

Polysulphate 

**Trial**



**S**

48%  $\text{SO}_3$   
(19.2% S)

**K**

14%  $\text{K}_2\text{O}$   
(11.6% K)

**Mg**

6%  $\text{MgO}$   
(3.6% Mg)

**Ca**

17%  $\text{CaO}$   
(12.2% Ca)

## Maize (*Zea mays*) on grey degraded soil

Polysulphate fertilizer is a soluble, easily-absorbed, cost effective answer to crop nutrition, containing four key plant nutrients: sulphur, potassium, magnesium and calcium



Polysulphate 



## When

- Planting: August 2016
- Harvest: December 2016



## Where

Vinh Phuc Province, Vietnam



## Crop

Maize (*Zea mays*)



## Soil type

Grey degraded soil (Plinthic Acrisols)



## Measurements

- Yield
- Plant height
- Number of leaves
- Occurrence of pests and diseases

Mined in the UK, ICL is the first – and only – producer in the world to mine polyhalite, marketed as Polysulphate.

For more information consult [www.polysulphate.com/contact](http://www.polysulphate.com/contact) for your contact in your region.

[www.polysulphate.com](http://www.polysulphate.com)

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**Polysulphate**



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**Fertilizerplus**  
Premium plant nutrition from ICL Fertilizers

## Objective

To evaluate the agronomic efficiency of Polysulphate on yield, quality, and economic returns of winter maize on degraded soils in Northern Vietnam, and to record the advantages of using Polysulphate as an alternative to MOP.

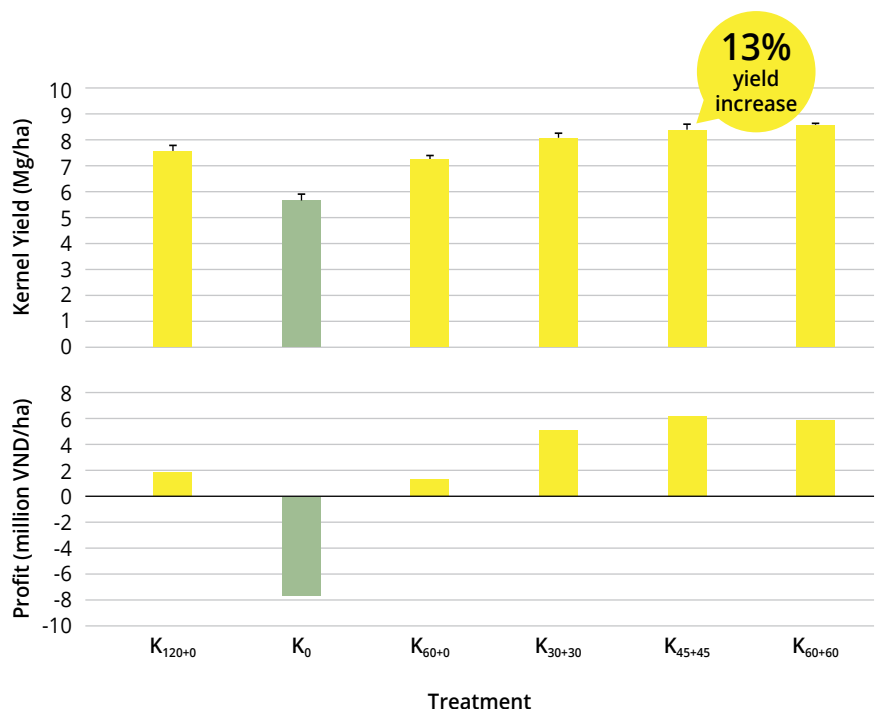
## Treatments

The experiment included six treatments, with four replications in a randomized complete block design. Farmers' usual practice ( $K_{120+0}$ ) of a high K rate applied through MOP, was compared with five other treatments. The control ( $K_0$ ) had no K applied. Treatments  $K_{60+0}$  and  $K_{30+30}$  received 60 kg/ha  $K_2O$ , applied solely through MOP or through a combination of MOP and Polysulphate, respectively. In treatments  $K_{45+45}$  and  $K_{60+60}$ , 90 and 120 kg/ha  $K_2O$  was applied respectively, while maintaining a 1:1 ratio between MOP and Polysulphate as the sources of  $K_2O$ .

All treatments received 10 t/ha farmyard manure, 180 kg/ha N and superphosphate at 90 kg/ha  $P_2O_5$ . The mineral fertilizers were applied before sowing (30% N, 100% P, 40% K and 40% Polysulphate), at 4 to 6 leaves (40% N), and at pollination (30% N, 60% K and 60% Polysulphate).

## Results

- Zero K application led to a substantial loss of yield and profit
- Combinations of MOP and Polysulphate gave rise to significantly higher fodder yields, in grains as well as husks and corncobs
- K rates of 60 or 90 kg/ha  $K_2O$  are sufficient to obtain reasonable maize yields
- Economic analysis shows MOP with Polysulphate at rate of 90 kg/ha  $K_2O$  was the most profitable practice (2.2 times more profitable than farmer's usual practice of MOP alone)
- Rate of damage from pests (corn borer and corn aphid) and diseases (sheath blight and stalk rot) was lower among the Polysulphate-treated plants



Bars indicate SE

\* From research funded by the International Potash Institute [www.ipipotash.org](http://www.ipipotash.org).