

K e y w o r d s K status, Indian soils, Fertilizer misapplication, Sitespecific K recommendation, Policy initiative

A B S T R A C T Introduction Potassium (K) is third most important plant nutrient, vital to many plant processes owing to its requirement for activation of at least 60 different enzymes involved in plant growth, important for osmoregulation, cation-anion balance, protein synthesis, water balance, reducing lodging, imparting disease resistance and improving quality and shelf life of crop produce. Nutrient K is less mobile in soils because of the strong affinity with exchange sites of clays. Large rates of K uptake can be attributed to its high mobility due to the large permeability of cell membranes to K-ions, which arise from the occurrence of a range of highly K selective, low and high affinity ion channels and transporters. The large K uptake rate achieved by roots result in a steep depletion of solution K in the rhizosphere. It has been well established that a significant proportion of plant needs of K are met from non-exchangeable fraction of soil K (Sreenivasa Rao et al., 2010; 2014). International Journal of Current Microbiology and Applied Sciences ISSN: 2319-7706 Volume 6 Number 12 (2017) pp. 1529-1540 Journal homepage: <http://www.ijcmas.com> Growing population and its need pressurize Indian agriculture to produce more from shrinking arable land. Balanced nutrition plays a key role in enhancing the productivity of crops and sustainability of production systems. Potassium is third most important plant nutrient. Recent studies showed declining status of K in majority of the soils in India. High crop K removal than K addition by farmers and imbalanced use of NPK fertilizers contributed to large-scale K mining and K deficiency in soils and crops. K fertility depletion observed in all soil types. Widespread K deficiency was identified in rice-wheat system of Indo-Gangetic plains, horticultural, plantation, ornamental, aromatic and avenue plants. The current fertilizer recommendations are obsolete, very much generalized without considering the soil types, hence need revision and revalidation. Site-specific fertilizer recommendations, if followed can minimize the fertility K depletion and maintain productivity and sustainability and also