CATION EXCHANGE CAPACITY AND CARBON QUALITY OF BIOCHAR AND BIOCHAR AMENDED SOILS

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ABSRACT

Biochar has long been looked at for its ability to increase soil fertility and its potential for long-term carbon (C) sequestration has generated an enormous amount of interest. I investigated Diacarbon woodchip biochar's ability to facilitate nutrient retention in soil through a six week corn growing season and stabilize C in a soil community in a 49 day incubation. CEC analysis was done and the 49 day incubation was done at three temperatures—16^{o}C, 21^{o}C, and 26^{o}C. There was a direct relationship between increasing incubation temperatures and respiration rates and the addition of biochar had a negative effect on soil respiration. With the addition of biochar the soil was able to maintain its CEC better and coupled with the addition of an organic fertilizer, biochar has the ability, not only to increase yield, but to increase a soil's resistance to changes in temperature.