



Polysulphate
Trial

Cotton
(*Gossypium hirsutum*)
on a sandy loam 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% SO₃
(19.2% S)

K 14% K₂O
(11.6% K)

Mg 6% MgO
(3.6% Mg)

Ca 17% CaO
(12.2% Ca)



When

Sowing: May 2016
Harvest: October 2016



Where

Antalya, Turkey



Crop

Cotton (*Gossypium hirsutum*)



Soil type

Sandy loam soil



Measurements

- Yield
- Fiber elongation

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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Objective

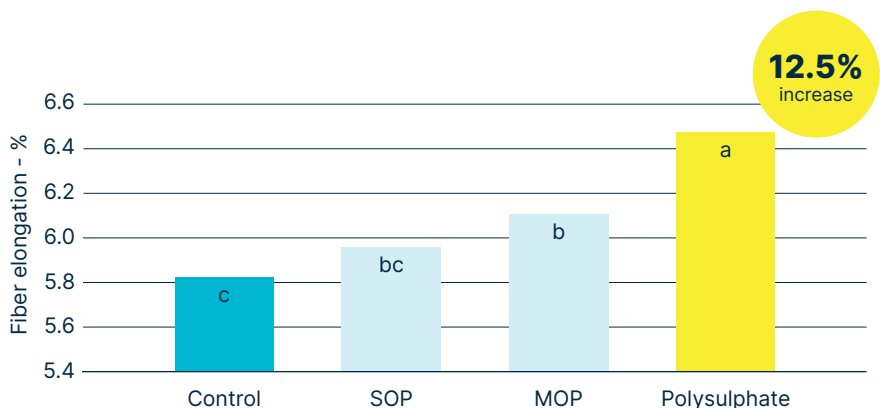
To investigate the effect of Polysulphate, potassium sulphate (SOP) and potassium chloride (MOP, KCl) on the yield and quality parameters of cotton.

Treatments

This randomized trial consisted of four replicates with four treatments. Nitrogen, phosphorus and potassium were applied according to target yield and soil tests at a rate of 250 kg N ha⁻¹ (as ammonium nitrate and di ammonium phosphate, DAP), 184 kg P₂O₅ ha⁻¹ (as di ammonium phosphate, DAP) and 210 kg K₂O ha⁻¹ (as Polysulphate, SOP or MOP). Control treatment received the same N and P doses but no K was applied.

Results

- Seed cotton yield was significantly increased by all 3 K sources. The yield of the Polysulphate treatments was 77% greater than the control without K application. Yields of Polysulphate and SOP treatments were significantly the same.
- Polysulphate application increased the net return and was very profitable, with a B:C (benefit:cost ratio) of 9.2.
- The highest fiber elongation was found in the Polysulphate treated cottons. This is one of the most important physical parameters for cotton quality.



* Different letters above bars indicate significant differences among treatments ($p < 0.001$).

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