Functions and Symptoms of Deficiency of Micronutrients in Soybeans

Boron (B)

Helps maintain and regulate other nutrients
Aids production of sugar and carbohydrates
Essential for seed development and cell wall formation
Essential in germination of pollen grains and growth of pollen tubes
Promotes maturity
Affects nitrogen and carbohydrate ratio

Deficiency Symptoms
Yellowing, death of growing point, deformed leaves with discolored areas
Photo Credit-www.extension.org

Copper (Cu)

Important for reproductive growth
Aids in root metabolism and helps in the utilization of proteins
Catalyzes several plant processes
Major function in photosynthesis
Major function in reproductive stages
Increases sugar content
Intensifies color

Deficiency Symptoms
Light yellowing, leaf tips turn brown and sometimes twisted, young leaves looked wilted

Chloride (Cl)

Aids plant metabolism

Deficiency Symptoms
Yellowing and wilting of young leaves

Iron (Fe)

Essential for formation of chlorophyll
Sources of iron are the soil, iron sulfate, iron chelate
Promotes formation of chlorophyll
Acts as an oxygen carrier

Deficiency Symptoms
Yellowing between the veins of new leaves
Photo Credit-http://cropwatch.unl.edu/soils/soybean-nutrients

Manganese (Mn)

Functions with enzyme systems involved in breakdown of carbohydrates, and nitrogen metabolism
Functions as a part of certain enzyme systems
Aids in chlorophyll synthesis
Increases the availability of P and CA

Deficiency Symptoms
Yellowing between the veins of new leaves (similar to iron deficiency)
Photo Credit-http://cropwatch.unl.edu/soils/soybean-nutrients

Molybdenum (Mo)

Helps in the use of nitrogen
Required to develop "nitrate reductase" which converts nitrates to ammonium
Important in the formation of legume nodules

Deficiency Symptoms
Very similar to nitrogen deficiency – yellowing of young plants,
yellowing of oldest leaves
Photo Credit-www.agprofessional.com

Zinc (Zn)

Regulates consumption of sugars
Part of the enzyme systems which regulate plant growth
Aids plant growth hormones and enzyme system
Necessary for chlorophyll production
Necessary for starch formation
Aids in seed formation

Deficiency Symptoms
Shorter growth with reduced internode length, new leaves are smaller
Photo Credit-http://cropwatch.unl.edu/soils/soybean-nutrients