

## **POTASSIUM DISTRIBUTION IN THE SAND, SILT AND CLAY FRACTION OF SOILS DEVELOPED OVER TALC IN ODO-OGBE, KOGI STATE, NIGERIA**

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### **ABSTRACT**

Potassium (K) status of soils formed over talc at in a Southern Guinea Savanna Zone of Nigeria was assessed by the exchangeable, acid extractable, residual K and total K values in the sand, silt and clay fractions of the soils. Soil samples collected from genetic horizons of profile pits dug in five mapping units were fractioned into the three particle sizes of sand, silt and clay and exchangeable; acid extractable, residual K and total were determined in each particle size fractions. Result indicated that the total K was greater than 60 cmol kg<sup>-1</sup> in all the profiles while HCl extractable K (reserved K) and HNO<sub>3</sub> – extractable K (mobile K) ranged in values from 3.73 cmol kg<sup>-1</sup> to 52.63 cmol kg<sup>-1</sup> and 3.12 cmol kg<sup>-1</sup> to 25.57 cmol kg<sup>-1</sup> respectively with exchangeable K accounting for less than 1% of the total K and ranged in value between 0.16 cmol kg<sup>-1</sup> and 0.36 cmol kg<sup>-1</sup>. In most cases, the clay fraction of the soils had similar values of all the forms of potassium with the silt fraction while the sand fraction had the least values of these forms of potassium. The high values of the different forms of K obtained in these soils may have been occasioned by the presence of degraded mica, interstratified (smectite/vermiculite), and interstratified mica-smectite with a high concentration of degraded mica in the soils. An assessment of the potassium status of the soils, using the K saturation index revealed that the level of potassium in these soils was adequate for the sustainable production of the dominant crops grown in the area of study.