Involvement of Abiotic and Biotic Processes in Carbon Storage. (S02-matocha093246-Oral)

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Abstract:

It has been recognized that humic substances are more resistant to degradation than nonhumic substances. Thus, it is desirable to promote the humification process to store carbon. The relationship between humification indicators and soil management is not clearly understood. We are investigating the impact of tillage and nitrogen fertilization rate on the nature of humic substances and biotic and abiotic catalysts. Surface soil samples were taken from a long term tillage experiment. Soil phenoloxidase activity was greater in the no tillage management system when compared to the conventional tillage system. Nitrogen fertilization rate was inversely related to soil phenoloxidase activity in the no tillage system but no consistent trends were evident in conventional till. Humic acid fractions from conventionally tilled soil plots were more humified than no tillage soil plots based on ultraviolet visible spectra.

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