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[previous paper](#) [back to paper's list](#) [next paper](#)Potential of *Azolla caroliniana* for the removal of Pb and Cd from wastewaters[\(get PDF\)](#) Z. Stępniewska², R.P. Bennicelli³, T.I. Balakhnina¹, K. Szajnocha³, A. Banach³, A. Wolińska³¹ Institute of Basic Biological Problems, Russian Academy of Sciences, Moscow Region, 142290, Russia² Institute of Agrophysics, Polish Academy of Sciences, Doświadczalna 4, P.O. Box 201, 20-290 Lublin 27, Poland³ Catholic University of Lublin, Al. Kraśnicka 102, 20-718 Lublin, Poland

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abstract Heavy metals constitute a serious health risk because they accumulate in soils, water and organisms. One of the methods of removing these pollutants from water and soil is the use of plants (phytoremediation). There are many plants (hyperaccumulators) which have the ability to accumulate large amounts of heavy metals. One of them is the aquatic fern *Azolla* sp., which can bind some substances. The aim of this study was to verify the ability of *Azolla caroliniana* Willd. (Azollaceae) to fix Pb and Cd from polluted waters. During the experiment, *A. caroliniana* was grown in water solution enriched in Pb(II) and Cd(II), each at concentrations of 0.1, 0.5 and 1 mg dm⁻³. The presence of lead and cadmium ions caused an inhibition of *A. caroliniana* growth by about 30-37 and 24-47%, respectively. After the end of the experiment, the content of the metals tested was determined in the medium and in the biomass (after mineralization). In the water medium, the decrease of Pb(II) amounted to 90% and that of Cd(II) to 22%. In the *A. caroliniana* tissues, the content of lead was up to 416 mg Pb per kg d.m., and that of cadmium – up to 259 mg Cd per kg d.m.

keywords *Azolla*, bioaccumulation, heavy metals: lead, cadmium