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Effect of Potassium and Magnesium Fertilization on Yield and Nutrient Content of Rice Crop Grown on Artificial Siltation Soil

A. R. BROHI, M. R. KARAMAN, M. T. TOPBAŞ, A. AKTAŞ, E. SAVAŞLI
Gaziosmanpaşa University, Agrucultural Faculty, Department of Soil Science, Tokat-TURKEY

Abstract: The main purpose of this study was to determine the effect of potassium and magnesium fertilization on the yield and N, P, K, Mg, Fe, Cu, Zn, Mn contents of rice crop grown on soil used for cultivation after siltation from the Kelkit River. The experiment was carried out in a randomised block design with 4 replications, using Riba rice grown in pots containing 5 kg of soil. Potassium, K 2 SO 4 , at 0, 20, 40, 60 and 80 kg K 2 O/ha and magnesium, MgO, at 0, 20, 40, 60 and 80 Mg/ha were applied before sowing. Increasing amounts of potassium significantly increased the rice straw dry matter and grain yield compared to the control. However, there were no differences in the potassium treatments (20, 40, 60 and 80 kg K 2 O/ha). Magnesium had a significant effect on the rice straw yield. The maximum rice straw yield was obtained with 60 kg Mg/ha. Mg treatment had no significant effect on the rice grain yield. K fertilization had a significant effect on the nutrient content in straw and grain. On the other hand, Mg fertilization had a significant effect on the K, Mg, Zn and Mn contents in straw, and P, K and Mg content in grain. The uptake of all nutrients in straw was increased with K and Mg treatment. However, the K treatments increased the nutrient uptake in grain, whereas Mg treatments significantly enhanced the N uptake in rice grain.

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