

**P-98 (189)****EFFECT OF CADMIUM AND LEAD STRESS ON THE CHLOROPHYLL FLUORESCENCE AND CHLOROPHYLL PIGMENTS IN OCIMUM BASILICUM L**

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Cadmium (Cd) and Lead (Pb) are two major heavy metals that are mainly generated from industrial and agricultural practice. Plants are faced with wide range degree of stress when they are subjected to different levels of these heavy metals, leads to growing under unfavorable conditions with disturb in normal plant physiological process. Consumption of contaminated plants through various diets could impose great risks of many health problems including kidney and cancer diseases. In the present research, the effects of Cd and Pb on chlorophyll fluorescence and chlorophyll pigments of basil (*Ocimum basilicum* L.) were evaluated in a completely randomized design (CRD) with four replications. Cd and Pb were applied in four concentrations (0, 5, 10, 20 mg /Kg dry soil), and (0, 100, 200 and 400 mg / Kg dry soil) respectively. Chlorophyll fluorescence parameters were measured by fluorescence-meter (PSM). The content of chlorophyll a and chlorophyll b were determined by spectrophotometer. The results showed that increasing Cd and Pb concentrations had been lead to higher FM and FV in compare with control, while the amount of FO was reduced. The efficiency of photosystem II (FV/FM) in control was 0.834, while it was significantly reduced with increasing Cd and Pb concentrations. There was also a significant reduction in chlorophyll a and b when Cd and Pb concentrations were increased. Increasing Cd and Pb levels caused reduction in chlorophyll contents of leaves as well as reduction in the yield of photosystem II which were resulted in reduced yield production of treated plants under the condition of this experiment.

**Keywords:** Heavy metal, basil, vegetable, photosynthesis, photosystem II