

Effect of integrated nutrient management system on nutrient uptake and yield of maize (*Zea mays*)

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ABSTRACT: To study the effect of nutrient supply through integrated nutrient management system on the yield of Maize, (*Zea mays*) a field experiment was conducted at the Experimental Farm of Sheila Dhar Institute of Soil Science, Allahabad. Maximum increase over control in grain yield was observed with treatment T₉ (75% NPK + 100% FYM + 100% Zn + PSB) followed by treatment T₇ (50% NPK + 100% FYM + 100% Zn + PSB). Minimum grain yield was observed in control plots. Grain yield in the top six treatments followed the order T₉ > T₇ > T₈ > T₆ > T₅ > T₄. Application of Zinc Sulphate, FYM and PSB inoculation remarkably increased the grain yield of Maize. Therefore, the integrated combination of fertilizer along with PSB inoculation in the treatment T₉ (75% NPK + 100% FYM + 100% Zn + PSB) may be recommended as the best treatment for promoting grain yield of the Maize. Stover yield followed almost similar trend of grain yield besides greater rate of FYM on stover yield of Maize. Treatment T₉ containing 75% NPK + 100% FYM + 100% Zn + PSB produced the maximum yield (86.33 q/ha) followed by treatment T₇ containing 50% NPK + 100% FYM + 100% Zn + PSB which produced 82.33 q/ha. The combined application of treatment T₅ (50% NPK + 100% FYM) also produced significant Stover yield (80.33 q/ha) which was calculated 26.18% higher over the control. The study further suggests the saving of 50% NPK through chemical fertilizer. The targeted treatments involving FYM accompanied by PSB may be recommended for higher recovery of phosphorus in FYM involving treatments.

Key Words: Soil, integrated, accompanied, inoculation.