



Montag Manufacturing, Inc.

2737 Van Dorn Rd
Milford, NE 68405

3816 461st Ave
Emmetsburg, IA 50536

Phone: (712)-852-4572

Email: info@montagmfg.com

Website: www.montagmfg.com

THE AGRONOMY CORNER

MOLYBDENUM

The other of the two “M” micronutrients is molybdenum.

Molybdenum’s primary role is as a synthesizer of the primary nitrogen conversion enzyme, nitrate reductase. It is vitally important in the process of nitrogen fixation on the roots of legumes and without it the bacteria cannot fix nitrogen from the air. A third vitally important function is in the conversion of inorganic phosphorous to the plant usable organic form.

Although required in only very small amounts, without it, nitrogen and phosphorous use by the plant would be severely limited.

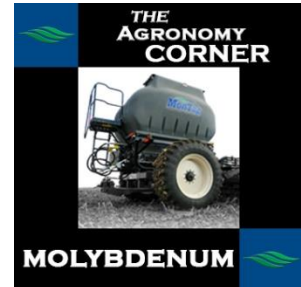
Plant available molybdenum is released from solid minerals through normal weathering processes and then undergoes various reactions in the soil. Once it is dissolved, the anions are subject to adsorption processes on clays, metal oxides of iron, aluminum, and manganese as well as organic compounds, and carbonates.

Since it affects the nitrogen enzyme system, lack of molybdenum looks like a nitrogen deficiency – a general yellowing and stunting of the plant with some burning and cupping of leaf edges. In legumes, a molybdenum deficiency is seen as a lack of nitrogen since the nitrogen fixing bacteria are greatly affected by not enough molybdenum being present.

Please note that due to its very small uses in plant growth, a molybdenum deficiency is rarely seen in normal cropping areas. Molybdenum deficiencies occur mainly in acidic, sandy soils in humid regions. Sandy soils, in particular, more typically lack molybdenum than finer-textured soils.

The availability of molybdenum, unlike most all of the rest of the other plant nutrients, increases with higher pH. Therefore a marginal deficiency can be corrected simply by adding lime to a field. On the opposite hand, the addition of high levels of acidic nutrients like sulfates can cause a deficiency.

Keep in mind both that molybdenum deficiency is rarely seen in cropping areas and that excessive levels of molybdenum are toxic to plants and high levels in a plant can be toxic to grazing animals.



If a deficiency is suspected, it can be corrected by applying any of the molybdenum containing fertilizers with either your nitrogen, phosphorous or potassium. Soluble molybdenum fertilizers can also be foliar applied. The most common method to correct a molybdenum deficiency is by application as a seed treatment since very little molybdenum is actually used by the crop.

Take aways.

Molybdenum's primary role is as a part of the enzyme system controlling nitrogen use in plants.

It is vitally important because it is involved with nitrogen availability and the conversion of phosphorous into plant available forms.

Molybdenum is rarely deficient in normal cropping areas.

The availability of molybdenum, unlike most all of the rest of the other plant nutrients, increases with higher pH.

Excessive levels of molybdenum are toxic to plants and high levels in a plant can be toxic to grazing animals.

A molybdenum deficiency can be corrected by the addition of molybdenum containing fertilizers to your normal fertility program; by foliar application of soluble forms; and by using a seed treatment.

Links to the sources for this discussion:

<http://www.cropnutrition.com/crop-nutrients-molybdenum>

<http://anz.ipni.net/article/ANZ-3240>

<http://eldoradochemical.com/fertiliz1.htm>