

Growing CORN IN VIETNAM



POLY4
A SIRIUS MINERALS PRODUCT

K₂O 14%	S 19%	MgO 6%	CaO 17%
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KEY FINDINGS

Up to 14% yield improvement

Greater grain weight and starch content

Quicker emergence and
improved leaf area index



POLY4 BENEFITS



Source of macro and micro nutrients



Extended nutrient delivery



Calcium supports soil and plant health



Resilient to leaching losses

A CASE FOR POLY4

- In Son La province, corn (maize) is grown across nearly 155,000 ha – 30% of the total crop area is in the Northern Upland region.
- Corn is mostly cultivated on steep-sloped, high land under rainfed conditions.
- In Vietnam, sulphur (S) is quickly lost from soils due to leaching. Potassium and magnesium deficiencies are also significant in many areas.
- POLY4's extended nutrient delivery profile provides K, sulphate-S, Mg and Ca throughout the life of the crop, and supports resilience against leaching losses.

Treatments	Nutrients applied (kg ha ⁻¹)				
	%K from POLY4	K ₂ O	S	CaO	MgO
MOP	0	120	60	120	0
MOP+POLY4 (80:20)	20	120	93	149	10
MOP+POLY4 (60:40)	40	120	125	178	21
MOP+POLY4 (40:60)	60	120	158	207	31

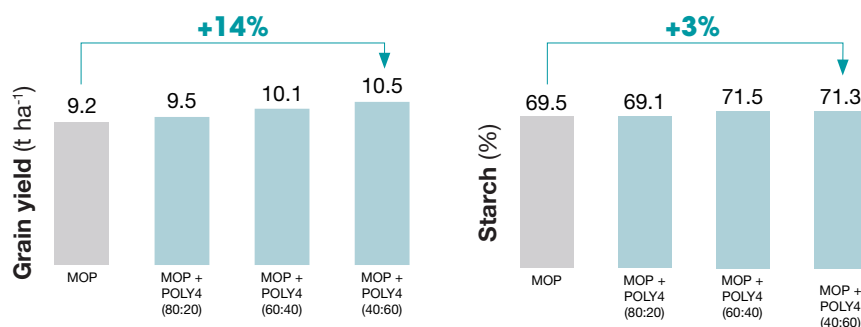
*All treatments received 150 kg N ha⁻¹ from urea, 90 kg P₂O₅ ha⁻¹, 60 kg S ha⁻¹ and 120 kg CaO ha⁻¹ from SSP.

SIGNIFICANT GRAIN YIELD INCREASE



Higher yields were achieved with addition of more POLY4. Grain yield was significantly improved with MOP+POLY4 (60:40) and MOP+POLY4 (40:60) fertilizer plans compared to MOP.

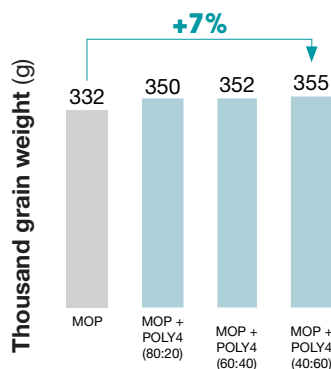
Corn starch is important in the region for ethanol production and animal feed. POLY4 inclusion generally increased starch content – where POLY4 supplied over 40% of K₂O starch content was significantly greater compared to MOP.



IMPROVED YIELD COMPONENTS



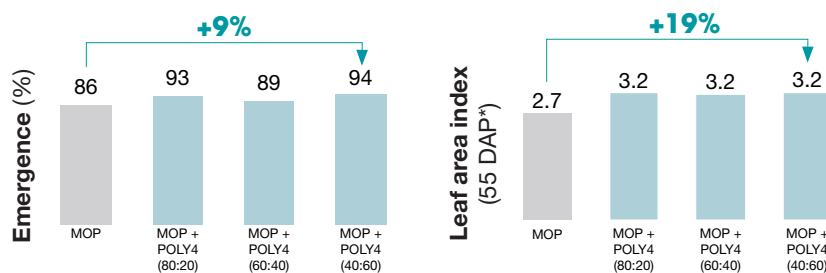
Thousand grain weight was significantly improved with all POLY4 treatments. The number of filled grain per cob was greater with 20% and 60% POLY4 inclusions compared to MOP. The number of immature grains per cob was also decreased with POLY4.



ENHANCED GROWTH



Seedling emergence was greater, with 20% and 60% POLY4 inclusions, than MOP. All POLY4 fertilizer plans gave significantly higher leaf area indices. Plants were also numerically taller.



*Days after planting (DAP)

Notes: IPNI, An introduction to the major soil types in Vietnam; Tran Minh Tien (2015) Vietnam Soil Resources, Asian Soil Partnership Consultation Workshop on Sustainable Management and Protection of Soil Resources; Data analysed by Genstat ANOVA with means separation by Fishers Test at 10% level. Initial soil analysis: 24 mg P kg⁻¹, 139 mg K kg⁻¹

Source: SFRI (Son La, 2018), 79000-SFRI-79010-17 (corn).



TRIAL FOCUS

To compare the response of corn to POLY4 with the standard MOP plan in Vietnam's Northern Upland region.

PARTNER

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