

# Effect of Zinc and Iron Fertilization on Growth and Yield of Direct Sown Rice

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## ABSTRACT

A field experiment entitled “Response of direct sown rice to zinc and iron nutrition” was conducted at Agriculture College Farm, Bapatla, during *khariif*, 2017. The experiment was laid out in randomized block design (RBD) with seven treatments and replicated thrice. The treatments consisted of T<sub>1</sub> - RDF (180 :60 :40 N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O (kg ha<sup>-1</sup>); T<sub>2</sub>- RDF + ZnSO<sub>4</sub> @ 50kg ha<sup>-1</sup> through soil application; T<sub>3</sub>- RDF + FeSO<sub>4</sub> @ 25kg ha<sup>-1</sup> through soil application; T<sub>4</sub> - RDF + ZnSO<sub>4</sub> @ 50 kg ha<sup>-1</sup> + FeSO<sub>4</sub> @ 25 kg ha<sup>-1</sup> through soil application; T<sub>5</sub>- RDF + foliar spray of ZnSO<sub>4</sub> @ 0.2% at 20 and 45 DAS; T<sub>6</sub>- RDF + foliar spray of FeSO<sub>4</sub> @ 0.5% at 20 and 45 DAS; T<sub>7</sub>- RDF + foliar spray of ZnSO<sub>4</sub> @ 0.2% and FeSO<sub>4</sub> @ 0.5% at 20 and 45 DAS. Recommended dose of nitrogen, phosphorus and potassium were applied to all the plots in the form of urea, single super phosphate and muriate of potash, respectively. The results revealed that, plant height, number of tillers m<sup>-2</sup>, dry matter production, number of grains per panicle, grain and straw yield of direct seeded rice were significantly higher with RDF + ZnSO<sub>4</sub> @ 50 kg ha<sup>-1</sup>+ FeSO<sub>4</sub> @ 25 kg ha<sup>-1</sup> through soil application (T<sub>4</sub>) which was comparable with T<sub>7</sub> treatment (RDF + foliar spray of ZnSO<sub>4</sub> @ 0.2% and FeSO<sub>4</sub> @ 0.5% at 20 and 45 DAS) RDF applied without Zn and Fe, recorded the lowest growth parameters.

**Key words:** *Zinc, Iron, Growth and Yield*