

A Key to Nutrient Deficiency Symptoms	
Symptom	Element Deficient
Older Leaves Affected	
Effects mostly generalized over whole plant, lower leaves dry up and die	
Plant light green, lower leaves yellow, drying to brown, stalks become short and slender.	Nitrogen
Plants dark green, often red or purple colors appear, lower leaves yellow, drying to dark green, stalks become short and slender.	Phosphorus
Effects mostly localized, mottling or chlorosis, lower leaves do not dry up but become mottled or chlorotic, leaf margin cupped or tucked	
Leaves mottled or chlorotic, sometimes reddened, necrotic spots, stalks slender.	Magnesium
Mottled or chlorotic leaves, necrotic spots small and between veins or near leaf tips and margin, stalks slender.	Potassium
Necrotic spots large and general, eventually involving veins, leaves thick, stalks short.	Zinc
Young Leaves Affected	
Terminal buds die, distortion and necrosis of young leaves	
Young leaves hooked, then die back at tips and margins.	Calcium
Young leaves light green at base, die back from base, leaves twisted.	Boron
Terminal buds remain alive but chlorotic or wilted, without necrotic spots	
Young leaves wilted, without chlorosis, stem tip weak	Copper
Young leaves not wilted, chlorosis occurs	
Small necrotic spots, veins remain green	Manganese
No necrotic spots	
Veins remain green	Iron
Veins become chlorotic	Sulfur
Source: Davies and Galston. 4 th Edition. The Life of the Green Plant.	