLIED PRE-PLANTING

When fertilizing pre-planting the POLY4 plan again had the highest yield increasing revenue by US$31/ha. It is worth noting that even though MOP + gypsum + kieserite supplied the same nutrients, POLY4 still achived higher grain yield.



IMPROVED NUTRITION WITH POLY4 APPLIED PRE-PLANTING

POLY4 applied pre-planting had the greatest grain K. Pre-planting application of POLY4 or MOP + gypsum + kieserite improved grain S compared to MOP.



Notes: 1) Statistical information on soybean production from Acompanhamento da safra brasileira de grãos – v.6, Companhia Nacional de Abastecimento; 2) 0:18:18 standard blend contained TSP, SSP, and MOP; 0:18:18 POLY4 blend contained TSP, MOP and POLY4; 3) Phosphorus application to pre-planting treatments was from MAP; 19 kg of urea applied to the planting treatments to match MAP-N input in pre-planting treatments; 4) Soybean price US$382/t.

Source: EMBRAPA (2018), 133000-EMBR-133010-18 (soybean).

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