EFFECT OF INCORPORATION OF ORGANIC MATERIALS ON K LEACHING IN A SANDY SOIL

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A significant K leaching was observed in a sandy Non Calcic Brown soil and the importance of K retention has been emphasized by Kendaragama (1988). Thus a leaching column experiment was conducted using the same soil to evaluate the effect of incorporation of paddy husk, saw dust and coir dust on K leaching.

60 cm long PVC pipes having a diameter of 9.0 cm were driven into the sub-soil (20-50cm) after removing the top-soil (0-20cm) to take undisturbed soil cores. Top-soil samples were mixed separately with organic materials at a rate representing 4 t ha^{-1} and filled into the columns to occupy 0-20cm depth. Untreated soil was the control. Each treatment was triplicated. All columns received N,P and K at recommended rates as if there were rice plants. 20.2 mg K $column^{-1}$ were added in form of muriate of potash. K input due to paddy husk, saw dust and coir dust per column were 9.9mg, 2.6mg and 16.1mg respectively. Columns were leached daily with 100 ml of distilled water over three months except for 6 days at fertilizer applications. Daily collected leachates were analysed for K.

During the experimental period 48.1 and 41.9 mg K $column^{-1}$ were leached in paddy husk and coir dust incorporated soils respectively. K leaching in saw dust treatment and control amounted to 33.4 and 34.4 mg $column^{-1}$ respectively. However, values up to 4th week were almost similar ranging from 1.98-3.18 mg K $column^{-1}$. Moreover, the K balance showed the following sequence pertaining to the net K loss per column; ie, paddy husk > control > saw dust > coir dust. Generally, organic materials brought more K into the soil solution.

References:

Kendaragama, K.M.A., (1988) : Evaluation of nitrogen and potassium leaching in a Non Calcic Brown Soil under irrigated rice in Mahaweli System B., Thesis, M.Phil, Postgraduate Institute of Agriculture, University of Peradeniya.