



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

ZINC

Zinc was one of the first of the micronutrients to be recognized as essential for plant growth.

Like copper, zinc is a main activator of enzymes that regulate the early plant growth process. It is vital for reproduction of seed and fruiting. Zinc is involved with root system development; photosynthesis; formation of plant growth regulators; and crop stress protection. Zinc also teams up with nitrogen, phosphorous and potassium in many other plant development systems. Further, zinc is required in protein synthesis.

Zinc is immobile within plant tissue. Thus, look for deficiencies on new growth. This immobility means that, like boron, the need for zinc must be met with zinc ions moving up the plant from the roots.

Soils require zinc in very small amounts. It has been estimated that about a half-pound of zinc is needed per acre for 180 bushel corn production; however, lack of zinc can limit plant growth and restrict the yield of the crop. This is especially true for corn.

Zinc deficiencies are growing with the high yield environment of modern agriculture. Recall that zinc is involved with the EARLY growth processes. Thus, anything that restricts the availability of zinc will cause early plant growth issues. This is truer with corn than soybeans as corn is planted earlier and earlier into cold wet ground that restricts early root growth, thus restricting early zinc uptake. Also the presence of high amounts of residue put extra strains on the small growing plants.

The deficiencies of zinc are mainly reported on organic soils and on sandy soils that are low in organic matter. They occur more readily in cold wet spring weather and are related to reduced root growth and activity. Zinc uptake, like copper, decreases as soil pH increases. Increased phosphorus and iron availability in soils decreases zinc uptake by plants.

See any of the many internet or university sources of zinc uses by plants to see the many ways zinc deficiencies manifest themselves.

The best method to reduce zinc deficiencies is to apply zinc as zinc sulfate in your fertilization program.



Take aways.

Zinc is a main activator of enzymes that regulate the early plant growth process. It is vital for photosynthesis and reproduction.

Zinc is essential for plant development but it is used in very small amounts by the plant. However, high yields are impossible without it.

Zinc is immobile within plant tissue. Look for deficiency signs on new growth.

Zinc deficiencies are growing with the high yield environment of modern agriculture due to restricted early root growth, especially in corn.

High pH soils can cause zinc deficiencies since uptake diminishes with increasing pH. So also can the over abundance of iron, phosphorous and aluminum.

A soil applied form of zinc is the best way to prevent zinc deficiency.

Links to the sources for this discussion:

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

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