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RESEARCH PAPER

Effect of zinc sulphate and phosphorous on growth, productivity and yield of wheat (*Triticum aestivum* L.)

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Abstract : A field experiment on (Effect of zinc sulphate and phosphorous on growth, productivity and yield of wheat (*Triticum aestivum* L.) was conducted at School of Agricultural Sciences, JRNRVU, Dabok, Udaipur during *Rabi* seasons 2023-24. The experiment consisted of twelve treatment combinations comprising three levels of zinc sulphate (0, 5 and 10 kg ha^{-1}) and four levels of phosphorous application (0, 20, 40 and 60 kg ha^{-1}). Combination of these treatments were evaluated under Factorial Randomized Block Design with three replications. Application of $ZnSO_4$ failed to brought about a significant variation in growth, yield attributes, yields and harvest index. However, increasing trends were observed with the application of 5 kg and 10 kg $ZnSO_4$ when compared to control. Soil application of 10 kg $ZnSO_4$ ha^{-1} gave 4.9 per cent higher grain yield over control (5033 kg $ha^{-1)}$. Application of 60 kg P_2O_5 ha^{-1} recorded the highest plant height (43.2 cm at 50% heading and 76.5 cm at harvest), flag leaf area (20.0 cm^2 at 50% heading and 34.3 cm at 90 DAS), number of tillers (140.7 m^{-1} row) at 30 DAS, (242.7 m^{-1} row) at 60 DAS, (254.0 m^{-1} row) at 90 DAS and (222.1 m^{-1} row) at harvest, maximum grain yield (5446 kg ha^{-1}), straw yield (7918 kg ha^{-1}), biological yield (13364 kg ha^{1}) of wheat recorded under the application of 40 kg P_2O_5 ha^{-1}.Further, the highest harvest index (41.71 %) was recorded under the application of 20 kg P_2O_5 ha^{-1}.

Key Words : Wheat, Zinc sulphate, Phosphorous

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