Polysulphate®

Trial

Almond
(Prunus dulcis)
on a sandy loam

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

S	19.2%
K	14%
Mg	3.6%
Ca	12.2%

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When

Fall 2021 to Fall 2022

Where

Sanger, California, USA (Syntech Research)

Crop

Almonds - Butte and Padre varieties
(Prunus Dulcis)

Soil type

Sandy loam
7.6-7.8 pH soil

Measurements

Yield, Tissue and Soil Analysis

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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For more information visit
www.icl-growingsolutions.com
or contact our agronomy experts at:
NA.AgronomyServices@icl-group.com

Objective

Evaluate the performance of Standard and Granular Polysulphate (spring or fall applied) compared to the grower standard practice on almonds in California.

Treatments

Polysulphate side discharge broadcast spreading along the tree line

Treatment	Application Timing	Application Rate (lb/acre)
GSP (MAP + SOP)	Fall	38+300
Polysulphate Standard +MAP	Fall	1071+38
Polysulphate Granular + MAP	Spring	1071+38
Polysulphate Standard + MAP + SOP	Spring	750+38+90

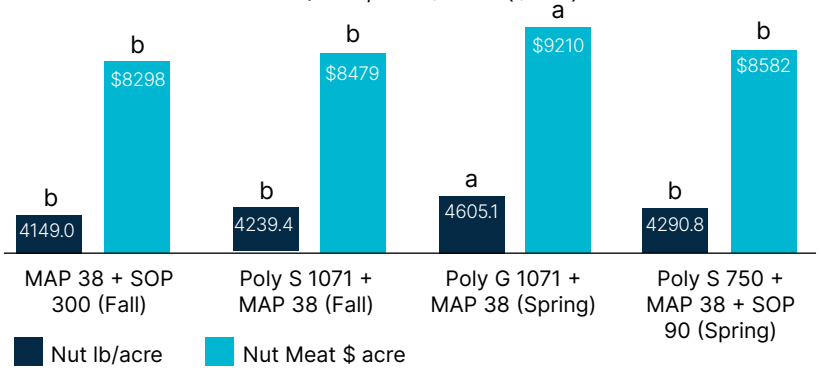
Results

- Standard Polysulphate in the fall increases yields over GSP by 2.2% (for 1071 lb/a) and 3.4% (750 lb+SOP).
- Higher spring soil and August leaf tissue Ca & Mg, plus higher April tissue K with fall applied Standard Polysulphate.
- Granular Polysulphate spring application and sustained release of nutrients increasing yield above GSP by 11%.
- Higher leaf tissue K in the spring with Granular Polysulphate = highest nut yield.
- GSP higher spring soil K, but lower leaf K in April than any of the Polysulphate treatments – set the stage for lower yield and NUE (nutrient use efficiency).

Polysulphate Almond Trial - Potassium

Treatment	4/11/22 Soil K mg/kg	8/23/22 Soil K mg/kg	4/11/22 Leaf K%	8/23/22 Leaf K %	Nut Yield lb/ acre
MAP 38+SOP 300 (fall) = GSP	1140	93	2.57	1.76	4149
Poly S 1071+MAP 38 (fall)	955	73	2.76	1.46	4239
Poly G 1071+MAP 38 (spring)	894	65	2.92	1.28	4605
Poly S 750+MAP 38+SOP 90 (spring)	878	151	2.71	2.25	4291

Total Almond Yield Highest with Granular Polysulphate (spring)
Nut lb/acre, Nut $ acre ($2 lb)



Conclusion

- Polysulphate in the fall or spring showed positive yield responses vs GSP.
- Granular Polysulphate (spring) resulted in statistically higher nut yield and economic returns.
- Prolonged release of K, Ca, Mg with Polysulphate (both standard and granular) shows positive NUE and nut yield compared to GSP.

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