

## RESPONSE OF MAIZE TO HIGH GRADE EPPAWELA ROCK PHOSPHATE, EPPAWALA SINGLE SUPER POSPHATE AND ORGANIC MANURE

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Maize (*Zea mays* L.) is one of the major crops which contribute considerably to the cereal production of Sri Lanka. Therefore, nutrient management of maize to reduce the cost of production is an important current issue. Imported Triple Super Phosphate (TSP) is the presently recommended phosphorus (P) source for maize. However, as fertilizer prices are substantially increased, Sri Lanka should exploit the possible local fertilizer sources for substitution. This study investigated the application of locally produced 'P' sources of High Grade Eppawala Rock Phosphate (HERP) and Eppawala Single Super Phosphate (ESSP) in combination with Organic Manure (OM).

Two field experiments were conducted during 2009/2010 Maha season on Reddish Brown Earth (RBE) soil at Kurundankulama and Alagollawe in Mihinthale and Ritigala Divisional Secretariat Divisions respectively. The Department of Agriculture (DOA) recommended level of P<sub>2</sub>O<sub>5</sub> as TSP, HERP, ESSP and half of that in combination of 10 tons OM were compared with DOA recommendation. DOA recommended nitrogen (N) and potassium (K) were added to all the treatments. RCBD design with three replications was used. 'P' supplying capacity of different treatments was evaluated by the performance of seed yield, bio mass production and plant height. Leaf 'P' content and available soil 'P' content were tested at 50% flowering, before planting and harvesting stages respectively.

The results revealed that ½ TSP with OM significantly improved the plant height at flowering and harvesting stages compared to that of the DOA recommendation. However, application of HERP, ESSP with OM did not significantly improve the Maize growth. The study should be repeated before arriving to a firm conclusion.

**Key words:** TSP, HERP, ESSP, Maize (*Zea mays*).