B-51: Available phosphorus status of some cultivated soils in the Dry Zone

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Plants take up phosphorus (P) mainly from the available fraction of P in soil. Hence, study of available P status of soils provides information for efficient P management in crop production. Aim of this study was to determine available P content and its nature of distribution in four soils namely Reddish Brown Earth (RBE), Low Humic Gley (LHG), Non Calcic Brown (NCB) and Regosol soils which are being intensively used for crop cultivation in the Dry Zone of Sri Lanka. For this purpose, 739 composite soil samples collected from 0-20 cm depth of farmer fields under the Soil Testing Service of the Department of Agriculture were used. The soils consisted of 250, 294, 134 and 61 samples from RBE, LHG, NCB and Regosol soils respectively. The available P (Sodium bicarbonate extractable P) content of soils was determined.

Results showed chat mean available P contents of RBE, LHG, NCB and Regosol soils was 12.6, 10.3, 6.8 and 36.8 ppm respectively. The median of available P contents was 8.0, 6.0, 4.0 and 34.0 ppm in RBE, LHG, NCB and Regosol soils respectively. Further, 57, 69 and 80% of RBE, LHG and NCB soils respectively contained an available P content of less than 10 ppm showing a poor available P status in those soils. On the other hand, 75% of Regosols contained an available P content of more than 20 ppm, indicating a greater P availability in Regosols. As a sandy soil, presence of excessive levels of available P content in these Regosols could be a result of over application of phosphorus fertilizer in crop cultivation.