

## Molybdenum

Molybdenum is a chemical element essential for many aspects of plant growth and seed production as well as critical for steel production and manufacturing. Molybdenum is the 54<sup>th</sup> most abundant element in earth's crust and 25<sup>th</sup> most abundant element in the oceans. It is the 42<sup>nd</sup> most abundant element in the universe. Molybdenum is a silvery white metal which is highly resistant to corrosion and has the 6<sup>th</sup> highest melting points of all pure elements. Molybdenum does not occur naturally as a free metal on Earth. It is found in various oxidation states in minerals. It readily forms hard stable alloys and 8% of the world production is used in steel alloys including high strength alloys and super alloys. Since molybdenum does not occur naturally, it is made available by over 50 enzymes which break the bonds of the various oxidation forms of molybdenum. The most common molybdenum compounds are molybdenum disulfide and molybdenum trioxide. The largest producers of molybdenum is China (94,000 tons), US (64,000 ton), Chile (38,000 ton), Peru (18,000 ton) and Mexico (12,000 ton).

Molybdenum has the following involvement with plant production.

1. Essential for nitrogen fixation
2. Essential for functions of symbiotic nitrogen fixing bacteria.
3. Essential component in 2 enzymes that convert nitrate into nitrite and then into ammonia before it is used to synthesize amino acids within the plants.
4. Excess molybdenum causes fatal copper deficiency disease in grazing animals. High levels of molybdenum can cause diarrhea, stunted growth, anemia, and loss of fur pigment. These symptoms can be alleviated with copper supplementation.
5. If soil pH is less than 5.8 +/- 6.2 when molybdenum was applied to corn seed planted at pH 5.5, it increased yield by 15-16 bushels/acre.
6. If a molybdenum deficiency occurs in a soybean field, you will see a nitrogen fixation problem because soybeans require molybdenum to utilize atmospheric nitrogen.
7. Crops which need higher levels of molybdenum are the cabbage family, legumes (peas, beans, and clover) and poinsettias.

Products from Nutrient Agri Products which contain Molybdenum are: 11509 Sodium Molybdate Dihydrate 39.6% which comes in 25 Kg boxes. Call Nutrient Agri Products in Papillion, Ne. at 402-502-4854 to place your orders.