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***Soil Redox Potential in Constructed Wetlands for Wastewater Treatment***

Wastewater treatment wetlands use microbial processes to remove nutrients and pathogens in wastewater. To determine where these actions take place in the system, we can use redox testing and get a better look at the electrical potential gradient in the soil media. A soils electrical potential indicates the most probable electron acceptors and can explain specific characteristics about the system. This research will explore redox potential at various locations in a wetland system including the redox potential right next to the root. It is assumed that higher readings indicating higher oxygen level will decrease with depth. Due to the diffusion of oxygen near the root, I expect to see high reading near the roots as well. Results will be compared to a bulk reading taken in the center of the column. The data from this experiment will indicate the redox potential of different locations in the soil media, along with readings taken directly at the root. Comparisons will be made between six different plant species and three different carbon loads. Measuring the redox gradient in the soil media and the surrounding the root system, can provide essential information about nutrient breakdown throughout the system. The information explored and collected in this research will improve the ability for us to understand the treatment system as a whole and will aid in the knowledge of how constructed wetlands treat wastewater.