Nitrogen Dynamics in the Paddy Soils as Affected by Liquefied/Fermented Manure Application. (S08-yang112620-Poster)

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Abstract:

The liquefied and aerobically fermented pig manures were sprayed into the large pot (50L) with different levels based on N recommendation. Rice-growing pots were filled with three textural soils (CL, L, SL) and flooded with water. Porous ceramic cups and the mixed-bed resin capsules were inserted at 15 and 30cm depths. Mineralization, leaching and distribution of NH4-N and NO3-N in the water and soil profile were monitored. NH4-N in water and soils was higher than NO3-N. At the early growth stage, concentrations of NH4-N at the subsoil were higher than those of the surface soils, but those two at harvesting stage became similar. Concentration of NH4-N in the soil was decreased with time. Concentrations of NO3-N were higher at subsoil than at surface soil. The NO3-N in leachate was higher than NH4-N, but decreased with time. About 15% of the sprayed manures were mineralized after 30days at the rate of 36.1 mg/L/d. Concentrations of the mineralized NH4-N was decreased with the rate of 18.5 mg/L/day, but those of NO3-N were increased with the rate of 3.30 mg/L/day. The liquefied/fermented animal wastes can be used for nutrient sources for rice in the paddy but N leaching potential should be considered.

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