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## ARE YOU OVERLOOKING MAGNESIUM?

**In most discussions of plant nutrition, the importance of magnesium (Mg) is too often overlooked.** Since an adequate supply of Mg is required for many key reactions in plants, both yield and quality will suffer when it is lacking.

**The yellowing of older leaves is the classic Mg deficiency symptom.** Up to one-third of the total plant Mg is found in the chloroplasts. Leaf chloroplasts are where sunlight is converted to chemical energy (sugars) through the process of photosynthesis. The appearance of yellow leaves from a lack of Mg is more common with high light intensity than in cloudy or shaded conditions.

**When plants are lacking in adequate Mg, many growth processes are stunted before any visible damage can be seen.** For example, under low-Mg conditions, plants are not able to properly transport sucrose from the leaves to the rest of the plant. Consequently, root growth is stunted and overall plant growth is reduced, long before any symptoms are noticeable. Similarly, proper development of seeds and fruit can be disrupted by a lack of sucrose transport in low Mg conditions.

**Magnesium in most soils is present in various minerals and clays.** Depending on the parent material that formed a particular soil and the types of clay present, Mg may be in abundant supply or may be lacking. Plant-available Mg is generally held on soil cation exchange sites and it can be easily measured through routine soil testing.

**When the Mg supply is inadequate, there are many excellent sources that can be used to meet crop demands.** They are commonly divided into two classes: soluble sources and semi-soluble sources. Depending on your location, the availability and price of the different products may vary. Some common North American sources are listed below.

Soluble Magnesium Sources	Semi-soluble Magnesium Sources
Kieserite: $\text{MgSO}_4 \cdot \text{H}_2\text{O}$ ; 15% Mg	Dolomite: $\text{MgCO}_3 \cdot \text{CaCO}_3$ ; 6 to 20% Mg
Magnesium Chloride: $\text{MgCl}_2$ ; 25% Mg	Hydrated Dolomite: $\text{MgO} \cdot \text{CaO} / \text{MgO} \cdot \text{Ca}(\text{OH})_2$ ; 18 to 20% Mg
Langbeinite: $2\text{MgSO}_4 \cdot \text{K}_2\text{SO}_4$ ; 11% Mg	Magnesium Oxide: $\text{MgO}$ ; 56% Mg
Magnesium Nitrate: $\text{Mg}(\text{NO}_3)_2$ ; 13% Mg	Struvite: $\text{MgNH}_4\text{PO}_4 \cdot 6\text{H}_2\text{O}$ ; 10% Mg
Magnesium Sulfate (Epsom salt): $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ ; 9% Mg	
Magnesium Thiosulfate: $\text{MgS}_2\text{O}_3$ ; 4% Mg	
Various foliar sprays	

**Two recent articles in *Better Crops with Plant Food* magazine feature more information Mg.** You can find them at this website: >[www.ipni.net/bettercrops](http://www.ipni.net/bettercrops)<.

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For more information, contact Dr. Robert Mikkelsen, Western North America Director, IPNI, 4125 Sattui Court, Merced, CA 95348. Phone: (209) 725-0382. E-mail: [rmikkelsen@ipni.net](mailto:rmikkelsen@ipni.net).