Polysulphate®

Trial

Sugarcane
(Saccharum officinarum) seedlings on a Vertisol

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

Planting:
September 2018
Harvest:
January 2019

Where

Balboa, Risaralda State, Colombia

Crop

Sugarcane *(Saccharum officinarum)* var. CC01-1940 at seedling stage

Soil type

Vertisol, sandy loam with acidic pH (6.2); low OM (2.5 %); and high Ca and Mg content.

Measurements

- Shoot and root biomass
- Root: shoot ratio

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 evaluate the effect on sugarcane of using Polysulphate as a complementary nutrient source, in particular its effect on biomass at the seedling stage.

Treatments

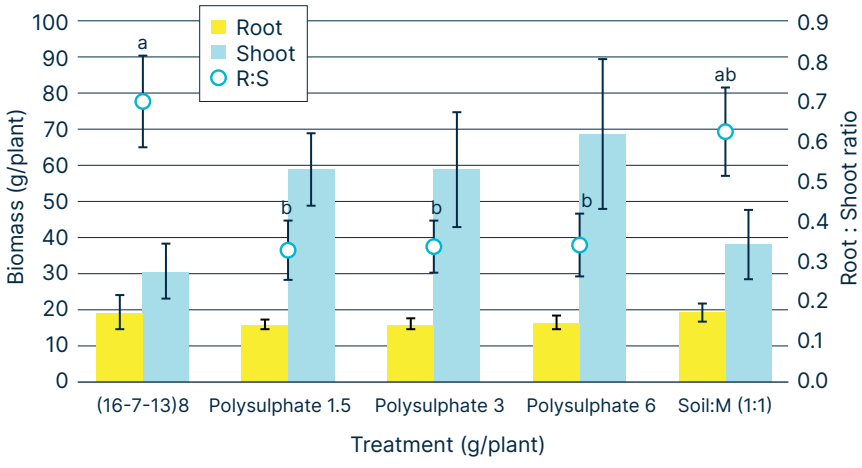
This trial consisted of five treatments: two controls and three Polysulphate doses (0, 1.5, 3 and 6 g/plant) applied 5 days after planting.

1. 8 g of 16-7-13
2. 1.5 g of Polysulphate
3. 3 g of Polysulphate
4. 6 g of Polysulphate
5. A mixture of soil and compost (1:1)

Treatments 1-4 received a total NPK application of 1.3, 0.6 and 1.1 g/plant from urea, DAP and using Polysulphate as a complementary K source reducing the KCl applied.

Results

- Polysulphate had a positive effect on sugarcane seedling growth at all application rates up to 6 g/plant.
- Polysulphate significantly increased shoot biomass, doubling it, when compared with the two controls without Polysulphate.
- Supply of K, Ca, Mg and S from Polysulphate reduced root biomass.
- Plants fertilized with Polysulphate had a root:shoot ratio half that of the controls, indicating better biomass partitioning in sugarcane seedlings.
- A recommended dose of 200-300 kg/ha of Polysulphate for the Cauca river valley would improve shoot biomass and sugarcane productivity.



Bars indicate standard errors. Different letters indicate significant differences among treatments by Tukey test (P=0.05)