

ZINC NUTRITION OF THREE RICE VARIETIES IN ALKALINE CALCAREOUS SOILS

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ABSTRACT

Pot culture and field studies were carried out employing rice varieties Basmati-370, Basmati-385 and DM-25 to investigate their Zn nutrition on calcareous soils. Zinc doses applied were 0, 2.5, 5 and 10 mg kg⁻¹. DTPA extractable soil Zn was 0.5 mg kg⁻¹. Four 30 days old seedlings of the above mentioned varieties were grown upto maturity with sampling of two plants at mid-tillering stage. In case of field study, flag leaf and grains were analysed for Zn. Basmati-370 in both cases and DM-25 in the field study did not respond to Zn application indicating sufficient absorption of native Zn to meet their requirement which were 18 and 28 in their whole shoot and flag leaf in Basmati-370 and 32 mg kg⁻¹ Zn in flag leaf of DM-25. Basmati-385 which responded to Zn under both pot culture and field study had 28 and 33 mg kg⁻¹ Zn in its whole shoot and flag leaf, respectively; which were associated with its near maximum yield obtained at soil application of Zn @ 4 mg kg⁻¹ and 6 kg ha⁻¹ in pot culture and field study, respectively. Zinc concentration in the grain of Basmati-385 for near maximum yield was about 27 mg kg⁻¹.