

Effects of Molybdenum Treatments on Maize and Sunflower Seedlings

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Abstract : The aim of the present study was to examine whether increasing molybdenum (Mo) concentration affects on the growth and Mo concentration of maize and sunflower (*Helianthus annuus* L. cv Arena PR) seedlings within laboratory conditions. In this experiment calcareous chernozem soil was used and Mo was supplemented into the soil as ammonium molybdate $[(\text{NH}_4)_6\text{Mo}_7\text{O}_{24}\cdot 4\text{H}_2\text{O}]$ in four different concentrations as follow: 0 (control), 30, 90 and 270 mg/kg. In this study we found that molybdenum in small amount (30 mg/kg) affects positively on growth of maize and sunflower seedlings, however, higher concentration of Mo reduces the dry weights of shoots and roots. In the case of maize the highest Mo treatment (270 mg/kg) and in sunflower 90 mg/kg treatment caused significant reduction in plant growth. In addition, we observed that molybdenum contents in the roots and shoots were very low in case of control soil but were significantly elevated with increasing concentration of Mo treatment. Only in case of sunflower the highest 270 mg/kg Mo treatment caused decrease in Mo concentration.

Keywords : dry weight, maize, molybdenum, sunflower

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