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ABSTRACT

The aim of this study was to examine the effects of the soil application of humus substances on the dry weight and the nutrient uptake of selected elements in maize grown under salt stress in greenhouse conditions. Sodium chloride was added to the soil to obtain 0, 15, 30, 45 or 60 mM NaCl. Three different doses of solid humus (0, 1 or 2 g kg⁻¹) were applied to the soil one month prior to planting. High levels of salt (45 and 60 mM NaCl) had negative impacts on the dry weight and the N, P, K, Ca, Mg, Fe, Cu, Zn and Mn uptake of the maize plants. The highest mean dry weight, Mg and Mn uptake were observed for the 1 g humus kg⁻¹ treatment and the highest mean Cu content was in the 2 g humus kg⁻¹ treatment. On the contrary, the highest mean uptakes of N and P were found in the soils in which humic substances was not added. The interactions of NaCl and the soil humus content were significant for the uptake of Cu ($p \leq 0.01$), and we found that adding humus increased the content of Cu in maize plants under slight salt stress (15 mM NaCl) ($p \leq 0.01$).