

EFFICIENCY OF PHOTOSYNTHETIC APPARATUS OF PLANTS IN POLLUTION CONDITIONS

Eriola Hida

University Polytechnic of Tirana, Physics Department, Tiranë, Albania,
email: eri_zhuri@yahoo.com

Abstract

Different specialized institutions have noticed a serious problem with contaminant emissions in atmosphere in Krrabe and surrounding area. Air pollution is generated by Albania's largest industrial complex comprise Steel, FerroChrome and Cement Factories. Pollutions of metalurgical complex as all biotic and abiotic stressors affect the photosynthetic performance of leaves either directly or indirectly. Chl fluorescence signature of leaves as an efficient tool and a nondestructive method for the *in vivo* analysis of plant stress is applying to investigate the photosynthetic light processes and quantum conversion to detect stress on the photosynthetic apparatus. The aim of this paper is to assess changes of photosynthetic activity of the plants by in the presence of industrial pollution from metallurgical complex through chlorophyll fluorescence imaging technique. Fluorescence images of leaves were measured using the FluorCam 700MF imaging system that offers the possibility to study the distribution and patchiness of fluorescence signatures over the whole leaf area. Fluorescence images and measured parameters during the induction kinetics show a reduction of photosynthetic activity apparatus of endemic spontaneous plant Poplar. Fluorescence parameters demonstrate that the degree of reduction of photosynthetic activity depends from the distance of the plant grown areas to the source of pollution.

Keywords: *spontaneous plants, chlorophyll fluorescence imaging, induction kinetics, photosynthetic apparatus*