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Forms and distribution of soil potassium in selected maize growing areas of Haveri district

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Potassium, the third major nutrient, exists in soil in different forms and these forms are in a state of quasi-equilibrium with each other. These different forms of potassium and their distribution were studied in 20 representative red and black soil types spreading over seven taluks of the Haveri district of Karnataka. Soils were generally sandy clay loam to clay in texture. The soil reaction ranged between slightly acidic and near neutral in reaction and electrical conductivity was well within the permissible limit. The OC was low to medium. The average CEC, potassium adsorption ratio, sum of exchangeable cations and available potassium of black soils was high compared to red soils at both the depths. The average value of exchangeable potassium percentage was high in red soils at both the depths. Results indicated that the all the forms of potassium was higher in black soils compared to red soils. The water soluble and exchangeable K was higher in surface sample than in the sub surface in both the soil type. Whereas, non-exchangeable, lattice and total K was higher in sub surface than the surface in both the soil types. The water soluble form of K showed a significant and positive correlation with sand in red (r=0.755*) and black (r=0.527*) soils. The exchangeable K was significantly and positively correlated with CEC (r=0.721* and r=0.807* in red and black soils, respectively whereas, non-exchangeable K, lattice K and total K showed positive correlation for clay.

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