

## SOIL PHOSPHORUS STATUS OF REDDISH BROWN EARTH, AMENDED WITH TRIPLE SUPER PHOSPHATE

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Information on the Phosphorus (P) fractions and Degree of Phosphorus Saturation (DPS) in soils treated with inorganic fertilizers is needed for better fertilizer management in agricultural soils. Hence, the changes in P fractions, DPS and total P under maize (*Zea mays* L.) cultivation in dry zone of Sri Lanka were studied at Puliyankulama (*Maha* 2012/2013 and *Yala* 2013) and Kahatagasdigiliya (*Yala* 2013 and *Maha* 2013/2014). Each experiment was conducted with four treatments with four replicates, using Randomized Complete Block Design. Treatments were 0 (T1), 20 (T2), 30 (T3) and 40 kg P/ha (T4). Soil samples were collected prior to the experimentation and at the end of each growing season at both locations. Soil P fractionation was done to quantify water soluble - P, NaHCO<sub>3</sub> - P, NaOH - P, HCl - P and residual - P fractions. The single point adsorption was conducted using a P concentration of 150 mg P l<sup>-1</sup> to determine DPS. Soil total P was measured using wet oxidation method. There was no significant difference ( $p > 0.05$ ) among any P fractions and DPS measurements, among treatments after application of triple super phosphate in both locations and seasons at the end of each growing cycle. However, water soluble P fraction depicted the lowest value, compared to other fractions at both locations while the lesser DPS values were recorded at Kahatagasdigiliya, compared to Puliyankulama at both seasons. The total P at T4 was significantly higher ( $p < 0.05$ ) than T1 at Puliyankulama during *Maha* 2012/2013. However, there was no any significant difference ( $p > 0.05$ ) among any other locations. Hence, it can be concluded that the application of specified P rates does not affect the different P fractions, DPS and total P in soil at both locations.

**Keywords:** Degree of phosphorus saturation, Phosphorus, Soil phosphorus fractions, Triple super phosphate