

Sorption and Availability of Potassium in Selected Soils from Kenya: Effects of organic matter and pH on concentration of adsorbed potassium in sugarcane and maize growing zones

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Abstract

Potassium fertilizers have been found to increase yields of food crops in soils of Kenya and the world. The availability of potassium in maize and sugarcane growing soils in Kenya is unknown and this could be causing the low crop yields. It is therefore necessary to establish the availability of soil potassium to determine its efficiency for maize and sugarcane needs with reference to regions in Kenya. The necessity of the work is to ensure optimum nutrient availability and low cost of nutrient application with high yield of maize and sugarcane. The study of the availability of potassium reserves in these areas will enable farmers to determine whether or not to apply fertilizer. The book is divided into five chapters. This study is useful to farmers who want to practice large scale production of maize and sugarcane. The farmers are able to know the effect of pH, organic matter and potassium concentration on adsorption capacity of the soils because the adsorbed potassium concentration fit to Langmuir and Freundlich isotherms and adsorption of potassium differs significantly ($p \leq 0.05$) with organic matter and pH.