NUTRIENTS ASSESSMENT AND MAPPING IN MADAMPE AND MEDAGAMA SOIL SERIES UNDER COCONUT: CHILAW DISTRICT

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An experiment was conducted to assess nutrient and soil status [Nitrogen (N), Phosphorous (P), Potassium (K), Magnesium (Mg), Calcium (Ca), Sodium (Na) and Organic Carbon (OC)] of two soil series, *Madampe* (Latosols) and *Medagama* (Regosols) under fertilized and unfertilized conditions in *Chilaw*, Sri Lanka.

Soil samples were taken from the manure circle (MC) and center square (CS) and leaf samples were taken from 14 th leaf of the palm. The sampling points were located using Global Position System (GPS). Nutrients in soil and leaf samples were analyzed and spatial distribution was mapped using Geographic Information System (GIS).

Results revealed that nutrient values of fertilized MC of *Madampe* series; N (169.68 to 1640.4) mg/Kg, P (5.61 to 678.5) mg/Kg, for K, Mg, Ca and Na (0.02 to 1.085, 0.202 to 1.945, 0.41 to 7.119 and 0.008 to 0.181) cmol/Kg respectively and OC (0.189 to 2.67)%. Leaf nutrients in *Madampe* series; N (1.73 to 3.07)%, P (0.133 to 0.175) mg/Kg, K, Mg, Ca and Na (0.68 to 1.73, 0.19 to 0.42, 0.21 to 0.58 and 0.15 to 0.59)% mg/Kg respectively. Nutrient and soil status of MC of *Medagama* soil series; N (125.45 to 1520.3) mg/Kg, P (9.12 to 849.22) mg/Kg, K, Mg, Ca and Na (0.017 to 1.045, 0.089 to 1.845, 0.002 to 0.618 and 0.004 to 0.092) cmol/Kg respectively and OC (0.095 to 1.497) % Leaf nutrients in *Medagama* soil series; N (1.86 to 3.08) mg/Kg, P (0.133 to 0.175) mg/Kg , for K, Mg, Ca and Na (0.56 to 1.93, 0.14 to 0.38, 0.18 to 0.56, and 0.09 to 0.59) mg/Kg respectively. Nutrient levels of both soil series were low in unfertilized soils and CS. According to the Coconut Research Institute (CRI) standards both soil series are within the recommended nutrient levels of coconut under fertilized condition. The results obtained are useful in recommending site specific fertilizer recommendation for coconut in these two soil series.

Key words: Coconut, Nutrient mapping, Madampe soil series, Medagama soil series, Latosols and Regosols, Global Position System (GPS), Geographical Information System (GIS).