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Research Article

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Effect of long term soil fertilizer application on forms and distribution of potassium in soil under rice-cowpea cropping system

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Summary

An experiment was conducted at Zonal Agricultural Research Station, VC farm, Mandya to assess the effect of long term soil fertility management on behaviour of potassium with respect to different forms and distribution pattern in rice-cowpea cropping system. Soil of the study area belong to sandy loam texture having initial pH (6.28), EC (0.14 dSm^{-1}), CEC (9.60 cmol (p+) kg^{-1}), MWHC (20.70%) and bulk density (1.67 g cc^{-1}). The organic carbon (0.34 %), available nitrogen (163 kg ha^{-1}), available potassium (134 kg ha^{-1}) were low and medium in available phosphorus (29.20 kg ha^{-1}). Results indicated that the water soluble K content of soils varied from 8 to 16 mg K kg^{-1} in the surface layer and 5 to 14 mg K kg^{-1} in the sub surface layer in the plots treated with different fertilizer, manure and their combinations. Exchangeable K also ranged between 59 and 116 mg K kg^{-1} in the surface layer and 58 to 98 mg K kg^{-1} in the sub surface layer. The non-exchangeable K content ranged from 111 to 874 mg K kg^{-1} and from 160 to 880 mg K kg^{-1}, respectively in the upper and the lower layers. The total K content varied from 792 to 3017 mg K kg^{-1} at 0-15 cm depth and from 874 to 3318 mg K kg^{-1} at 15-30 cm depth.

Key words : Potassium, Forms, Distribution, Rice, Cowpea

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