Identification of Nutrient Deficiencies

WUXAL®

Younger plant organs

Nutrients remain primarily in old organs.

Limited mobile nutrients: S, Cu, Fe, Mn, Mo, Zn

Immobile nutrients: B, Ca

Which symptoms occur?

Interveinal chlorosis — Yes →
- Narrow stripes full length of leaf = **Iron (Fe)**
- Brown specs and bronzing = **Manganese (Mn)**
- Bleached bands along mid-rip = **Zinc (Zn)**

No ↓

Growing tips are dying — Yes →
- Leaves curl and are yellow = **Calcium (Ca)**
- Abnormal growth, pale leaves = **Boron (B)**

No ↓

General yellowing — Yes →
- Leaves and veins pale = **Sulphur (S)**
- Terminal dieback, leaves wilt = **Copper (Cu)**

No ↓

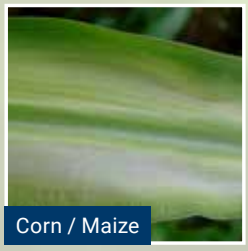
Interveinal mottling — Yes → Leaves wilt and die along margin = **Molybdenum (Mo)**



Fe deficiency
IPNI, A Boopathi Raja



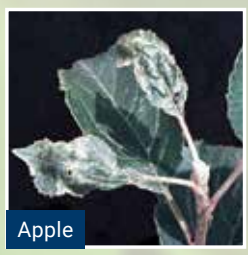
Mn deficiency
Bergmann, Jena



Zn deficiency
IPNI, M.K. Sharma and P. Kumar



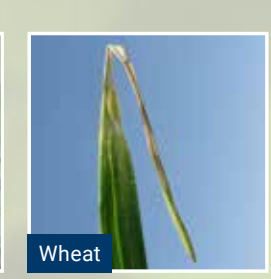
Ca deficiency
IPNI, M.K. Sharma and P. Kumar



B deficiency
Bussler, Berlin



S deficiency
IPNI, M.K. Sharma and P. Kumar



Cu deficiency
IPNI, M.K. Sharma and P. Kumar



Mo deficiency
Bergmann, Jena

Older plant organs

Nutrients can be translocated into young organs.

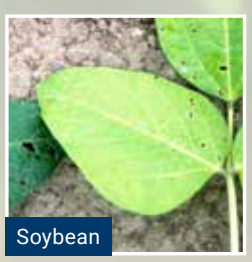
Mobile nutrients: N, P, K, Mg

Which symptoms occur?

Chlorosis — Yes →
- Mid-rib / Complete leaf = **Nitrogen (N)**
- Along margin = **Potassium (K)**
- Interveinal = **Magnesium (Mg)**

No ↓

Purpling — Yes → Stunted growth = **Phosphorus (P)**



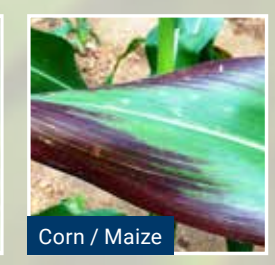
N deficiency
IPNI, N. R. Usherwood



K deficiency
IPNI, Claudinei Kappes



Mg deficiency
IPNI, L. Prochnow



P deficiency
IPNI, U.K. Shanwad

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