BEHAVIOUR OF SOIL EXCHANGEABLE POTASSIUM AND POTASSIUM RESERVES IN AN INCUBATION EXPERIMENT

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An incubation experiment was conducted using two soils from Maha Illuppallama and Vanathavillu to study the mobility of exchangeable potassium and potassium reserves. The mobility of these fractions was observed at three potassium levels namely 0, 100, and 200 ppm K for an incubation period of six weeks. The weight of soil per sample was 200 g and the moisture content was maintained at 60% FC at an incubation temperature of 25°C. Samples taken at 2 week intervals were analysed for exchangeable K (1.0N NH_4OAc) and K reserves (HF:HCl). Application of K significantly increased the exchangeable K content of both soils. This was more pronounced in Maha Illuppallama soil probably due to its high clay content and cation exchange capacity. The exchangeable K content of Vanathavillu soil remained almost at constant level throughout the incubation period whereas in Maha Illuppallama soil an increasing tendency was observed especially up to the fourth week of incubation indicating the K replenishing ability of this soil. The content of K reserves of Maha Illuppallama soil was almost three times that of Vanathavillu soil. Mobility of the K reserves during the incubation period was relatively high in both soils. Significant amounts of K were released and refixed from both soils during this period exhibiting the importance of this pool in K dynamics of soil.