B-42 Calibration of methods for soil phosphorus determination by field experiment data

D M D I Wijebandara, L L W Somasiri
(*Soils & Plant Nutrition Div., Coconut Research Institute, Lunuwila*)

Greenhouse studies showed that 4 extractants 2.5% acetic acid, 0.5M $NaHCO_3$, anion exchange resin (AER) and mixed ion (anion + cation) exchange resin were satisfactory for available soil P determination. The present study was carried out to calibrate the above methods for coconut growing soils by field experiments.

Five soil series falling into different great soil groups were used for the calibration study. *Pueraria phaseoloides* were grown on each soil in beds of dimension 1.5 x 1.5 m which were treated without (P_o) and with added P fertilizers (P_1, 595 kg of TSP/ha) in triplicate in randomized block design. Basal treatment of $(NH_4)_2SO_4$ (95 kg/ha), muriate of potash (119 kg/ha) and kieserite (59 kg/ha) were applied to each plot. Plants were grown on both top soil and B horizon of each soil series separately.

Relative dry matter yields of *Pueraria* obtained 3 months after planting and soil P determined by each method significantly fitted Cate and Nelson model (1971). But 2.5% acetic acid-P was superior to others as it accounted for 62.8% of the variation of relative yield against 45-46% by the other extractants. The threshold level for 2.5% acetic acid-P was found to be 7.8 mg/kg.

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