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Nutrient Release Pattern in Soil Incubated with Fly Ash, Inorganic Fertilizers and Organic Manures

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***Abstract*:** An incubation experiment was conducted to assess the nutrient release pattern in soil added with fly ash, inorganic fertilizers and organic manures. The fly ash was procured from Mettur thermal power station. The pH of fly ash was neutral to slightly alkaline and contains nutrients such as P, K, Ca, Mg, Fe, Mn, Zn and Cu. Since it was poor in nitrogen and organic carbon content, organic manures were added as supplement. Fly ash applied as a basal dose @ 20 t ha^{-1} with three manures *viz.,* farm yard manure (FYM @ 12.5 t ha^{-1}), green leaf manure (GLM @ 6.25 t ha^{-1}) and humic acid (HA @ 37.5 litres ha^{-1}). Period of the incubation study was for two months. Destructive soil sample from each set of container was taken for analysis at weekly intervals and analyzed for pH, electrical conductivity (EC) and available macro nutrients (N P K). No change in the pH, EC, N, P and K were recorded during the first three weeks. There was no significant change in pH and EC after the third week of incubation. Prominent changes were recorded at 6^{th} week of incubation study with respect to soil available nitrogen and phosphorus, and for soil available K noticeable changes were observed at 4^{th} week of incubation. Maximum release of NPK was in the soil treated with fly ash @ 20 t ha^{-1} and GLM @ 6.25 t ha^{-1} along with recommended dose of fertilizers (RDF). The available macro nutrients released during the period were found to be statistically significant.

Keywords: Soil incubation, Fly ash, FYM, GLM, HA, pH, EC, Available macro nutrients