Seasonal Changes in Enzymatic Activity in Soils Receiving Different Organic Amendments. (S03-kremer172752-Poster)

Authors:

- K.C.Park* - *University of Missouri, Columbia*
- R.J.Kremer - *USDA-ARS, Columbia, MO*

Abstract:

Soil management strategies that include organic amendments and/or biodynamic fertilizers affect soil quality, including soil enzymes, and may lead to productive, environmentally sound agroecosystems. We determined the relationship of microbial parameters of soil quality with various organic soil amendments. Four organic sources (poultry litter, municipal compost, spring oat and red clover cover crops) with or without biodynamic fertilizer (Effective Microorganisms; EM) were investigated. Soil dehydrogenase and esterase (as fluorescein diacetate (FDA) hydrolysis) activities were evaluated in early spring and monthly from July through October. Soil dehydrogenase increased in all soils and sampling dates after application of organic amendments. Soil esterase (FDA hydrolysis) increased only at final date but no differences among treatments were detected. EM combined with both cover crops and municipal compost generally increased soil dehydrogenase at all sampling dates. Results suggest soil dehydrogenase activity is a sensitive biological indicator for detecting improvement in soil quality due to application of organic amendments.

Corresponding Author Information:

Robert Kremer
USDA-ARS
302 ABNR Bldg
Columbia, MO 65211

phone: 573-882-6408
fax: 573-884-5070
e-mail:

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 2:00-4:00 pm
Poster Board Number: 1730

Keywords:

soil microbial activity, soil enzymes, sustainable farming systems, soil organic matter