

Flooding of your farm acreage can be devastating to your future profit I am sure you may have been hit or seen a farm acreage flooded. The plant nutrient losses can be devastating because on the nutrients looses which can have a market effect by knowing what may happen and how the plant nutrients react to the free flowing elements during flooding which may help you to avoid certain deleterious effect . Keep in mind that all the elements carry a + (plus) or a (-) negative charge. These elements react with each other which may cause the chemical entity to leach or stabilizes to a degree not to be leachable. In other words like charges repel itself + < >+ or - < >- whereas the unlike charges > - + < attract itself and cannot not be leached with water. Alternate flooding and drying of the soil is especially detrimental to both fertilizers and soil including native sources of nitrogen phosphates. The changes in plant nutrition and its availability resulting from flooding are due to biological oxidation. The reduction processes brought into play from the flooded soil.by exclusion of oxygen from the soil.

The presence of a layer of water over the surface restricts the movement of oxygen to the soil and causes micro-organism that ordinary use of oxygen to switch to other substances in order to carry on respiration. The reduction and the chemical reaction accompany for much of the change in nutrient soon after the soil is flooded the oxygen in this case drops to near zero behavior in flooded soils. What is really the consequence of flooded water that covers the oxygen as soon as the soil is flooded? In reality the oxygen level drops to near zero.

The consequence of flooding is the interruption of the normal process of gaseous- exchange between the air and the soil. As soon as that soil is flooded the oxygen level is accompanied by an increase of other gasses produced.

It has been reported that the gases vary in composition from 1% to 20% in carbon dioxide by 1% to 95% , nitrogen 15-79% in CH₄ and 0 to 12.0% in H₂ by microbial re aspiration carbon dioxide , 10 to 95% , methane gas and hydrogen accumulation in flooded soil.

The composition of gases varies with time after flooding & is depending on soil and other environmental conditions, microbial inhabitants and the nature of the organic and inorganic substances.

The restrictions of oxygen does not mean that the entire soil profile of flooded soil, is uniformly low in oxygen. . Normally the oxygen content is relatively high means extending from a few millimeters to 1 centimeter below the soil-water interface. Flood water always contains some of the chemicals in a dissolved state both from the atmosphere or from various hydrophytes carrying in the water.

The oxygen is available from various biological processes. In the mud immediately beneath the thin oxygenated layer, the oxygen content drops sharply to a degree that is virtually none existent. Flooding virtually excludes atmospheric form from entering the soil. Nitrate in flooded soil is denitrified into nitrogen gas or oxide or both.

Phosphates being flooded can be found in organism or inorganic forms such as aluminum phosphate, iron phosphate, calcium phosphate, mono, and die or tricalcium phosphates.

As you will be able to see and feel that the flooded agricultural soils have as very negative effect on the soil fertility which plays a very negative effect on the need of reviving the reproduction of the microbes. page 1/11 through 11/11. The date 9/7/2010 reports that there are more microbes in a teaspoon full of soil as there are people on the earth. Soils contain about 8 to 15 tons of bacteria, fungi protozoa, nematodes, earthworms and arthropods (WITH SCALETONS).

Based on the literature review the Humic and Fulvic acids yields some crop increases. It is unfortunate since the Humic and Fulvic acids contain about 72 different chemicals to determine what products within the Humic and or Fulvic acids

contribute specifically to the yield Increase. Considering the reported of yield increase by Humic and Fulvic acid which contribute to the yield to yield increase. Unfortunately one may not be able to tie down an increase to a specific chemicals.2010 As a result one cannot really determine what plant foo elementout of the72 plant food elements reported a yield increase.



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A handwritten signature in black ink that reads "Joseph Neubauer".

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