

**Soil factors associated with nutrient deficiencies and the nutrients of concern**

Soil pH <5.5 P, Mg, Mo, Zn  
>7.5 Fe, S, Mn, Zn

Sandy soils prone to leaching  
N, B, Cl, S, Zn

**Other Indicators and notes**

Mg: Rust colored specks and purple/reddish hue around margins

Mo: Symptoms can be seen throughout the whole plant

B: Thick leaves in cotton, redness in legume and canola.

Often symptoms that are seen while soils are cold and wet, will likely disappear when soils warm.

**Keywords:**

**Chlorosis:** Yellowing of tissue **Interveinal:** Between veins **Margin:** Outer edge of leaf

**Mid-rib:** Central vein **Mottling:** blotches of color **Terminal Bud:** Growing point

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**Nutrient Deficiency ID**  
**Pete's Sheets**

Oklahoma State University, Department of Plant and Soil Sciences  
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**↓ Symptom in Old Growth**

Chlorosis Yes → [ Along mid-rib = Nitrogen  
Along margin = Potassium  
Interveinal = Magnesium ]  
No ↓

Purpling Yes → Stunted growth = Phosphorus



**↓ Symptom in New Growth**

Interveinal Chlorosis Yes → [ Narrow stripes full length of leaf = Iron  
Bleached bands along mid-rib = Zinc  
Brown specs and bronzing = Manganese ]  
No ↓



Terminal bud is dying Yes → [ Leaves are yellow = Calcium  
Leaves are white/light brown = Boron ]  
No ↓

General yellowing Yes → [ Leaves & veins pale green/yellow = Sulfur  
Terminal dieback, leaves wilting = Copper ]  
No ↓

Chlorotic Spots Yes → Wilting of leaves = Chlorine  
No ↓

Interveinal Mottling Yes → leaves wilt and die along margin = Molybdenum  
No ↓



Collect Plant and Soil samples for analysis