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HIGH TEMPERATURE EFFECT ON THE MALE GAMETOPHYTE AND THE PHOTOSYNTHETIC ACTIVITY OF TWO CAPSICUM ANNUUM L. CULTIVARS

Induced mutagenesis appears as one of the most powerful methods for creating genetic variability to develop starting material for breeding purposes. This also requires extensive research into mutant forms and their hybrid varieties. A prospective trend in selection is the creation of F1 hybrids with high tolerance to abiotic stress. The high temperature (HT) is already a significant factor of the environment when growing different cultural plants and the pollen vitality and pollen fertility occur to be one of the highest temperature stress sensitive indicators. The effect of high temperature stress on two *Capsicum annuum* L. cultivars: Cv. Zlatan Medal 7 and cv. Yasen F1, which was created based on male sterility obtained by irradiating dry seeds with a range of 60Co doses, has been investigated. In the bud formation-blossoming period the plants were exposed to high temperature treatment in two regimes – $40\text{ }^{\circ}\text{C}/2\text{ h}$ and $45\text{ }^{\circ}\text{C}/1\text{ h}$. More sensitive to high temperatures was the male gametophyte of mutant cv. Yasen F1 in comparison to cv. Zlatan medal 7 in which decisive role over the vitality occurred to be the treatment duration. According to the chlorophyll fluorescence analyses, the two HT regimes result in a change in the chlorophyll fluorescence parameters. The influence of the higher HT value with a shorter impact duration is more pronounced. The mutant nature of Yasen F1 may be the basis for its higher sensitivity to high temperatures.

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