



Higher yields are available with K-Mag[®] fertilizer

K-Mag is a unique 3-in-1 combination of highly available potassium, magnesium and sulfur, all present in the water-soluble sulfate form. It is neutral in pH, won't acidify the soil, has a low chloride content and is balanced for efficient crop production.



K-Mag benefits

Supplies essential nutrients often overlooked by traditional NPK programs

Virtually 100% water-soluble – K, Mg and S are immediately available to crops

No risk of fertilizer burn thanks to low chloride levels and a low salt index

Helps boost yields without affecting soil pH

Typical broadcast rates are 150-300 lbs/A, but soil analysis should direct usage. Additional K may be required.

Michigan, Minnesota, Idaho and North Dakota farmers plant nearly 85 percent of the sugar beet crop grown in the United States. Research reveals that optimum sugar beet and sucrose production relies on a balanced fertilization program. Nitrogen, phosphorus and potassium requirements have received intense study. Optimum performance of these nutrients also requires a readily available supply of other essential elements, such as sulfur and magnesium, to ensure rapid plant growth for early canopy closure and for optimum photosynthesis efficiency for sucrose development.

Field studies evaluating sugar beet response to applied fertilizer magnesium and or sulfur are limited. Many production field soils are believed to be adequate providers of these essential plant nutrients. However, for high yielding fields of sugar beets, large quantities of nutrients are removed in the roots and also in the shoots when harvested for livestock feed. An estimate of nutrient uptake for a 30 ton/acre yield of sugar beets reveals the crop's heavy need for all five nutrients and why a balanced nutrition program is so important.

Yield tons/acre	N	P ₂ O ₅	K ₂ O	Mg	S
	pounds update/acre				
30	255	40	550	80	45

The high levels of nitrogen and potassium needed for high yield/quality sugar beet production supports the importance of a balanced fertility program. Both sulfur and potassium are essential for optimum nitrogen use efficiency by sugar beets. In addition, magnesium is essential for optimum photosynthesis and sucrose formation. For high yield production fields in need of potassium, magnesium and/or sulfur consider adding K-Mag to the fertilizer program. K-Mag is a 100% natural source of potassium (21-22% K₂O), magnesium (10.5-11% Mg) and sulfur (21-22% S) in a virtually 100% water-soluble form that is available to plant roots immediately. Each nutrient in K-Mag performs critical roles in the production of a high yield of roots and a high concentration of sucrose in those roots.

POTASSIUM (K) helps to regulate the amount of carbon dioxide that enters leaves for use in photosynthesis (sugar formation). Potassium improves nitrogen use effectiveness since both are essential for protein formation. A shortage of potassium teamed with high night-time temperatures can cause an increase in plant respiration resulting in less sugar for storage in the roots. In addition, a balance of nitrogen and potassium is essential for improvement of yield and feed quality of sugar beet forage used for livestock feed.

MAGNESIUM (Mg) is a component of chlorophyll ... which is essential for photosynthesis (sugar formation). It teams with phosphorus to help provide energy for rapid early season plant growth. Virtually all of the energy-storage phosphate ATP and ADP molecules in cells exist in complexes with Mg ions. Also, magnesium is needed for plant cell respiration for optimum synthesis of protein, fats and sugars. Thus, magnesium is essential for photosynthesis, sucrose production, and for balance with potassium and calcium to improve root absorption of nutrients.

SULFUR (S) is closely related to efficient use of nitrogen by crops. Both are components of essential amino acids required for protein synthesis. Plant use effectiveness of one is dependent upon the availability of the other. Also, sulfur influences sugar quality. An adequate supply of sulfur is reported to help decrease the alpha amino nitrogen content of sugar.

Summary of K-Mag Benefits:

- K-Mag is a premium fertilizer that provides the essential plant nutrients - potassium, magnesium and sulfur.
- K-Mag nutrients are virtually 100% water-soluble and are immediately available to fast growing sugar beet root systems.
- K-Mag potassium teams with soil reserves to provide the high K need of sugar beets.
- K-Mag potassium promotes nitrogen use effectiveness for optimum crop growth.
- K-Mag sulfur promotes nitrogen use efficiency. It helps to improve sucrose quality.
- K-Mag magnesium is essential for photosynthesis and optimum sucrose formation.
- K-Mag magnesium works with phosphorus to deliver energy needed for rapid growth.

If your sugar beet crop needs a boost in sucrose yield and quality, examine the status of potassium, magnesium and sulfur not only in the soil but also in the beet plant. Analysis of soil and plant tissue can help assess the status of all nutrients essential for high yield/quality sugar beets. It may be time to incorporate the benefits of K-Mag into your fertilization program. Contact your K-Mag retail dealer to learn more about K-Mag.



THE MOSAIC COMPANY, 3033 CAMPUS DRIVE, PLYMOUTH, MN. 55441

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