Availability of Major Nutrients in the Soil after Long-term Application of Organic Manure for Coconut

M.M.U. DE SILVA[1], M.K.F. NADHEESHA[2] and N.A. TENNAKOON[3]

[1]*Advanced Technological Institute. Labuduwa, Akmeemana, Sri lanka.*

[2]*Soils and Plant Nutrition Division, Coconut Research institute, Lunuwila, Sri Lanka.*

ABSTRACT

A study was conducted to assess the availability of major nutrients in the soil after long-term application of organic manure for coconut such as Cattle manure, Poultry manure, Goat dung, and Gliricidia leaves against the chemical fertilizers. The experiment was commenced in 1997 at Rathmalagara research station, Madampe by soils and plant nutrition division, coconut research institute (CRI). The experiment was laid out on randomized block design, having six treatments with three replications and in each replication, there are six trees.

Major nutrient content (N, P, K, and Mg) of soil, and leaf samples; furthermore, pH, organic carbon, electric conductivity (EC), and cation exchange capacity (CEC) of soil were estimated.

It has been observed that highest nitrogen contents were available in poultry manure (1484 mg/kg) treated soils. In the mean time Phosphorous (610.60 mg/kg), potassium (0.25 meq/100 g),and magnesium (1.79 meq/100 g) were highest in gliricedia treated soil than that of inorganic and control soils. Among the organic manure treated soils, it has also been revealed that soils that treated with gliricedia contained highest nutrient availability improvement and chemical property levels, which are favorable for the coconut palm. Leaf analysis data also proved the nutrients availability in the organic treated palms.