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Status of exchangeable bases of the upland soils of the Kurunegala catena of the coconut triangle

Kuliyapitiya series and Kurunegala series are the two upland soil series belong to the Kurunegala soil catena where coconut is cultivated as the major plantation croup. The present study was carried out to assess the status of the soil exchangeable bases in each of the above soil series and its effect on the coconut plantation. Representative soil samples were taken from both soils at randomly selected sites at the rate of oner per 80 ha. At each site, samples were taken from the manure circle of four coconut palms and the centres of the planting squares and composited separately. Samples were taken from two depths; 0-25 cm (top soils) and 25-50 cm (sub soils) separately. The 2 mm fraction of the air dried soils were analyzed for exchangeable K, Ca, Na and Mg using I M ammonium acetate (pH 7.0) methods (Page et al., 1982)

The results showed that the mean total exchangeable bases of Kuliyapitiya and Kurunegala series averaged over 0-25 cm depths were 3.6 me/ 100 g and 3.7 me/ 100

respectively. The base saturation ranged between 54-63% in both soils. The pH (1:5 soil/water) ranged from 5.3-5.4. The variation of the analytical values were quite high even within the series but the coefficient of variation was reduced to 10% for each parameter analysis when more than 100 samples were used> The mean exchangeable potassium content in Kuliyapitiya series and Kunegala series was 0.13 mg/ 100 g and 0.35 me/ 100 g respectively.

Compared to the soil threshold value of).46 me/ 100 g for exchangeable potassium in soil for the coconut plam (Somasiri and Liyanage, 1996), the status of exchangeable potassium of Kurunegala catena is not sufficient for coconut cultivation and therefore potassium fertilizer application is important. As the exchangeable magnesium level is quite in both soils (0.99) me/ 100 g), slow active magnesium fertilizer such as dolomite is sufficient to maintain nutrition of coconut palms.