A WORLD UNDER THE SOIL

Under the soil surface is a New World in itself. When we take a closer look underneath the soil layer we see more than just dirt, we find new life, important microorganism life. Without that microorganism life existing in the soil, life on earth would not exist. Why you may ask? If you go back to the basics of where everything around us comes from, we would see that it all comes directly or indirectly from the soil. Plastics, minerals, metals, wood, food, milk that is obtained from the cows that eat the grass, air from the plants that grow on our planet, rains which create our fresh water. We could give you many more that would fill this catalog. Healthy fresh smelling soil is made from Aerobic (with air) bacteria (microorganisms).

Aerobic (with air) bacteria

They are also called the beneficial bacteria that are responsible for breaking down the organic matter in the soil into useable forms for the plant to pick up. Our **CropMaster®SuperHume®** will help them become more available for the plant to pick up. They are also responsible for the nitrogen cycle to become complete during the nitrification stage. That is where the ammonia will change to the nitrate form, which is the only form the plant can use. These bacteria must be present for nitrification to occur successfully. Also, without these bacteria you will have little to no crop residue break down. This means last year's crop waste - stalks, leaves, hulls or roots will be seen in the following year's crop. Why is it important for crop residue to breakdown for the following year's crop? Well look at it this way; You placed your money into feeding those stalks, leaves, hulls or roots, with last year's fertilizers. They contain a vast supply of nutrients that costs money to replace. It is like throwing away free fertilizer. An aerobic bacterium also converts organic matter from this crop residue. An example of how much nutrients properly fertile soil (Organic matter with aerobic bacteria) can contain.

** Soils containing 4% organic matter in the top 7 inches has 80,000 pounds of organic matter per acre. Those 80,000 pounds of organic matter will contain approximately 5.25% nitrogen amounting to 4,200 pounds of nitrogen per acre. Assuming a 5% release rate during the growing season, the organic matter could therefore supply 210 pounds of nitrogen. **

If the organic matter is allowed to degrade, then traditional fertilizers would need to be purchased to supply the crop due to lost organic matter nitrogen. The soil also contains other mineral particles such as potassium, phosphorus, magnesium and several other minor elements. Without proper soil management those minerals will never become available to the plant. Also once the soil is balanced in fertility and in proper ratios. Each foliar spray application will allow the roots of the plant to release organic acids which will break down minerals and nutrients so the plant can uptake them in the proper form

When soils are low in organic matter they will definitely be subjected to erosion in one form or another. The eroded soils typically contain about three times more nutrients than the soil that is left behind. When the soils are not managed properly, so much is lost in way of free energy provided by the soil. The root of any problem begins at its foundation; agriculture is no exception to this rule. If the foundation is not properly adjusted, the entire crop cycle will suffer. The farmer will always be forced to face new problems that result from a poor start and he will always play catch up. Without the proper foundation, food will also continue to be grown without the nutritional values of previous years.

For any one organization to properly manage crops via the soil foundation, they must begin with the knowledge of the soil condition through a soil test. The farmer must know where he stands in order to gain success from his crop.

Soils will always have to be fed in one way or another via manure, crop rotation, composting, and crop residue degradation or via quality fertilizers. But the days of placing tons of fertilizer per acre/hectare are no longer necessary with the innovated technologies gained today. Leader's in future global trade of food commodities will be the ones who can understand these problems and apply the simple technologies to correct them.

BACK TO INDEX