EFFECT OF ZINC AND BORON APPLICATION ON TWO RICE GENOTYPES

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ABSTRACT

Zinc deficiency is wide spread in Pakistani soils while soils containing high B are also found at some places. High soil B depresses grain yield of cereals. A pot culture study was conducted to determine whether applications of zinc can ameliorate the depressing effect of high B and improve grain yield of rice that differ in B tolerance. Two rice genotypes (a mutant DM-25, and a variety Basmati-385) were grown in pots supplied with 0 and 20 mg B, and 0, 5 and 10 mg Zn kg^{-1} soil. Applied B @ 20 mg kg^{-1} decreased the yield of DM-25 and Basmati-385 by 27 and 30% of straw and 19 and 24% of grain at maturity, respectively. Thus, applied B had more detrimental effect on Basmati-385 compared to mutant DM-25. Application of Zn improved grain yield and the increase due to 5 and 10 mg kg^{-1} applied Zn over control was 13 and 10% in DM-25 while it was 23 and 15% in Basmati-385, respectively. The mean reduction in grain yield due to high B was 25% compared to 7-14% due to applied Zn. Thus, application of small amount of Zn tended to ameliorate the depressing effect of high B in rice.

Key words: Boron, Rice, Zinc