

Determining the Nitrogen Mineralization Rate by Industrially Manufactured Organic Fertilizers on Alfisol in Southwestern Nigeria

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Abstract : Laboratory incubation study was carried out at Adeyemi College of Education, Ondo Southwestern Nigeria to determine the rate of NO₃-N, NH₄-N, total N, OC and available P released to the soil samples collected from Okitipupa mangrove forest. The soil samples were incubated with organic (OG), organomineral (OMF) and NPK 15:15:15 (NPKF) fertilizers. Organic and organomineral fertilizers were separately applied at the rate of 0, 0.25 and 0.5mg/100 g soil while NPKF was applied at the rate of 0.002g/100g soil. The treatments were replicated three times and arranged on CRD. The treatments were incubated for 90 days. Compared with control, OG and NPKF at all rates significantly increased (p<0.05) soil NH₄-N, NO₃-N, total N and available P. The order of increase in NH₄-N were 10t/ha OMF> 5t/ha OMF> 5t/ha OG>10t/ha OG>control>400 kg/ha while the order of increase in NO₃-N were 5t/ha OMF>10t/ha OMF>10t/ha OG>5t/ha OG>control>400 kg/ha NPKF. 5t/ha OMF had the highest, 5t/ha OMF recorded the highest pH, 5t/ha OG had the highest OC while 10t/ha OG had the highest available P.

Keywords : c/n ratio, immobilization, incubation study, organomineral fertilizer

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