Polysulphate®

Trial

Chinese cabbage
(Brassica rapa pekinensis) on a Paddy 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

Sowing: July 2015
Harvest: August 2015

Where

Hainan, China

Crop

Chinese cabbage *(Brassica rapa pekinensis)*

Soil type

Paddy soil

Measurements

- Yield
- Growth parameters
- Soil nutrients after harvest
- Soil pH after harvest

Objective

To investigate the effect of increasing rates of Polysulphate on the yield, growth parameters, concentrations of soil nutrients and soil pH after harvest of Chinese cabbage.

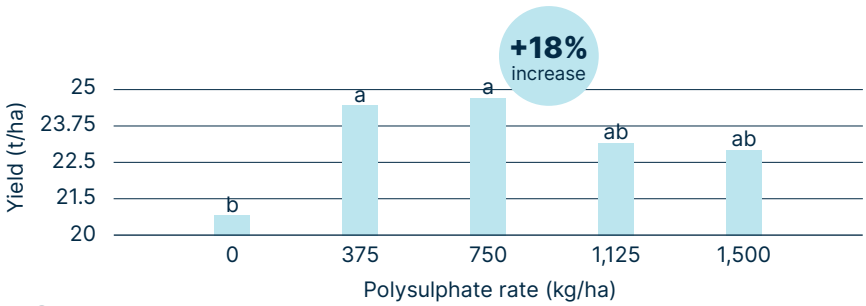
Treatments

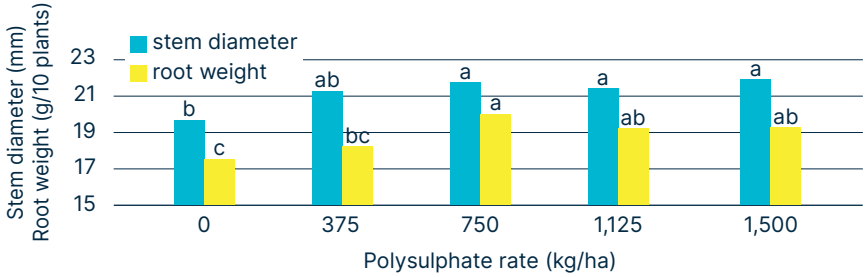
This randomized block trial consisted of four replicates with five treatments. In all treatments, nitrogen, phosphorus and potassium were applied according to farmers' traditional practice: 450 kg/ha of compound fertilizer (15-15-15) + 7.5 t/ha of organic fertilizer applied as base-fertilizer. Four treatments consisted of increasing rates of Polysulphate: 375, 750, 1,125 and 1,500 kg/ha. Control treatment received the same NPK and organic fertilizer + 300 kg/ha calcium cyanamide but no Polysulphate was applied.

Results

- Potassium, Mg and Ca concentrations in soil after harvest were increased in the Polysulphate treatments when compared to the control.
- Polysulphate application increased soil pH after harvest from 4.9 (control) up to 5.28 (1,500 kg Polysulphate/ha).
- Application of Polysulphate increased significantly the stem diameter and root weight of Chinese cabbage.
- Polysulphate application increased significantly the yield. The highest yields were obtained when Polysulphate was applied at a rate of 375 and 750 kg/ha.
- Polysulphate application was highly profitable. The highest additional net profit (2,978 USD/ha) was obtained when Polysulphate was applied at a rate of 375 kg/ha.

Polysulphate (kg/ha)	Soil pH	Available K (mg/kg)	Exchangeable Mg (mg/kg)	Exchangeable Ca (mg/kg)
0	4.88	124.4	90.2	772.6
375	4.99	145.0	126.9	1,142.6
750	5.06	218.2	132.4	1,886.6
1,125	5.03	199.0	180.3	1,063.1
1,500	5.28	286.4	208.5	2,138.3





** Different letters above bars indicate significant differences among treatments (p<0.05)*

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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