



Polysulphate
Trial

Black pepper
(*Piper nigrum* L.)
on an acidic 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

- January 2016
 - December 2017
- Garden planted in 2012



Where

Gia Lai province,
Central Highlands,
Vietnam



Crop

Black pepper
(*Piper nigrum L.*)



Soil type

Acidic reddish brown
soil



Measurements

- Yield and quality
- Vegetative growth
- Diagnostic leaves
- Mealybugs infestation

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

Polysulphate

- ✉ fertilizers.sales@icl-group.com
- in icl-growingsolutions
- @iclgrowingsolutions
- @ICLGrowingSolutions

www.icl-growingsolutions.com

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Objective

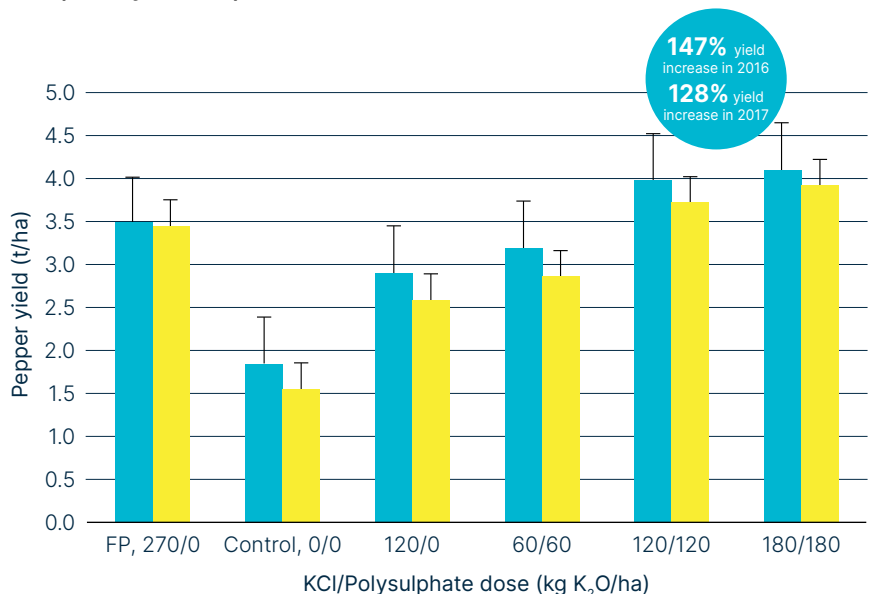
To evaluate the effectiveness of Polysulphate as a supplementary fertilizer on black pepper performance, yield, quality, and economic efficiency under the conditions of the Central Highlands of Vietnam.

Treatments

The experiment was set according to a randomized complete block design (RCBD) with four replications. Polysulphate was examined in combination with MOP (KCl), in equal proportions, to provide doses of 120, 240 and 360 kg K₂O/ha/yr, split into six applications during the year. These treatments were compared to doses of zero (control), 120, and 270 (farmers' practice) kg K₂O/ha applied solely as MOP. Standard N and P fertilizers were applied in all treatments.

Results

- Fruit weight, volume and density increased with Polysulphate application combined with MOP, while fruit shedding rates reduced.
- Elongation of primary branches and number of secondary branches increased with Polysulphate application combined with MOP, while premature fruit abscission dramatically reduced.
- The combined MOP and Polysulphate applications significantly reduced mealybug infestation.
- Plants supplied with combined MOP and Polysulphate showed increased levels of leaf K, S, Ca, and Mg as compared with the unfertilized control.
- Combined MOP and Polysulphate applied at the doubled dose (240 kg K₂O/ha) gave rise to the best crop performance and to the highest yield, produce quality, and profit.



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