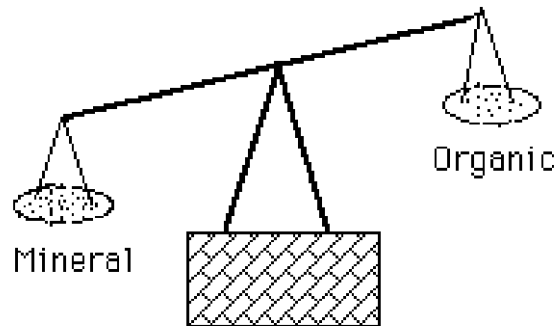


ORGANIC SOILS

In mineral soils, a 6 2/3" plow depth is considered to weigh 2,000,000 lbs/A, but organic soils may average only 1,300,000 lbs/A. Organic soils by definition contain over 20% organic matter and may range up to 85%. To show this high organic matter a "combustible O.M. test" must be used. Tucas and Warncke have both made reports on organic soils. The following points will outline key agronomic considerations when working with organic soils.

1. Because of the extreme weight difference per volume of soil and the shrink incurred when drying, an average conversion factor of .65 should be used to convert the ppm test readings to lbs/A.



Organic Soils Weigh Less than Mineral Soils

2. Organic soils or peat "do not improve the amount of moisture available to the plant because of the higher wilting point and the marked decrease in volume weight of the soil."
3. The Cation Exchange Capacity does not show that much difference from a mineral soil again because of the weight difference. The CEC of a muck may be five times greater than a loam soil but a fibrous peat will be about the same.
4. In most organic soils, the ideal water or soil pH range is 5.5 to 6.0. On organic soils, pH's over 6.0 can reduce the availability of manganese, zinc, boron and phosphorus.
5. Organic soils contain large amounts of potential nitrogen. However, during a given growing season, only small amounts are mineralized into available "N". How much is released in any year is governed by the nitrogen content itself, temperature, moisture, acidity and aeration, all of which affect soil microbiological activity. In

the northern states, most organic soils respond to some nitrogen in the spring when soils are wet and cold.

6. Liming improves the availability of phosphorus in mineral soils but decreases its availability in organic soils that are low in iron and aluminum.
7. Organic soils contain low amounts of potassium. Unlike mineral soils, organic soils do not fix nor strongly adsorb potassium, so the nutrient is more mobile, especially if they receive excessive amounts of drainable water.
8. Salinity can be a problem, since organic soils often receive liberal rates of fertilizer. Critical salinity values are about twice those suggested for loam soils.

Organic soils have some specific micronutrient problems. After testing and more specific information is in hand, your Midwest Laboratories representative will assist you in further interpretation.