

Effects of Heavy Metals on the Fast Chlorophyll Fluorescence Induction Kinetics of Photosystem II: a Comparative Study

M. Ciscato^{a,*}, J. Vangronsveld^b and R. Valcke^a

^a Limburgs Universitair Centrum, Laboratory of Botany

^b Laboratory of Environmental Biology, Universitaire Campus Building D,
B-3590 Diepenbeek, Belgium. Fax: +32 11 268301. E-mail: mciscato@luc.ac.be

* Author for correspondence and reprint requests

Z. Naturforsch. **54c**, 735–739 (1999); received November 8, 1998/March 10, 1999

Cadmium, Chlorophyll Fluorescence, Copper, Heavy Metals, Zinc

The effects of toxic concentrations of Cu, Zn and Cd on the fast induction kinetics of fluorescence from photosystem(PS)II were investigated in a comparative way. The fast fluorescence transient from primary leaves of metal-treated bean plants was studied. During several days after metal application, the time course of the changes induced by the different metals was monitored. The results evidenced not only a different time course of the changes in fluorescence related parameters for the three metals, but also different effects on the fluorescence induction kinetics, which could possibly be linked to different mechanisms of action of the metals.