EVALUATION OF DIFFERENT AVAILABLE PHOSPHOROUS EXTRACTION METHODS FOR REDDISH BROWN EARTH SOIL IN ANURADHAPURA DISTRICT

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There are many extraction methods developed to quantify the available phosphorus (P) contents in soil. This study was conducted to select the most appropriate available P extraction method for Reddish Brown Earth (RBE) soil in the Dry Zone where maize *(Zea mays L.)* is grown extensively. Three upland farmer fields from eight divisional secretariats (DS) in Anuradhapura District were randomly selected after the *Maha* season 2012/2013. The DSs were Galenbindunuwewa, Horowpothana, Kahatagasdigiliya, Mihintale, Nachchaduwa, Thalawa, Thirappane and Puliynkulama. Soil samples were collected randomly from the top soil layer (0-25 cm). Soil samples were analyzed for soil reaction (pH), electrical conductivity (EC), available P, total P, total N, cation exchange capacity (CEC), organic matter content, exchangeable K, Na, Ca and Mg contents in triplicate. Soil samples were analyzed for available P, using seven different phosphorous extraction methods namely, Distilled water extraction, Olsen's method, Bray 1 method, Borax method, Modified Kelowna method, Mehlich III method and Ammonium chloride method. Borax, Modified Kelowna and Mehlich methods had higher available P and P recovery values than others. Borax method showed the highest ability to extract the available P ($p<0.05$). The distilled water extraction had the lowest available P and P recovery compared to other methods. It is concluded that the Borax method is the most appropriate method for available phosphorus extraction for Reddish Brown Earth (RBE) soil.

Keywords: Available phosphorous extraction, Phosphorus, Reddish Brown Earth, *Zea mays* L