

ORGANIC MATTER IN REMNANT AND RESTORED CAJUN PRAIRIE SOILS

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Abstract. Stable organic matter (OM) or humus is a product of decomposition of decaying tissues of all organisms in the soil. OM binds with nutrients such as iron (Fe), manganese (Mn), zinc (Zn) and copper (Cu). OM contains humic and fulvic acids. The decomposed tissues are converted into small molecules (monomers) that further undergo a series of humification (polymerization) processes forming large molecules of humic and fulvic acids. Two restored prairies at Louisiana State University at Eunice (LSUE) campus (burned and mowed every January) and city of Eunice (burned every January), and two remnant prairies (under 'natural' management practices) at Frey and Estherwood communities were used in this study. Soil samples from each prairie were taken in July 2005, November 2005 and March 2006. Humic and fulvic acids were found in equal amounts in both remnant and restored prairies. However, OM was significantly higher in remnant than in restored prairies, suggesting that there are more types of OM (the monomers, such as sugars and amino acids) present in remnant than in restored prairies. Iron and manganese were significantly higher in restored than in remnant prairies, suggesting that the annual management practices in restored prairies have faster rates of OM mineralization and OM decomposition that generate greater Fe and Mn concentrations in the soil than the rates of the 'natural' management practices in remnant prairies.