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INFLUENCE OF SHORT-WAVELENGTH ULTRAVIOLET LIGHT ON GENES EXPRESSION IN *Arabidopsis thaliana* PLANTS

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Abstract

The aim of the work was to estimate the impact of the short wavelengths ultraviolet radiation (wavelength is 230 nm) on *Arabidopsis thaliana*. The stress response on some key flowering determination genes AP1, GI, LFY, FT, CO, and the repair gene RAD51 expression were investigated. The grown plants were applied by red (610–700 nm), violet (400–450 nm), neutral white (mixture wavelengths 380–750 nm), 20 V and high intensive white light (mixture wavelengths 380–750 nm) 40V LED. The experimental group of plants was irradiated by short wavelengths ultraviolet on ontogenesis stage 5.1 by Boyes classification. The leaf length as growth parameter mark also was analyzed. The short wavelengths ultraviolet influence caused differences in photoperiodic pathway genes expression in plants grown under different illumination. Acceleration flowering phases under influence white intensive illumination and delay ones in case of violet and common white illumination were observed comparing with control groups. It was revealed that cryptochrome and phytochrome formation play an important role in plant development and stress resistance. It enables to understand the best way of plant cultivation in stressful condition.

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