



Evaluation of Biochar Applications in Ten Illinois Soils

Researchers Nancy Holm, Elizabeth Meschewski, and B.K. Sharma of ISTC along with Kurt Spokas – U.S. Department of Agriculture, Agricultural Research Service, St. Paul, MN – and Lacy Walsh, ISTC's 2013 Summer Intern from Illinois State University, investigated biochar applications in 10 Illinois soils. The group examined the chemical, biological, and physical properties of the 10 different soils when mixed with the biochar at three concentrations (0%, 1%, and 5% by volume). Biochar was made from three feedstocks (hardwood; corn stover; and *Miscanthus*) using various treatments (raw, gasification, slow pyrolysis, and burned). The hardwood and *Miscanthus* received only the slow pyrolysis treatment while the cornstover received all four for comparison purposes. These 10 soils represented a range of productivity indexes from the Midwest. Laboratory germination/growth studies of corn (*Zea mays*) were conducted along with assessment of greenhouse gas emissions (GHG) implications of biochar additions. Samples of the soil/biochar mixtures from the germination/growth and GHG studies were collected for microbial analysis. The data obtained in this study will serve as a guide for understanding potential effects of biochar as a soil additive on plant growth, microbial activity, and greenhouse gas emissions in different soils.

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Meet the Scientists

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- Elizabeth Meschewski
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