# Growing Soybean in Brazil





# **KEY FINDINGS**

Consistent yield improvement by up to 7%

**Increased farmer income** 

**Enhanced nutritional balance** 



VERNAUX

Source of macro and micro nutrients

**POLY4 BENEFITS** 



Sustained nutrient availability



Compatible with NPK blends



Easy to spread with a uniform field distribution pattern

# A CASE FOR POLY4

- Soybean is the most grown crop in Brazil with 35.1 million hectares planted in 2018.
- Most soybean in Brazil is produced in the Brazilian Cerrado, in soils with low fertility.
- Potassium, sulphur, magnesium and calcium delivered by POLY4 can increase plant nutrition promoting crop yield potential.

Treatments	Nutrients applied (kg ha <sup>-1</sup> )				
	K <sub>2</sub> O	MgO	S	CaO	Cl
Standard blend	72	0	23	71	58
POLY4 blend	72	10	31	58	44

\*Both treatments were 0:18:18 blends

## **CONSISTENT YIELD IMPROVEMENT**



A consistently superior crop performance was observed after fertilizing soybean with the POLY4 blend. Even though both treatments supplied sulphur and calcium, the POLY4 blend had higher yields across all three years of trial.

#### **INCREASED INCOME**



The POLY4 blend gave the best revenue across all three years.

Revenue (US\$/ha)



+3%

4.6 4.8

2016

rield (t ha

Standard blend POLY4 blend

+7%

2017

2.8

3.0

+4%

2018

3.6 3.8

### **ENHANCED NUTRITIONAL BALANCE**



Soybean fertilized with POLY4 had adequate potassium in all years. The standard blend added the same amount of K, but was often closer to or below a critical K concentration that indicated crop K deficiency.



Notes: 1) CONAB. Companhia Nacional de Abastecimento. Acompanhamento da safra brasileira: tabela levantamento 2017/18. Accessed on 5 April 2019. 2) Pre-trial soil level: pH (CaCl.) 6. 7 mg P kg<sup>-1</sup>, 56 mg K kg<sup>-1</sup>, 502 mg Ca kg<sup>-1</sup>, 119 mg Mg kg<sup>-1</sup>; 2017 site: pH (CaCl.) 4.6, 15 mg P kg<sup>+</sup>, 31 mg K kg<sup>-1</sup>, 160 mg Ca kg<sup>+1</sup>, 49 mg Mg kg<sup>-1</sup>; 2018 site: pH (CaCl.) 5, 15 mg P kg<sup>+1</sup>, 27 mg K kg<sup>-1</sup>, 300 mg Ca kg<sup>+1</sup>, 49 mg Mg kg<sup>+1</sup>; 2018 site: pH (CaCl.) 5, 15 mg P kg<sup>+1</sup>, 27 mg K kg<sup>+1</sup>, 300 mg Ca kg<sup>+1</sup>, 49 mg Mg kg<sup>+1</sup>; 3) All treatments were applied at planting; standard blend made with TSP, MOP and SSP; POLY4 blend made with TSP, MOP and POLY4; blends supplied 70 kg P<sub>2</sub>O<sub>2</sub> ha<sup>+1</sup>. Cultivar used in the trials was BMX Potencia RR; 4) Genstat means of all experiments; 5) Com price: US\$191/t (FAOSTAT); 6) Sufficiency K level in R1 stage is 17 g kg<sup>-1</sup> (source: Tecnologias de produção de soja – Região Central do Brasil 2014. Londrina, PR: Embrapa Soja, 2013. 265p).

Source: Universidade Estadual Paulista "Júlio de Mesquita Filho" (2016 – 2018) 4000-USP-4017-15, 4000-USP-4022-16, 4000-USP-4028-17 (soybean).

# TRIAL FOCUS

To compare the response of soybean to a commonly used blend containing K from MOP with a mixture of MOP and POLY4 over three years at different sites.

## PARTNER

Universidade Estadual Paulista "Júlio de Mesquita Filho"

## LOCATION

Jaboticabal, São Paulo, Brazil

> DATE 2016 - 2018

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