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Rates of phosphorus on growth and yield of maize (*Zea mays* L.) in the dry zone of Sri Lanka

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Phosphorus (P) is an essential element for maize but many soils are low in forms that are readily available to plants to ensure satisfactory growth. A field research conducted during '*Maha'* (2012/2013) season at the research farm, Faculty of Agriculture, Rajarata University of Sri Lanka examined the effect of different rates of P on growth and yield parameters of maize (var. Sampath). The experimental plots were arranged in a Randomized Complete Block Design with four treatments and four replicates. The treatments were 0 (T1), 20 (T2), 30 (T3) and 40 (T4) kg of P ha^{-1}. Soil samples were obtained initially and at 4, 8, 10, 12, and 16 weeks after planting (WAP) and analyzed for pH, electrical conductivity (EC) and available P. Leaf samples obtained at 4, 8, 10 and 12 WAP were analyzed for total P. Soil pH, EC, available P and leaf P content were not significantly different (P<0.05) among treatments. Plant height at 50% tasseling stage and number of days to 50% tasseling were significantly higher (P<0.05) in T2 compared to other treatments. The number of cobs per plant, number of rows per cob and 100-grain weight were not significantly different among treatments while the number of kernels per row and number of grains per cob were significantly higher (P<0.05) in P treatments than the control. Application of 30 kg P ha^{-1} produced the highest grain yield of maize variety Sampath under the tested experimental conditions in the dry zone of Sri Lanka.

Key words: Grain yield, growth, maize (*Zea mays* L.), phosphorus

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