A COMPARISON OF THE EFFECT OF CADMIUM, LEAD AND ALUMINUM ON MEMBRANE POTENTIAL IN CELLS OF *Nitellopsis obtusa*

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Effects of cadmium, lead and aluminum on membrane potential (MP) in internodal cells of *Nitellopsis obtusa* were studied. These metals are common pollutants which cause a number of toxic symptoms in plants. The standard electrophysiological technique was used for membrane potential measurements (Karcz & Stolarek, 1988, *Physiol. Plant*., 74, 770; Stolarek & Karcz, 1987, *Physiol. Plant*., 70, 473). Before the electrophysiological experiments the cells were preincubated within 2 hours in the dark in the solution of the following composition: 0.1 mM KCl, 0.1 mM $CaCl_2$, 1 mM NaCl. Subsequently, one internodal cell of *Nitellopsis obtusa* was transferred into a perfusion Plexiglass chamber and after stabilization of MP the bathing medium was changed for a new one, at the same salt concentration, containing additionally Cd, Pb or Al at final concentration in the range of 10^{-5} M to 10^{-3} M.

It was found that: (1) Cd, Pb and Al changed the value of membrane potential of *Nitellopsis obtusa* cells, which was depended on metal used and its concentration (2) in concentration of 10^{-3} M all metals caused depolarization of MP, whereas Pb in concentration lower then 10^{-3} M brought about membrane hiperpolarization (3) Cd and Al at 10^{-4} M caused membrane depolarization, whereas both metals at 10^{-5} M did not change MP.

Our data suggest that toxic effect of metals decreased in the order Cd > Al > Pb. It is suggest that toxic effect of Cd, Pb and Al might be, at least in part, caused via reduced plasma membrane H^+-ATP-ase activity.