Modeling nitrogen transformations during a long-term incubation. (S03-clapp123319-Poster)

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Abstract:

Inorganic and organic N were determined on a Waukegan silt loam soil for a 90-wk aerobic incubation experiment. N-15 labeled soil samples were taken from 2 different tillage treatments (till, T or no-till, NT), and 2 residue management techniques (returned, R or harvested, NR). Triplicate samples of 4 treatment combinations were incubated in polyethylene bags at 35C under constant water conditions. NO3-N concentration was determined at periodic intervals after KCl extraction. Using a Mason jar diffusion technique, extracted samples were converted into NH4-N for total N and N-15 analyses. Atom % N-15 (inorganic) increased, reached a plateau, and then decreased. The extent of each phase depended on the treatment. This information was used to estimate the N-15 content in the organic pools of the model NCSOIL.

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