

**EFFECT OF SULPHATE OF POTASH AND PARTIALLY  
BURNT PADDY HUSK ON THE GROWTH PERFORMANCE  
OF RICE (*Oryza Sativa L.*) IN SALINE SOIL**



**BY**

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## ABSTRACT

The salinity has been confirmed as main constrain of crop production and major threat to the agriculture. Productivity of most of the paddy growing lands in Sri Lanka declines every year due to increased soil salinity. In Batticaloa District Vaharai is located in Koralai pattu North D.S. division. These lands are often influenced by the salinity and this is one of the important constrain on cultivation.

A pot culture experiment was conducted at Eastern University, Sri Lanka during May to August 2015 to investigate the effect of various potassium rates; 0, 18, 36 and 72 kg  $K_2O/ha$  in the form of sulphate of potash and partially burnt paddy husk (with and without), on soil pH, electrical conductivity and available phosphorus, plant potassium and phosphorus content, growth and yield components of rice. A bulk soil sample was collected at 0-20 cm depth from salt-affected area at Vaharai. It was processed and sieved through 2mm sieve. The experiment was laid out in a Completely Randomized Design (CRD) in a factorial manner with three replications.

Results revealed that the application of sulphate of potash in amended soil decreased soil pH and electrical conductivity (EC) from 8.3 to 7.4 and  $19.1 \text{ dSm}^{-1}$  to  $\leq 4 \text{ dSm}^{-1}$  respectively. Amendment increased the soil available phosphorus from 9.69 to 74.673 mg/kg. Furthermore the use of potassium fertilizer remarkably elevated the uptake of essential nutrients of potassium up to 51.91 mg/g (DW), and phosphorus content up to 4.54 mg/g (DW) in saline soils. The application of 72 kg  $K_2O/ha$  in the form of sulphate of potash proved to be the best to increase the growth and yield components in saline environment.

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