

Effect of Zinc and Iron Fertilization on Yield and Seed Quality of Blackgram Grown in Calcareous Soils

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ABSTRACT

A pot culture experiment was conducted at the Agricultural College, Bapatla, during 2017, to study the effect of zinc and iron fertilization on yield and seed quality of blackgram grown in calcareous soils. The experimental soil was calcareous, moderately alkaline in reaction, low in organic carbon, available nitrogen and available phosphorus, high in available potassium and medium in available sulphur content. The soil was deficient in zinc and iron but sufficient in manganese and copper. The experiment was laid out in CRD with twelve treatments and replicated thrice. The results revealed that application of $44 \text{ mg kg}^{-1} \text{ ZnSO}_4 \cdot 7\text{H}_2\text{O}$ + foliar spray of ferrous sulphate (0.5%) + 0.1% citric acid + foliar spray of zinc sulphate (0.2%) (T_{12}) to blackgram crop significantly recorded the highest yield attributes, yield and seed quality parameter *viz.*, number of pods per plant, seed yield, haulm yield, harvest index and protein content when compared to control (T_1). In case of molar ratios, maximum P/Zn and P/Fe ratios were recorded with control (T_1) while minimum was observed with $44 \text{ mg kg}^{-1} \text{ ZnSO}_4 \cdot 7\text{H}_2\text{O}$ + foliar spray of ferrous sulphate (0.5%) + 0.1% citric acid + foliar spray of zinc sulphate (0.2%) (T_{12}).

Key words: *Calcareous soils, Blackgram, Zinc, Iron, Yield, Seed quality.*