EFFECT OF INCORPORATION OF SAW DUST, COIR DUST AND PADDY HUSK ON RETENTION OF BASIC CATIONS IN A SANDY SOIL.

G.K.K. Priyantha Kumara and A.N. Jayakody,
Faculty of Agriculture, University of Peradeniya.

A leaching column experiment was conducted to investigate the influence of saw dust, coir dust, and paddy husk on retention of Na, K, Ca and Mg in a sandy soil. Leaching columns were constructed by filling with undisturbed subsoil (20-50 cm) and disturbed top soil (0.20cm) of a Non-Calcic Brown soil. Organic residues were separately incorporated to the top soil. Treatments were triplicated and columns without residues served as the control. These were daily irrigated with distilled water. N, P and K were added as if there were rice plants. Collected leachates over 90 days were analysed for Na, K, Ca and Mg.

Cumulative leaching losses of all cations together were periodically lower in saw dust treatment and higher in the coir dust treatment than the control whereas the paddy husk and control treatments occupied a similar intermediate level. This phenomenon showed clearly that organic materials do not cause always increases in cation retention as often anticipated.

Magnitudes of retention of Na, K, Ca and Mg separately differed significantly from material to material. When compared to control, these were significantly higher in some treatments and lower in some other treatments. This suggest that organic materials have differential affinities to different cations.

Na, K, Ca and Mg were retained by saw dust, coir dust paddy husk as follows :-

K	:	saw dust>control>coir dust>paddy husk.
Na	:	paddy husk>saw dust>control>coir dust.
Ca	:	saw dust>coir dust>paddy husk> control.
Mg	:	saw dust>coir dust>paddy husk> control.

Divalent cations were stongly retained than monovalent cations.