CASE

Curriculum for Agricultural Science Education

Principles of Agricultural Science – Plant

Micronutrients

Unit 6 – The Growing Environment
Lesson 6.1 Plant Food

Trace Elements

The term trace element is commonly used to refer to micronutrients because of the low quantities required for plant growth.

The eight micronutrients are:	
Boron (B)	Manganese (Mn)
Chlorine (Cl)	Molybdenum (Mo)
Copper (Cu)	Nickel (Ni)
Iron (Fe)	Zinc (Zn)

Keeping Track

Throughout this presentation you will be provided a listing of micronutrients by function.

- Set up the following table in your *Presentation Notes*:

	Function:
B	
Cl	
Cu	
Fe	
Mn	
Mo	
Ni	
Zn	

Essential Trace Nutrients for Photosynthesis

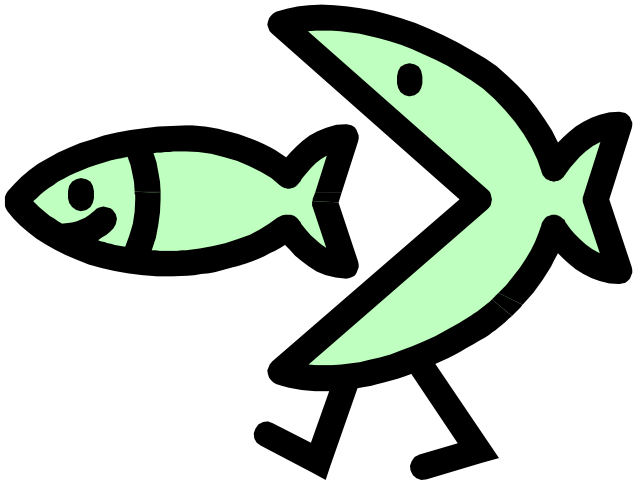
Some micronutrients have a role in the assistance with photosynthetic function.

- Copper
- Iron
- Manganese
- Zinc

Micro-Effect Involving Enzymes

The following micronutrients influence the reaction of enzymes needed for plant metabolism and function:

- Copper
- Manganese
- Molybdenum
- Nickel
- Zinc



Cell Development Micronutrients

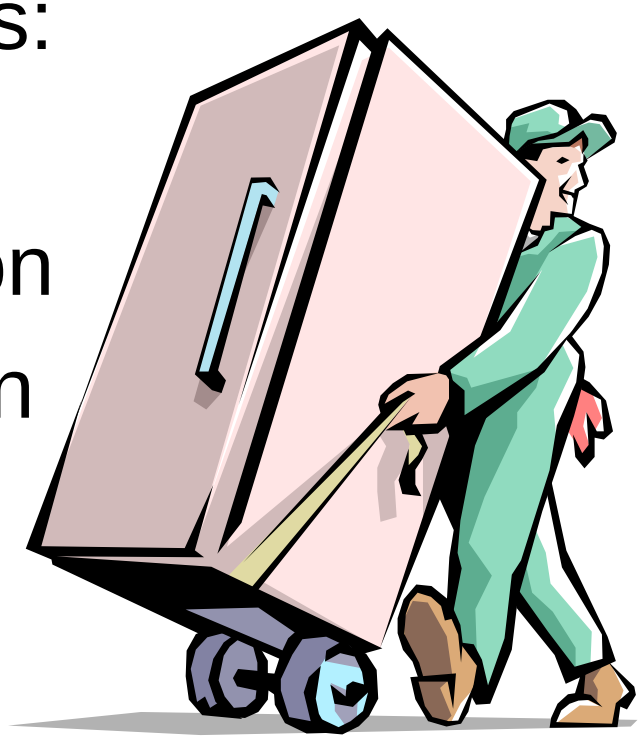
The following micronutrients affect cell development in plants:

- Boron
- Iron
- Zinc

Translocation Enhancers

These micronutrients aid in the translocation of substances within plants:

- Boron – sugar translocation
- Iron – oxygen translocation



Influences on Other Elements

Some micronutrients are responsible for interaction with metabolism and use of other elements:

- Boron – nitrogen
- Chlorine – phosphorus uptake
- Manganese – phosphorus & calcium availability
- Molybdenum – nitrogen & phosphorus uptake
- Nickel – nitrogen metabolism and fixation

Effects on Plant Maturity

The following micronutrients effect the maturity rate of plants:

- Boron
- Chlorine
- Copper

Other Functions in Plants

- Boron – pollen formation and growth
- Copper – intense color, flavor, and sugar content
- Nickel – aids in disease resistance

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