The following trace elements may be toxic:

- aluminum
- arsenic
- barium
- cadmium
- chromium
- cobalt
- lead
- lithium
- mercury
- selenium
- silver
- strontium
- tin
- vanadium

The pH optimum depends upon soil organic matter and clay content for clay and loam soils:

- 6.5 to 7 is ideal
- over 9 is too alkaline

The ECE is a measure of the soil salinity:

- 1-2 affects a few plants
- 2-4 affects some plants,
- > 4 affects many plants.

The degree of toxicity depends upon the pH of the soil, soil texture, organic matter, and the concentrations of the individual elements as well as to their interactions.

The pH optimum depends upon soil organic matter and clay content for clay and loam soils:

- under 5.2 is too acidic
- 6.5 to 7 is ideal
- over 9 is too alkaline

The ECe is a measure of the soil salinity:

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