

PLANT NUTRIENT GUIDE

Micronutrients are needed in small amounts, but shortages or excesses can still affect plant health.

MICRONUTRIENTS

ELEMENT	WHAT IT DOES	TOO MUCH	TOO LITTLE
Iron (Fe)	Needed for chlorophyll formation. Add in chelated form.	Rare, except in flooded soils.	Interveinal chlorosis on new growth, progressing from yellow to white. Associated with poor drainage, poor oxygenation, nematode attack, and soils high in calcium, manganese, phosphorus, copper or zinc.
Boron (B)	Promotes crop maturity, water balance, flower set and yield; fixes ascorbic acid in root tips.	Blackening or death of tissues.	Failure to set seed; death of apical buds; incomplete flowers; collapsed tulip stems; rosetted or distorted shoot tips; short internodes; thick, brittle or corked leaves; aborted leaves and flowers.
Zinc (Zn)	Acts as a catalyst in the use of other nutrients.	Appears as iron deficiency and interferes with magnesium.	"Little leaf"; smaller leaves; short internodes; distorted or puckered leaf margins; interveinal chlorosis; rolled or curled leaves.
Copper (Cu)	Works with iron in chlorophyll formation.	Appears as magnesium deficiency and may occur at low pH.	Small or misshapen new growth; wilting; rolled or curled leaves; variable chlorosis; rapid necrosis of young leaves; smaller, paler flowers or no flowers. May occur in peat soils.
Manganese (Mn)	Acts as a catalyst in the use of other nutrients.	Reduced growth; brown leaf spots; appears as iron deficiency; associated with acidic conditions.	Interveinal chlorosis followed by brown spots, producing a checkered red effect.
Molybdenum (Mo)	Essential for nitrogen fixation in legumes and nitrogen metabolism in other plants. The cabbage family has been studied most closely. Deficiency resembles iron chlorosis.	—	Interveinal chlorosis and twisted leaves.
Chlorine (Cl)	Trace levels help with root rot.	Salt injury; leaf-tip burn; increased succulence.	Leaves wilt and bronze, then become chlorotic and die.
Cobalt (Co)	A transplantation aid; needed for nitrogen fixation.	—	—

Before adding a micronutrient, check soil pH. A nutrient may be present but unavailable to the plant because the pH is outside the useful range.