



# PLANTING INFORMATION



## PLANT NUTRITION & WHY WE RECOMMEND ORGANIC FERTILIZER AND MULCH

All plants utilize these minerals.

C Carbon  
H Hydrogen  
O Oxygen  
P Phosphorus  
K Potassium  
N Nitrogen  
S Sulfur  
Ca Calcium

Fe Iron  
Mg Magnesium  
B Boron  
Mn Manganese  
Cu Copper  
Zn Zinc  
Mo Molybdenum  
Cl Chlorine  
Ni Nickel

Their relative abundance is roughly the same order, although a few will change places depending upon the type of plant or the age of it. Young plants are higher in nitrogen. Older plants collect calcium as part of their wood. Animal bodies contain 16 of the 17 minerals found in plants. Some plants contain more than 17 minerals, though in many they may not be essential.

The main structure of a mature plant is the cell wall (cellulose a.k.a. wood), a converted sugar molecule containing H, C, and O. The cell membranes are mostly protein which is made of C,H,O, and N. The sap contains water and a significant amount of K. Most of the other minerals are involved in energy capture and transfer, or with enzymes.

Four of these (C,H,O,Ni) are always present in air, soil or water and need not be added. We need to be aware of the presence of the other 13. Most homeowners cannot juggle these with any sense of accuracy.

### CROP ROTATION (replant syndrome)

The ground surrounding any living plant will accumulate dead roots of that plant over time. When an annual farm crop is harvested there are suddenly a lot of dead and dying roots of that crop. If the same or related plant is installed immediately, it will be stunted, often severely, fighting diseases associated with the decaying root tissue. Unrelated plants are generally not affected.

If you desire to replant immediately you can always rotate the soil instead. In Apple orchards replacement of ½ cubic yard (3 feet by 3 feet by 18 inches deep) of soil (from a location away from the Apple trees) gives excellent results. In Rose gardens replacing about 1 cubic foot of soil gives good results. If the plant being installed has its own soil ball the replacement volume can be reduced. You must also do that same soil replacement when installing a plant within the root zone of an existing related plant, such as, when squeezing in a new rose plant in-between older, established rose bushes.

Double-digging a bed is another method of soil rotation. The top 12" layer of soil is exchanged with the 12" layer directly below it. Because plants don't root much deeper than 12", the underlying layer will contain very few roots of the previous crop.