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Poster Abstract – I.01

CADMIUM PHYTOREMEDIATION IN *HELIANTHUS ANNUUS*: AN APPROACH BY ENVIRONMENTAL MUTAGENESIS AND X-RAY RADIOGRAPHY

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The progressive deterioration in environmental quality and its involvement in human deseases are promoting the development of research and technology for pollution prevention and environmental remediation. Metals are primary contaminants and technologies based on physical chemical methods are available to separate or concentrate metals; most of these treatments have high cost of installation and management so useful and expensive system for the detection of elements and compounds in biological samples have been improved.

Higher plants may also play an important role in the remediation of metal polluted sites; plants with fungi and lichens are the bioaccumulators most frequently used for heavy metal monitoring. *Helianthus annuus* (sunflower) is a easly recognizable species with an important role in the world food webs, with high tolerance of metals which can provide sufficient quantities of material for repetitive sampling and analysis. Toxic heavy metals cause DNA damage, and their genotoxic effects in plants, animals and humans are most probably caused by their mutagenic effects *[Knasmüller, S. et al. Detection of genotoxic effects of heavy metal contaminated soils with plant bioassays. Mutat. Res. 420, 37–48 (1998)].* Thus, evaluation of the mutagenicity of heavy metals is important in the actual environmental studies. In this work genotoxic damages caused from different concentration of cadmium have been studied in *Helianthus annuus* using micronuclei (MN) induction and DNA laddering evaluation by electrophoresis; peroxidase activity has been also determined as a marker of oxidative stress. Moreover exposition of dried leaves to X-rays has been done to detect cadmium uptake in leaves of sunflower doped with a solution of cadmium chloride.