

Effects of UV-Radiation on Some Physiological Parameters in *Capsicum longum* L.

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Abstract

The objective of this work was to evaluate the effects on some physiological parameters of pepper plants (*Capsicum longum* L.) exposed to UV radiation in the greenhouse. Pepper plants were grown in a uniform environment in a growth chamber and they were exposed to UV-A and UV-C radiation after 35 days for 15 and 8 days, respectively. In physiological aspect it was found that protein content have been affected and slightly decreased in both root and shoot exposed to UV radiation. The amount of soluble sugars was significantly decreased in shoot of UV-C treated plants but there were no significant changes in sugar contents in UV-A treated plants. Also, no significant changes were observed in sugar content of the root of UV treated plants. The present work shows that UV exposure increased the activity of APX and GuPX. The rise of GuPX activity was significant only for UV-C exposed plants but APX activity was significantly increased for both UV-C and UV-A exposed plants. MDA content was affected and slightly increased in plants exposed to UV. The rise of MDA in UV-C treatment was more than that of UV-A exposed plants. Dry weight in shoot of UV exposed plants was significantly decreased but this reduction was slight in root of UV-A and significant in root of UV-C treated plants. UV-C radiation significantly reduced number of leaves and lateral shoots per plant, but no significant effect was found in UV-A treated plants. The study shows that pepper plants are sensitive to UV and these findings give an insight into the physiological changes during UV exposure, and indicate the sensitivity of this plants to UV-C more than UV-A radiation.

Keywords: *UV-Radiation, Ascorbate peroxidase, Guaiacol peroxidase, Malondialdehyde, Sugar, Protein, Capsicum longum*