International Journal of Agricultural Sciences ☞DOI:10.15740/HAS/IJAS/20/RAAEALSES-2024/46-50
Volume 20 | RAAEALSES, 2024 | 46-50 ■ ISSN : 0973-130X Visit us : *www.researchjournal.co.in*

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

View Point Article : Gehlot, Jeevidha Kunwar, Solanki, N.S., Jaiswani, S., Champawat, T.S., Tyagi, Surbhi, Acharya, Parth, Rathore, B.S., Rajwaniya, Anjali and Kumar, Vinod (2024). Effect of zinc sulphate and phosphorous on growth, productivity and yield of wheat (*Triticum aestivum* L.). *Internat. J. agric. Sci.*, **20** (RAAEALSES) : 46-50, **DOI:10.15740/HAS/IJAS/20/RAAEALSES-2024/46-50.**

Article History : Received : 15.10.2024**; Accepted :** 25.10.2024

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