

Effect of Zinc Source and its Level of Application to Calcerous Soil on Wheat Yield

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ABSTRACT

A factorial pot experiment in a randomized complete blocks design was conducted to study the response of wheat (*Triticum aestivum*) in calcareous soil to zinc application. Zinc was added to soil from two sources; zinc sulphate and zinc-EDTA, at three levels (0, 5 and 10 mg kg⁻¹ soil) for each.

Results indicated that zinc source had no significant effect on grains and straw yields, while significantly affect zinc concentration in grains and straw, zinc uptake by grains and/or straw. Zinc concentration in grains and straw was increased with Zn-EDTA addition by 6.40 and 5.31 % compared to zinc sulphate. Increment in mean zinc uptake by grains, straw and total were 8.16, 4.60 and 5.44 % with Zn-EDTA in comparison to zinc sulphate.

Increasing levels of zinc application from zero to 10 mg kg⁻¹ soil increased significantly grain and straw yields and zinc concentration in grains and straw by 16.58, 8.02 % and 1.56 and 2.19 times respectively.

Interaction between source × levels of zinc had significant effect on all studied characters. Zn-EDTA application in 10 mg Zn kg⁻¹ soil gives high grains yield, Zn concentration in grains and/or straw. Significant correlations were found between all characters, except zinc uptake in straw, which was significantly correlated with total zinc uptake only. All characters were also, significantly correlated with residual available soil zinc.