

Effect of Potassium and Nickel on Yield and Yield components in Maize under Heat Stress

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ABSTRACT

Field experiment was conducted during *rabi* 2017-18 and 2018-19 at Agricultural College, Bapatla to study the 'Effect of potassium and nickel on yield and yield components in maize under heat stress'. The experiment was laid out in split plot design with twenty four treatments. Three dates of sowing *viz.*, December 20 (M_1), January 10 (M_2) and January 30 (M_3) as main plots and eight subplot treatments as 100% RDK (control) (S_1), 125% RDK (S_2), 1 kg Ni ha⁻¹ as nickel chloride (S_3), 2 kg Ni ha⁻¹ (S_4), 100% RDK+1 kg Ni ha⁻¹ (S_5), 100% RDK+2 kg Ni ha⁻¹ (S_6), 125% RDK+1 kg Ni ha⁻¹ (S_7) and 125% RDK+2 kg Ni ha⁻¹ (S_8). The results revealed that heat stress imposed by dates of sowing and nutrient treatments significantly influenced the yield and yield components during two seasons in maize. During both the years, among the dates of sowing the most delayed sown crop, M_3 reduced the number of rows per cob (16.08 % and 14.56 %), kernel per row (23.31 % and 20.88 %), test weight (21.74 % and 22.49 %) and kernel yield (50.23 % and 48.75 %) respectively compared to timely sown crop, M_1 . Among the subplots all treatments except S_3 and S_4 recorded a significant increment with the highest percentage of rows per cob (23.77 % and 23.93 %) kernel per row (13.63% and 13.30%), test weight (27.90 % and 23.69 %) and kernel yield (29.98 % and 28.36 %) respectively in S_8 over S_1 . Potassium and nickel application reduces the impact of heat stress to some extent so that the reduction in the yield and yield components was minimized.

Keywords: *Maize, Potassium and Nickel, Yield and Yield Components.*