



Study of nitrogen release kinetics from organic nitrogen resource of municipal solid waste compost

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Knowledge of soil nitrogen mineralization processes is essential for modeling soil processes in agriculture. Mineral nitrogen release kinetic in soil amended with organic compost, by using mixed first- and zero-order kinetic model, was conducted to determine mineralization rate from various organic nitrogen resource of compost and parameters model as compared with control (soil alone). In order to, municipal solid waste compost in three replications was incorporated to soil and moisture was adjusted at 85% field capacity. The treatments were incubated at 8 °C and 25 °C for 13 weeks. The results indicated that there were two resources for compost treatments; a slow mineralization and a fast mineralization, while, there were three resources for soil treatment, means, a slow mineralization and two fast mineralization (N_0). The highest nitrogen mineralization (N_{min}) in 25 °C, 101.87 mgN/kg estimated for compost treatment.

Keywords: first- and zero-order kinetic model, nitrogen mineralization, municipal solid waste compost, temperature and soil