Effect of Potassium Fertilization on Dry Matter Yield and Nutrient Uptake of Maize (*Zea mays* L.)

Mohammad Amin Bhat*, K. S. Grewal and Dinesh

Department of Soil Science, CCS Haryana Agricultural University, Hisar, 125004, India
**E-mail: bhatamin8@gmail.com*

Abstract—A screen house experiment was conducted to investigate the effect of potassium (K) fertilization on dry matter yield and nutrient uptake of maize. The soils were collected from eight locations representing four major soil orders of Haryana. The crop was grown in earthen pots filled with 4 kg of soil and the experiment was laid out in a completely randomized design with 3 replications. Four levels of potassium, viz, 0, 20, 40 and 80 mg kg^{-1} were applied in the form of muriate of potash along with basic doses of nitrogen and phosphorous as urea and single superphosphate. Distilled water was used to irrigate the crops as and when required. At grand growth stage, dry matter yield of the crop was recorded and nutrient uptake was calculated. The dry matter yield of maize increased with application of potassium. The increase in dry matter yield was significant in Entisols, tested low in available potassium and non significant in Alfisols, Inceptisols and Aridisols where level of potassium was adequate. The uptake of nitrogen (N), phosphorus (P), K and sulphur (S) at harvest increased with increase in dosage of potassium. In general, the greatest uptake of N, P, K and S was observed when the potassium was applied @ 80 mg kg^{-1}. The increased uptake of these nutrients could be attributed to increased dry matter production under balanced supply of nutrients.

Keywords: Potassium, Maize, Dry matter, Nutrient Uptake.