

**EFFECT OF PHOSPHORUS ON GROWTH OF MAIZE
(*Zea mays* L.) IN REDDISH BROWN EARTH UNDER GREENHOUSE CONDITIONS**

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The greenhouse study was conducted at the Faculty of Agriculture, Rajarata University of Sri Lanka to study the effect of different Phosphorus (P) levels on growth of maize (Var. Sampath). Top soils at a depth of 0-25cm were collected from research farm, Puliyankulama and farmer field at Kahatagasdigiliya for this study. Approximately 27.5 kg of air dried soil were filled into a plastic pot and packed to

achieve a bulk density of 1gcm. Twenty pots were arranged in a Completely Randomized Design (CRD) with four treatments and five replicates for a single experiment. The treatments were 0, 20, 30 and 40 kg of P ha. Nitrogen and Potassium were supplied as twice as the fertilizer recommendation of Department of Agriculture. The experimental pots were maintained approximately at field capacity. Soil samples were collected to about 10-20 cm depth at 4, 8, 10, 12 and 16 weeks after planting (WAP). The soil samples were analyzed for soil pH, electrical conductivity (EC) and available P (Olsen's Method). The leaf P content at 50% flowering stage was measured by Dry Ash method. The growth parameters were plant heights at 4, 8, 10 and 12 WAP, number of days to 50% flowering and number of days to 80% silking. The soil pH, EC, and leaf P% were not significantly different ($p < 0.05$) at different levels of P in both locations. The soil available P was significantly different ($p < 0.05$) from control but did not significantly differ ($p < 0.05$) among other treatments at both sites. The plant height at 50% tasseling stage, number of days to 50% tasseling and number of days to silking were not significantly different ($p > 0.05$) among any treatments at both soil types. The results revealed that the different levels of P treatments have no any significant effect on soil pH, EC, available P and growth parameters of maize variety "Sampath" under greenhouse conditions.

Key words: Growth, Maize (*Zea mays* L.), Phosphorus, Reddish brown earth