HIGH GRADE *EPPAWALA* ROCK PHOSPHATE (HERP) AND TRIPLE SUPER PHOSPHATE (TSP) AS PHOSPHOROUS SOURCE FOR SUGARCANE ON ALLUVIAL SOIL AT *HINGURANA*

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Sugarcane is cultivated in Sri Lanka mainly for sugar production. Phosphorous is one of the key elements in sugar plant nutrition. Partial replacement of relatively higher priced TSP with locally available HERP would receive more attention of sugarcane growers. This research was conducted to investigate the suitability of applying HERP in combination with TSP as P source for sugarcane production. The field experiment was conducted on Alluvial soil at *Hingurana* in *Gal Oya* plantation field using variety SL7130, during September 2010 to July 2011. Five combinations of TSP and HERP (0%HERP + 100%TSP, 25%HERP + 75%TSP, 50%HERP + 50%TSP, 75%HERP + 25%TSP, 100%HERP + 0%TSP) at the rates recommended were tested on the performance of growth parameters and yield attributes leaf P and soil P reserves. Treatments were replicated three times in a Randomized Complete Block Design.

Study revealed that none of the growth parameters were significantly improved by the application of 100% TSP or 100% HERP or and any combination of HERP and TSP over the control. However, significantly higher Top Visual Dewlap (TVD) leaf 'P' content ($p=0.0005$) was recorded in the treatment combination of 25% HERP+75% TSP and 50% HERP+50% TSP when compared to the control. Combined application of 25% HERP+75% TSP and TSP alone has significantly ($p=0.003$)improved the top soil P content over the other combinations, 100% HERP and control after three and half month planting. Significantly higher yield of sugar cane ($p=0.0242$) was recorded in the treatment combination of 25% HERP+75% TSP when compared to the control at nine months after planting. Results suggest, substituting a fraction of P requirement from low cost HERP was possible when the initial soil P content of Alluvial soil is 6.5ppm. Testing the soil 'P' reserves after harvesting, cane quality analysis and continuation this trial for ratoons are required for concrete recommendations.

Key words: Alluvial soil, HERP, Phosphorous, Sugarcane, TSP