

Polysulphate 

**Trial**



**S** 48%  $\text{SO}_3$   
(19.2% S)

**K** 14%  $\text{K}_2\text{O}$   
(11.6% K)

**Mg** 6% MgO  
(3.6% Mg)

**Ca** 17% CaO  
(12.2% Ca)

## Pomegranate (*Punica granatum*) on a calcareous soil

Polysulphate fertilizer is a soluble, easily-absorbed, cost effective answer to crop nutrition, containing four key plant nutrients: sulphur, potassium, magnesium and calcium

**ICL** Fertilizers

Polysulphate 



When

2016



Where

Heyin, Henan Province, China



Crop

Pomegranate (*Punica granatum*)



Soil type

Calcareous



Measurements

- Yield
- Number of fruits per tree
- Fruit weight
- Fruit quality

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](http://www.polysulphate.com/contact) for your contact in your region.

[www.polysulphate.com](http://www.polysulphate.com)

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Premium plant nutrition from ICL Fertilizers

## Objective

To compare the yield and quality of pomegranate fruits grown in Henan Province, China using farmers' fertilizer practice or fertilizer schemes based on soil tests and either with or without the addition of Polysulphate.

## Treatments

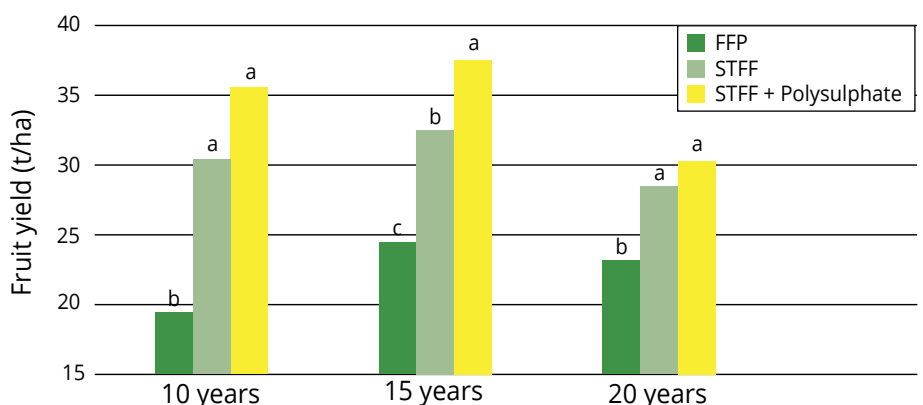
The trial tested the effect of three different fertilizer treatments on pomegranate trees of either 10, 15, or 20 years old. There were three replications for each treatment.

1. FFP (farmer's fertilizer practice): base fertilizer in autumn: 7,500 kg/ha organic fertilizer; topdressing fertilizer in spring: 500 kg/ha N, 500 kg/ha P<sub>2</sub>O<sub>5</sub> and 500 kg/ha K<sub>2</sub>O
2. STFF (soil testing and formula fertilization): base fertilizer in autumn: 7,500 kg/ha organic fertilizer; topdressing fertilizer in spring: 373.5 kg/ha N, 223.5 kg/ha P<sub>2</sub>O<sub>5</sub> and 327 kg/ha K<sub>2</sub>O
3. STFF+PS (soil testing and formula fertilization + Polysulphate): base fertilizer in autumn: 7,500 kg/ha organic fertilizer and 375 kg/ha Polysulphate; topdressing fertilizer in spring: 373.5 kg/ha N, 223.5 kg/ha P<sub>2</sub>O<sub>5</sub> and 327 kg/ha K<sub>2</sub>O

## Results

- Compared with farmers' fertilizer practice, using soil testing and formula fertilizers with Polysulphate significantly increased fruit yield for pomegranate trees of all ages. The yield increase is less significant as tree age increases, 82.4% (10 years), 55.2% (15 years) and 30.5% (20 years).
- Polysulphate significantly increased the number of fruits per tree, fruit weight and fruit size.
- Polysulphate significantly increased sugar content, sugar-acid ratio and vitamin C content, while decreasing acidity of the fruits.
- Compared with farmers' fertilizer practice, using soil testing and formula fertilizers with Polysulphate for pomegranate trees increased farmers' net income by 148.29%, 84.42% and 47.61% for 10, 15, and 20 year old trees respectively.

Tree-age (year)	Treatment	Diameter (cm)	Sugar Content (%)	Acidity (%)	Sugar acid ratio	Vitamin C content (mg/kg)
10	FFP	8.40 b	14.91 b	0.28 a	53.14 b	5.72 b
	STFF	8.84 a	15.10 ab	0.16 b	92.26 a	7.29 a
	STFF+PS	8.70 a	15.77 a	0.16 b	96.36 a	7.41 a
15	FFP	8.11 b	14.26 b	0.23 a	60.99 b	6.70 b
	STFF	8.34 ab	14.97 ab	0.19 ab	80.03 a	7.99 a
	STFF+PS	8.57 a	15.03 a	0.17 b	88.44 a	7.88 a
20	FFP	8.35 b	14.73 a	0.28 a	52.50 b	5.79 b
	STFF	8.67 a	14.66 a	0.18 b	81.50 a	7.85 a
	STFF+PS	8.58 ab	15.09 a	0.21 b	72.76 a	7.92 a



Different letters above bars indicate significant differences among treatments ( $P < 0.05$ )