

Polysulphate 

Trial



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)

Mustard (*Brassica juncea*) 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



When

- Sowing: November 2013
- Harvest: March 2014



Where

Kanpur, Uttar Pradesh,
India



Crop

Mustard (*Brassica juncea*)



Soil type

Sandy loam



Measurements

- Yield
- Yield components
- Oil content
- Nutrient uptake

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 for your contact in your region.

www.polysulphate.com

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Polysulphate

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Premium plant nutrition from ICL Fertilizers

Objective

To test the efficacy of Polysulphate as a sulphur source on the performance of mustard crops in India.

Treatments

The experiment was laid out in a randomized block design with three replicates and included six treatments:

- T1: Control without S and K fertilization (100% NP through urea and DAP only)
- T2: 100% NPK (urea, DAP, Muriate of Potash (MOP))
- T3: 100% NP + 50% S through Polysulphate (20 kg S ha⁻¹) (balanced K through MOP to make 100% K)
- T4: 100% NP + 75% S through Polysulphate (30 kg S ha⁻¹) (balanced K through MOP to make 100% K)
- T5: 100% NP + 100% S through Polysulphate (40 kg S ha⁻¹) (balanced K through MOP to make 100% K)
- T6: 100% NPK (urea, DAP, MOP) + 100% S through gypsum (40 kg S ha⁻¹).

The recommended dose of fertilizers: 120 kg N, 60 kg P₂O₅, 60 kg K₂O ha⁻¹ and 40 kg S ha⁻¹ was applied as per the treatments. Full dose of P, K, S and half dose of N were applied at the time of sowing as a basal application. The remaining half dose of N was applied in two equal splits.

Results

- Mustard yield increased significantly and steadily in response to the increasing S dose applied through Polysulphate (T3-T5).
- Mustard seed yield at the maximum S dose, 40 kg ha⁻¹ applied with Polysulphate (T5), increased by 35% compared with zero S application (T2).
- The response of oil yield to Polysulphate application was dramatic, providing 39% increase (T5 vs. T2). Sulphur applied through gypsum (T6) also gave rise to a significant increase in oil yields, although to a lesser extent than with Polysulphate.
- Yield components like pods per plant, pod length, seeds per pod and seed weight were highest at the maximum S level (T5).
- K and S uptake by mustard crop increased with increasing S dose applied through Polysulphate (T3-T5).

