Changes in Soil Attributes Following Three Years of Swine Manure Application in No-Tillage Sorghum. (S08-wienhold072910-Poster)

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Abstract:

Manure is usually applied as a source of nutrients for crops. The potential exists for a number of physical, chemical, and biological soil properties to be effected by manure application. This study was conducted to compare selected properties for soil receiving no fertilizer, inorganic N and P, manure from swine fed a low phytate corn diet, or manure from swine fed a traditional corn diet. Treatments were surface applied to no-tillage dryland sorghum planted on a Sharpsburg silty clay loam (Fine, smectitic, mesic Typic Argiudolls). Many physical (water content and bulk density), chemical (electrical conductivity, inorganic N), and biological soil properties (potentially mineralizable N) exhibited year-to-year differences. Year-to-year differences were likely due to differences in weather and crop performance among years. Other chemical (pH, organic matter content, particulate organic matter) and biological properties (microbial biomass C) responded to the nutrient treatments. Treatment responses are due to inorganic fertilizer and manure effects on soil properties.

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Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 4:00-6:00 pm
Poster Board Number: 2130

Keywords:

swine manure, soil properties, dryland sorghum, nutrient management