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EFFECT OF CADMIUM ON MINERAL ELEMENTS CONTENT IN RICE (*Oryza sativa* L.) GRAIN

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ABSTRACT

The use of phosphate fertilizers plays a significant role in cadmium (Cd) accumulation in the soil (Grant et al., 2010; Tirado & Allsop, 2012). In this regards the purpose of our work was the study the effect of Cd on the content of mineral elements in the grain of rice varieties. Plants were grown in pots on soil, containing 2 mMol/kg of CdSO₄. Determination of mineral elements performed by ICP-MS - Agilent 7500.

Cadmium was not found in rice grain. The content of mineral elements in grain of rice varieties is decreased in the following order (% of control): Mg - Bakanaskyi (98) > Madina (92) > Chapsari (86) > Barakat (84); Mn - Bakanaskyi (75) > Madina (72) = Chapsari (72) > Barakat (64); Zn - Madina (93) > Barakat (88) > Chapsari (87) = Bakanaskyi (87); Fe - Madina (89) > Bakanaskyi (72) > Chapsari (57) > Barakat (48); Cu - Madina (91) > Chapsari (90) > Bakanaskyi (88) > Barakat (85).

Cadmium decreased the content of necessary mineral elements in rice grain. Cadmium in the least degree reduced the content of mineral elements in Madina variety, in the greatest degree - in Barakat and Chapsari cvs.

Keywords: rice, cadmium, mineral elements