COMPARATIVE STUDY OF VARIOUS ANALYTICAL METHODS FOR THE ESTIMATION OF NON-EXCHANGEABLE SOIL POTASSIUM

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ABSTRACT

A glass house trial was carried out in which setaria (*Setaria sphacelata*), lucerne (*Medicago sativa*) and maize (*Zea mays*) were grown in two surface soils of contrasting mineralogy, one rich in micaceous material (Red podzolic) and second without micaceous material (Krasnozem). Plants were grown for four months without any addition of potassium. Potassium extracted by the cation exchange resin method of Waddy and Vimpany (1970) was compared with common analytical method of Non-Exchangeable soil K(K_{nex}) estimation which is calculated by difference in total plant uptake and depletion in exchangeable soil K. Results showed highly significant correlation between these two methods which shows that cation exchange resin method of Waddy and Vimpany could also be used as an index of potassium availability to plants. However, this method does not distinguish that, which part of K_{nex} has contributed to plant uptake unless exchangeable soil K is determined separately. More over this method is also time consuming, hence may not be practicable for routine assessment of K availability to plants.