

SOIL NUTRIENT DYNAMICS AND YIELD OF MUNG BEAN (*Vigna radiata* L. WILCZEK) UNDER DIFFERENT ORGANIC MANURE APPLICATION IN NON CALCIC BROWN SOILS

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A field experiment was conducted at Regional Agricultural Research and Development Center, Aralaganwila, to study the soil nutrient dynamics and yield of Mung bean (*Vigna radiata* L. Wilczek) under different organic manures in Non Calcic Brown soil. *Gliricidia* (*Gliricidia sepium*), *Ipilipil* (*Leucaena leucocephala*), Guinea grass (*Panicum maximum*), rice straw, cattle manure, poultry litter and compost incorporated at the rate of 10 t ha⁻¹ dry weight basis, was tested in a Randomized Complete Block Design with three replicates. Litter bag technique was used to determine the rate of organic manure decomposition and nutrient release. Eight litter bags per plots were buried. One bag was retrieved from each plot at one week interval for the period of eight weeks. *Gliricidia* (6.8 g/week - decomposition rate and 4.7 weeks - half life) recorded highest decomposition rate and shortest half life. However, Guinea grass recorded the highest amount of P release after one week of incorporation, while *Gliricidia* recorded the highest K and compost recorded highest N release. Highest amount of remaining N was recorded in *Ipilipil* (37.2%) while poultry litter recorded the highest amount of P (3.8%) and Guinea grass recorded the highest amount of K (34.8%) after the 8 week of incorporation. Incorporation of poultry litter showed highest plant height (29.50 cm), average number of leaves per plant (13.2) and seed yield (952.2 kg ha⁻¹) of *Mung bean*. Although some other organic manure recorded the higher decomposition rate and rapid nutrient release, it was not reflected in higher growth and yield of *Mung bean*. Soil pH, EC, organic matter, total N, available P and exchangeable K were increased with applied organic materials. Highest total N, available P and exchangeable K was recorded in Poultry litter incorporated plots. The results conclude that poultry litter can be used to get higher growth and yield of *Mung bean* while soil fertility improvement.

Key words: Litter bag technique, Non Calcic Brown soil, Organic manures, Yield