

Manganese Deficiency Symptoms

Manganese plays an important role in the following:

- Crucial in protein synthesis
- Largely responsible for enzymes activation
- May speed up germination and maturity
- Necessary for nitrate assimilation/reduction
- May increase availability of phosphates and calcium



Factors which may lead to Manganese deficiencies in the soil:

- High organic matter soils
- Manganese is immobile in the plant, so symptoms appear first on younger leaves
- Excessive phosphate, calcium, iron, zinc, or copper levels
- Soils alternately waterlogged, then dried
- Most available at low soil pH levels, reduced availability at higher levels (example. 7.5 and up)

Manganese deficiency symptoms:

- Broadleaf crops show general mottling in which veins remain green and yellowing occurs between veins
- In small grains, grayish areas appear near the base of younger leaves
- Leaves and leaf tips show gray to white specks



Manganese Deficiency on Soybeans



Manganese Deficiency on Wheat



Manganese Deficiency on Cotton



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