POTASSIUM FERTILIZATION IN WET ACID RICE GROWING SOILS OF THE TROPICS

P. DETURCK[1], K. VLASSAK[2]

1. KU Leuven and Institute of Fundamental Studies, Hantana Road, Kandy, Sri Lanka
2. Katholieke Universiteit Leuven (KULeuven), Kard. Mercierlaan 92, 3030, Leuven, Belgium

ABSTRACT

Potassium is an essential plant nutrient, which is taken up by a rice crop in large quantities. With the increasing cropping intensity and the widespread use of high yielding varieties, K reserves in many acid soils are rapidly depleting. In order to stabilize rice yields it is essential to maintain a positive K balance.

Crop response to potassium fertilization has often been erratic, even on soils with low potassium availability. To propose suitable K fertilizer recommendations for acid rice soils, it is essential to critically analyse the important factors of the potassium balance sheet. The positive contribution of irrigation water, weathering of primary K bearing minerals and the release of interlayer K are reviewed. Also K losses through percolation, seepage and fixation are assessed.

K management on acid rice soils should strive to combine yield increase through balanced fertilization and yield stabilization through organic manuring.

Future research has to be directed towards a better understanding of K-dynamics of wetland soils.