Fertilizing Wheat, Barley and Oats

with Polysulphate

POLYSULPHATE®

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Main features of Polysulphate fertilizer

- Ideal sulfur fertilizer with 19.2% S and additional benefit of potassium (K), magnesium (Mg) and calcium (Ca), all in sulfate form.
- Reduced risk of sulfate loss through leaching due to prolonged nutrient release pattern.
- Fully soluble, with all nutrients available for plant uptake during the growth period.
- Excellent spreading characteristics; spreads evenly and accurately in the field up to 118 feet.
- Low chloride, very low salinity index, neutral pH, no acidifying effect.
- Natural mined mineral (polyhalite) approved for organic agriculture.
- UK produced fertilizer with a low carbon footprint.

Functions of S, K, Mg and Ca in cereal crops

- Sulfur is an essential constituent of proteins: it is required for the synthesis of three of the amino acids which make up true proteins.
- Potassium increases yield and quality, transport of sugars, stomatal control and is a co-factor of many enzymes. It reduces susceptibility to plant diseases and impact of drought and is essential for efficient use of nitrogen.
- Magnesium is fundamental for photosynthesis, being a central part of chlorophyll molecule, and is key to grain filling.
- Calcium for strong and healthy crops; it is a major building block in cell walls and reduces susceptibility to diseases.

Sulfur and Polysulphate application recommendations (10:1 N to S ratio)

Nitrogen rate	Sulphur recommendation guide	
lbs N/acre	lbs S/acre lbs	Polysulphate/acre
100	10	50
150	15	75
200	20	100
250	25	125

Nutrient uptake in grain and straw by Wheat, Barley and Oats

Crop	Unit	K_2O	Ca	Mg	S
	lbs				
Wheat - Grain	bu	0.38	0.025	0.15	0.08
Wheat - Straw	ton	25	4.4	2.2	3.7
Barley - Grain	bu	0.25	0.025	0.05	0.08
Barley - Straw	ton	30	7.6	2.0	3.8
Oat - Grain	bu	0.17	0.024	0.04	0.06
Oat - Straw	ton	33	0.40	4.0	4.6

Sources: Fertilizer Guidlines for Montana Crops, Publication #EB 161, issued January 2023.

Practical guidelines for fertilizing cereals with Polysulphate

- One Polysulphate application will supply all the sulfate needed by cereals.
- Polysulphate can be applied as a straight or included in a blend as part of a custom fertilizer program.
- Sulfur is needed to balance the nitrogen applied so that complete proteins can be produced. Protein content is an important aspect of grain quality.
- Polysulphate applied at 75 to 100 lbs/acre is generally adequate for most small grain yield goals, supplying all of the sulfur and calcium needed, and a large proportion of the potash and magnesium removed in the grain at harvest.
- Ensure sufficient potash is applied if straw is removed from the field.
- Polysulphate is flexible in its application timing. It can be broadcast before planting, applied at the time of planting, or top-dressed.
- Polysulphate Premium is a seed-safe source of S and K for applying with the seed.

Nutrients supplied by Polysulphate at the recommended dose (100 lbs/A) to cereal crops at 90-120 bu/A grain yield

Expected benefits

- Higher yields
- Better quality of grain proteins
- Improved baking, malting and feed quality
- Increased nitrogen use efficiency

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

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S	K_2O	Mg	Ca
19.2%	14%	3.6%	12.2%

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The above are general rates, for specific recommendations or more information consult https://icl-growingsolutions.com/en-us/agriculture/our-experts/ for your contact in your region.

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