Polysulphate®

# Trial

## Alfalfa
*(Medicago sativa)*
on a silt-loam calcareous soil

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

| | |
|---|---|
| S | 48% $SO_3$ (19.2% S) |
| K | 14% $K_2O$ (11.6% K) |
| Mg | 6% MgO (3.6% Mg) |
| Ca | 17% CaO (12.2% Ca) |

ICL

Fertilizerplus®
Premium plant nutrition from ICL Fertilizers

### When

Application date: Winter 2019. Harvest in 6 cuts: in 2019, 25 May, 1 July, and 23 August; in 2020, 13 May, 3 July and 20 August

### Where

Vésigneul-sur-Marne, France

### Crop

Alfalfa (*Medicago sativa*), 2nd year of cultivation

### Soil type

Silt-loam calcareous soil, pH 8.2

### Measurements

- Yield
- Feed quality parameters

## Objective

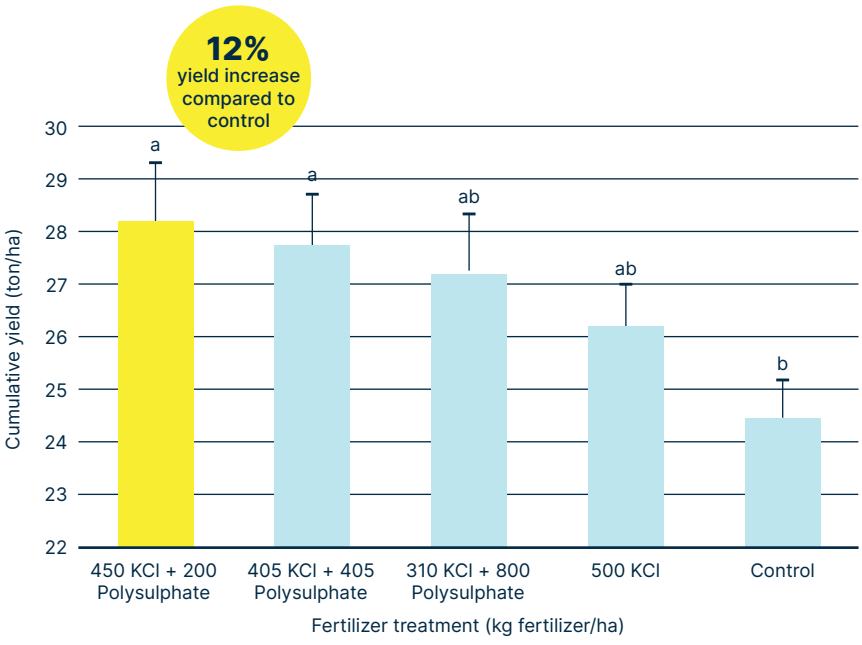
To evaluate Polysulphate, in combinations with KCl, as a K and secondary macronutrients source for rainfed alfalfa, and to examine the response of both yield and quality to increasing proportions of Polysulphate.

## Treatments

The trial consisted of 3 replications, on a randomized complete block design. Four different treatments were established with combinations of 2 different sources of potassium, potassium chloride (KCl) and Polysulphate, at a similar dose of K (300 kg $K_2O$/ha) with 4 different proportions: all K from KCl, and 10%, 20% and 40% of the K from Polysulphate. A control was established which received no additional nutrient supply.

## Results

- Over the whole experiment period, the alfalfa fertilized with Polysulphate and KCl yielded 1.6 ton/ha more than the crop fertilized only with MOP, and 3.1 ton/ha more than the $K_0$ control.
- A clear trend was observed in all cuts – especially in the second year – with improvements in the quality parameters of the alfalfa fertilized with Polysulphate (protein contents).
- Polysulphate slightly reduced the carbon footprint of the crop ($CO_2$ emissions calculated with the Cool Farm Tool).




*Different letters indicate significant differences at p < 0.05. Error bars are SD.*

** From research funded by the International Potash Institute www.ipipotash.org.*

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

Polysulphate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