SOIL TEST POTASSIUM AND CROP RESPONSE CALIBRATION UNDER RICE WHEAT CROPPING SYSTEM

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From Rabi 1986-87 to Kharif, 1990, a series of field experiments were conducted in rice tract of North-East Punjab and rice-wheat rotation was followed to study the effect of K fertilization on crop yield. Calculated critical ammonium acetate extractable soil K levels were 200 and 210 mg kg^{-1} for wheat and rice respectively for all soils under study. For rice it was further observed that different soil series have their specific soil test K critical limit.

INTRODUCTION

Extensive experimentation of field staff of Soil Fertility department in farmer's fields indicated positive response of rice and wheat to K application and it varied with crop production conditions (Malik *et al.* 1987). However, no consistant relationship was established between extractable K in soil and the degree of crop response to applied K which demand the subject of further investigation for validity of soil K critical level.

Contemporary K soil test procedures are based on the concept that quantity of K extracted from cultivated may vary with cropping pattern and soil status. The results of K response studies under two major cropping pattern, cotton - wheat and rice - wheat, indicated that wheat significantly responded to K when sown after rice but not when after cotton (Malik *et al.* 1987) Moreover, agronomic and economic evaluation of the data on wheat response to K suggested positive responses at nine out of seventeen sites in Pakistan (Rashid *et al.* 1992). Therefore, the objective of this study was to ascertain the critical level of soil test K using Cate-Nelson procedure and also to estimate crop response to K fertilizer application under rice - wheat cropping system.

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