



POLY4
A SIRIUS MINERALS PRODUCT

TRIAL RESULTS

POTATO

SÃO PAULO, BRAZIL (2015)



poly4.com

TRIAL OBJECTIVE

This second year trial compared a POLY4 fertilizer plan as an alternative potassium source for potatoes against a MOP fertilizer plan.

HIGHLIGHTS

18% INCREASE IN YIELD

17% DECREASE IN FERTILIZER PLAN COST

REDUCTION IN THE NUMBER OF FERTILIZER INPUTS

6% INCREASE IN TUBER DRY MATTER

TUBER NITROGEN, PHOSPHORUS, POTASSIUM AND SULPHUR INCREASED BY 7%, 2%, 6% AND 5% RESPECTIVELY

TRIAL DESIGN

PARTNER: UNIVERSITY OF SÃO PAULO

LOCATION: SÃO PAULO, BRAZIL

YEAR: 2015

- Following a first year potato trial, a second year was established to confirm previous results.
- The use of SSP within 4:14:8 blends is the commercial standard practice supplying phosphorus, calcium and sulphur.
- A 4:14:2/4/6/8 series was used to demonstrate the K response from blends delivering fixed N and P.
- Asterix potatoes were trialled which are commonly used in French Fries and processed potato products.

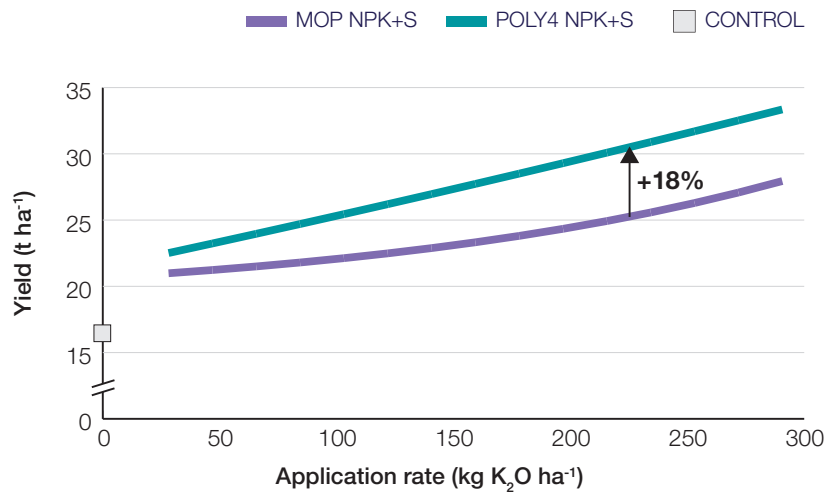


TREATMENT TABLE (kg ha⁻¹)¹⁻³

NUTRIENT	AVERAGE NUTRIENT APPLIED IN TRIAL (kg ha ⁻¹)						
	N	P ₂ O ₅	K ₂ O	MgO	CaO	S	Cl
Control	0	0	0	0	0	0	0
MOP NPK+S	150	528	188	0	801	326	150
POLY4 NPK+S	150	528	188	81	224	257	40

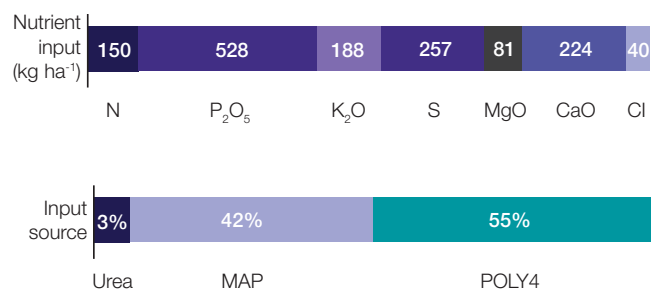
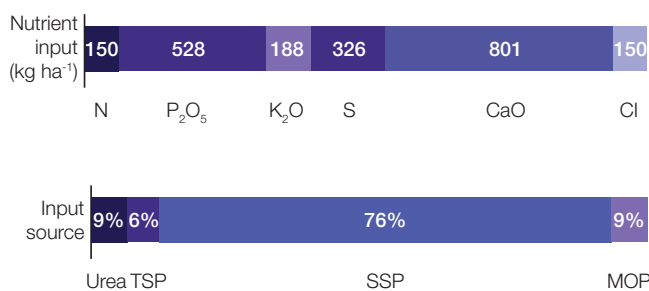
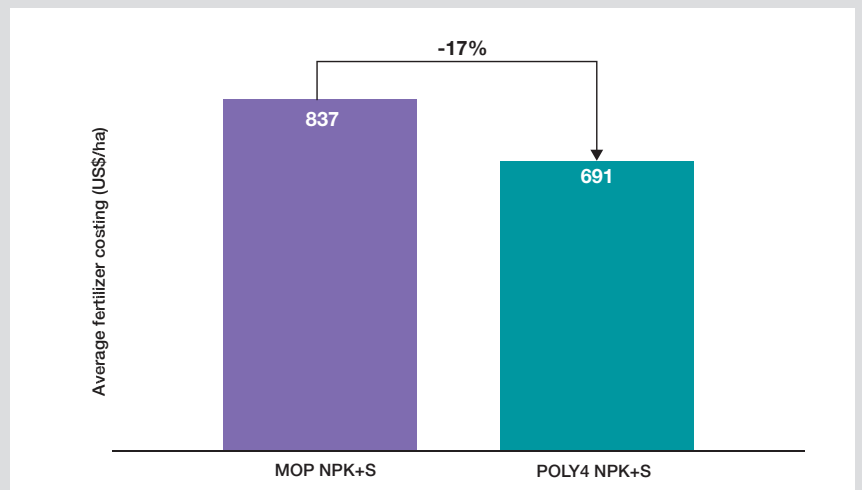
YIELD RESULT ^{(t ha⁻¹)^{1-4,7}}

- Increasing potassium application resulted in increasing yields in a stable nitrogen and phosphorus background.
- At the recommended rate of 220 kg K₂O per hectare, POLY4 NPK+S showed a yield improvement of 18% over MOP NPK+S.
- Removal of SSP lowers the calcium content in favour of magnesium from the more efficient POLY4 NPK+S plan that supports yield improvements
- Substitution of MOP with POLY4 lowers the chloride content of a fertilizer plan.



ECONOMIC SUMMARY ^{5,6}

- The inclusion of POLY4 into NPK+S fertilizer plans supplies calcium, magnesium and sulphur in an appropriate ratio and contains less chloride.
- Under average trial conditions, the POLY4 NPK+S plan generates US\$146 saving on input and application costs.
- Improvements in yield and quality coupled with a lower input cost extends grower's margins significantly.



Notes: 1) Average nutrients applied per treatment based on range of 0–300 kg K₂O ha⁻¹; 2) MOP NPK+S plan uses Urea, TSP, SSP and MOP; 3) POLY4 NPK+S plan uses Urea, MAP and POLY4; 4) GENSTAT regression analysis 5) Fertilizer prices based on Brazil 2016 annual prices: Urea (US\$216/t), TSP (US\$288/t), SSP (US\$216/t), MAP (US\$351/t), MOP (US\$231/t), POLY4 (US\$200/t); 6) Spreader cost of US\$13.17/t accounted for with input calculations; 7) Initial soil analysis: pH 5.6, K 86 mg kg⁻¹, Ca 563 mg kg⁻¹, Mg 106 mg kg⁻¹, S 30 mg kg⁻¹.

Source: University of São Paulo (2015) 4000-USP-4015-15

siriusminerals.com | +44 1723 470 010 | commercial@siriusminerals.com

Registered Address: 3rd Floor Greener House, 66-68 Haymarket, London SW1Y 4RF, UK
Company Registered Number: 4948435

