

Effect of Dosage and Time of Application of Zink Sulfat on Growth and Yield of Rice (*Oryza sativa. L*)
Supervised by Tirto Wahyu Widodo, S.P., M.P

Muhammad Iqbal Hakim Maulana
Food Crop Production Technology Study Program
Department of Agricultural Production

ABSTRACT

Rice production in East Java in 2021 will reach 9.79 million tons/ha but will decrease to 9.69 million tons/ha in 2022. Therefore, efforts are needed to increase rice production, one of which is by adding zinc sulfate. Zinc plays a role in increasing the photosynthetic metabolism of plants thereby triggering rice growth and production. This study aims to examine the effect of the addition and time of application of zinc sulfate on rice growth and production. This study used a factorial Completely Randomized Design (CRD) consisting of 2 factors with 4 replications. The first factor was zinc sulfate dosage with 4 levels including 0 kg ha⁻¹, 8 kg ha⁻¹, 12 kg ha⁻¹, and 16 kg ha⁻¹. The second factor is application time with 2 levels including 10 dap and 40 dap. The results showed that there was no interaction between zinc sulfate dosage and application time on rice growth and yield. Application of zinc sulfate 16 kg ha⁻¹ showed significant results on plant height (144.83 cm), number of tillers (28.33 tillers), number of productive tillers (23.28 tillers), number of hot grain per panicle (122.58 grains) and grain weight per clump (47.13 g). The addition of a zinc sulfate dose of 16 kg ha⁻¹ was able to increase plant photosynthetic activity and assist in the process of preparing protein which affected rice growth and production. While the application of zinc sulfate at the age of 40 DAP showed a significant effect on the number of grains per panicle (121.95 grains). This is because the addition of zinc sulfate in the flowering phase can reduce the risk of increased formation of abscisic acid (ABA) which can cause loss of flower buds, and abnormal growth of anthers and pollen grains.

Keywords: zinc dosage, pandanwangi rice, application time