

**EFFECT OF PHOSPHORUS ON GROWTH AND YIELD OF MAIZE
(*Zea mays L.*) IN THE DRY ZONE OF SRI LANKA**

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The field research was conducted during *Maha* (2012/2013) at the research farm, Faculty of Agriculture, Rajarata University of Sri Lanka to find out the effect of different rates of Phosphorus (P) on growth and yield of maize (Var. Sampath). The experimental plots were arranged in a Randomized Complete Block Design (RCBD) with four treatments and four replicates. The treatments were 0, 20, 30 and 40 Kg of

Phosphorus (P) ha⁻¹. Nitrogen and Potassium were applied according to fertilizer recommendation of Department of Agriculture. Soil samples were obtained prior to the experimentation, 4, 8, 10, 12 and 16 weeks after planting (WAP). Soil samples were analyzed for pH, electrical conductivity (EC) and available P (Olsen's method). Leaf samples were obtained at 4, 8, 10 and 12 WAP and P contents were measured. The growth parameters were plant height at 50% tasseling stage and number of days to 50% tasseling. The yield parameters were number of cobs per plant, number of rows per cob, number of kernels per row, number of grains per cob and 100 - grain weight. The soil pH, EC, available P and leaf P% were not significantly different ($p>0.05$) at different levels of P. The plant height at 50% tasseling stage and number of days to

50% tasseling were significantly different ($p<0.05$) when 30 kg of P ha⁻¹ added. The number of cobs per plant, number of rows per cob and 100 - grain weight were insignificant while the number of kernels per row and number of grains per cob were

significantly different ($p<0.05$) at all the treatments. The P application at 30 kg ha⁻¹ produced significantly higher grain yield than all other treatments. The results indicated that P fertilizer should be applied at 30 kg of P ha⁻¹ to obtain higher grain yield of maize variety Sampath under dry zonal conditions in Sri Lanka.

Key words: Grain yield, Growth, Maize (*Zea mays L.*), Phosphorus