

Nano urea–mediated improvement in yield, nutrient uptake and economics of maize

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ABSTRACT

A field experiment was conducted during *kharif*, 2023 at ANGRAU-Agricultural Research Station, Vizianagaram to assess the impact of nano urea on growth, yield, economics and nutrient uptake of maize and also to explore the possibility of reducing the conventional nitrogen fertilizer dose. This study was conducted in a Randomized Block Design with three replications. The soil of the experimental field was sandy loam in texture, neutral in reaction, low in nitrogen, organic carbon, medium in phosphorus and potassium. The experimental results revealed that, T₉:100% RDN through urea in three splits (33% basal + 33 % KH+ 33% at TS) + nano urea sprays at KH and TS resulted in higher growth and yield attributes, grain yield, stover yield and plant nutrient uptake. However, it remained on par with T₃:100% RDN through urea in three splits (33% basal+ 33 % KH+ 33% at TS), T₆:75% RDN (33% basal+ 33% KH+33% at TS) + nano urea sprays at KH and TS and T₇:75% RDN (66% basal+ 17% KH+17% at TS) + nano urea sprays at KH and TS. Economic parameters *viz.*, gross returns, net returns and BCR also did not vary significantly among T₉, T₃, T₆ and T₇. Hence, 75% RDN + nano urea foliar sprays at Knee-high (KH) and Tasselling(TS) stages can be recommended to increase the yield, economic returns and nutrient uptake with an additional saving of conventional urea fertilizers.

Keywords: *Economics, Maize, Nano Urea, Nutrient Uptake and Productivity*