

EVALUATION OF POTASSIUM LEACHING IN A
NON CALCIC BROWN SOIL UNDER IRRIGATED RICE

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A field lysimeter experiment was conducted in Maha 85/86 and Yala 86 to evaluate K leaching in a NCB soil. The design was a natural spilt plot with upper and middle slopes as main plots. Sub-plot treatments were soil alone, soil with crop and without fertilizers, and soil with crop plus the recommended fertilizers. Each treatment was triplicated.

Water gains by rain and irrigation, and losses through runoff and percolation were recorded. Periodical samples of above kinds of water were analysed for K.

Potassium supplied by rain water was 2.5 kg and 2.3 kg K per hectare in Maha and Yala respectively. The high values were probably caused by dust contamination resulting from earth movings at Mahaweli construction sites. Irrigation water supplied 20.6 and 26.4 kg K per hectare in Maha and Yala respectively representing almost 50% of the K recommendation. K leaching without a crop amounted to $17.8 \text{ kg ha}^{-1} \text{ season}^{-1}$ which was reduced by about 6.0 kg in presence of the crop. K application increased losses by $4.5 \text{ kg ha}^{-1} \text{ season}^{-1}$. K leaching was positively related ($P=0.001$) to the depth of water percolated.

Similar behaviour of upper and middle slopes indicated the dominant effect of soil properties over catenal position.

The results indicate that K supplied by irrigation water should be considered in recommending fertilizers. Leaching losses of K should be minimized by proper fertilizer application and water management.

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