عنوان مقاله:

Effects of Zinc Sulphate and Monocalcium Phosphate Fertilizers on Extractable Zn and Fe under Different Soil Moisture Conditions

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نویسندگان:

R. MOTALEBIFARD - *Faculty of Agriculture, University of Tabriz*

N. N. NAJAFI - *Faculty of Agriculture, University of Tabriz*

S. S. OUSTAN - *Faculty of Agriculture, University of Tabriz*

خلاصه مقاله:

ABSTRACT- To evaluate effects of different soil moisture conditions namely, phosphorus (P) and zinc (Zn) application, on extractable Zn and Fe, two experiments were conducted in laboratory conditions based on a completely randomized design with a factorial arrangement of treatments with two replications. The first experiment was performed with the following factors; incubation time at four levels (۱, ۱۰, ۳۰ and ۶۰ days), soil moisture at two levels (۰.۶ FC and FC), P fertilizer at two levels (۰ and ۶۰ mg P per kg of soil) and Zn fertilizer at two levels (۰, and ۲۰ mg Zn per kg of soil). The second experiment was conducted with two Zn levels (۰ and ۲۰ mg Zn per kg of soil), two P levels (۰ and ۶۰ mg P per kg of soil) and three wetting-drying cycles (۱, ۱۰ and ۲۰ cycles). The results showed that the extractable Zn and Fe decreased by time. The application of Zn fertilizer under FC conditions resulted in higher amounts of extractable Zn in all incubation times. The application of P reduced the extractable Zn and Fe in most incubation times and moisture conditions. By increasing the number of wetting-drying cycles and the duration of incubation time, the extractable Zn decreased significantly. There were no significant differences between constant moisture and wetting-drying cycles on the extractable Zn, except for the application of ۶۰ mg P and ۲۰ mg Zn per kg of soil under ۰.۶ FC conditions.

کلمات کلیدی:

Keywords: Extractable, Phosphorus, Soil moisture, Wetting-drying, Zinc