

Copper, Zinc, Manganese, Lead and Cadmium in Plants Gardno Lake – Piotr Trojanowski, Jan Trojanowski, Agnieszka Parzych

Summary

In the present paper there have been shown the results of research on the content of zinc, cadmium, copper, manganese and lead in chosen plants (*Myriophyllum spicatum*, *Potamogeton natans*, *Acorus calamus*, *Nuphar lutea*, *Elodea canadensis*, *Phragmites australis*, *Typha latifolia*, *Sparganium ramosum hudds*, *Veronica anagallis*) of Lake Gardno in the years 2000–2001. The first data concerning the accumulation of those metals in the macrophytes of Lake Gardno has been provided. The biggest concentration of examined metals has been observed in *Potamogeton natans* and *Elodea canadensis*, on average Zn – 34.9 $\mu\text{g g}^{-1}$, Pb – 2.77 $\mu\text{g g}^{-1}$, Cd – 0.62 $\mu\text{g g}^{-1}$, Cu – 3.24 $\mu\text{g g}^{-1}$ and Mn – 257.4 $\mu\text{g g}^{-1}$. They are also characterized by the biggest coefficients of concentration of those metals, and therefore they have the biggest abilities to cumulate in them. It has been found that the over-ground parts of the plants under analysis cumulate several times less of heavy metals than their roots. The determined enrichment factors enabled the researchers to state that copper in the examined plants is of natural origin while manganese, cadmium and zinc – of anthropogenic origin. The highest level of phytosorption of the metals under analysis in Lake Gardno was shown by *Phragmites australis*: Zn – 13.22 mg m^{-2} , Pb – 2.16 mg m^{-2} , Cd – 0.15 mg m^{-2} , Cu – 0.95 mg m^{-2} , Mn – 130.53 mg m^{-2} .