

COPPER FACTOR



Deficiency Symptoms	Chlorosis or yellowing develops, starting on the leaf edges. The leaf tips wither and droop, and turn yellow to gray and die on grain crops. The leaves curl and twist and fail to unroll. "Die-back" occurs in tree crops.
Functions In Plant	Necessary in Chlorophyll formation and in photosynthesis and seed formation. Is a part of certain essential enzymes. Acts as a catalyst in certain carbohydrate and protein building reactions.
Mobility In Plant	Relatively immobile.
Mobility In Soil	Depends on organic level (can leach from high organic, acid soils). Will leach from very sandy soils.
Influence Of Soil ph	Copper availability goes down as pH rises from 5.0 - 8.0. Low Copper is also prevalent in high organic, very acid soils (peats and mucks).
Factors Affecting Availability	(1) Soil pH (2) Organic matter. Soils with low organic matter and low pH (below 4.7) will precipitate Copper
Factors Affecting Utilization	(1) pH (2) Excess Phosphate may depress uptake of Copper (3) Heavy Nitrogen fertilization can intensify Copper deficiencies.
Level In Soil	Available Copper may be 1-200 lbs. per acre.
Adequate Level In Plants	Soybeans 10 ppm. Cotton 11 ppm.
Correcting Deficiencies	(1) Plowdown (2 - 4 lbs. Copper per acre) (2) Apply 0.2 – 1.0 lb. per acre in fertilizer (3) Spray with Copper Sulfate.
Sensitive Crops	Small grains; (cotton and soybeans are moderate).
Remarks	Plants vary widely in their response to Copper. The stage of growth exhibiting the greatest need for Copper is in the early stages-before flowering. Copper can be toxic at quite low levels, possibly by depressing Iron uptake.