

**P-76 (66)****DROUGHT TOLERANCE AND PHOTOSYNTHETIC ACTIVITY OF THE FOREIGN PEACH CULTIVARS UNDER CONDITIONS OF THE CRIMEAN SOUTHERN COAST**

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The Nikita Botanical Gardens is a large center for breeding of fruit crops. Peach collection plantations of the Nikita Botanical Gardens include over four hundred cultivars and forms. Among them 157 genotypes have been introduced from other countries. Our purpose was to explore the effect of extreme conditions in a summer time on the change of parameters of chlorophyll fluorescence in peach leaves and to select the cultivars with an enhanced drought tolerance. The research has been carried out in laboratory conditions on intact leaf plates belonging to five peach cultivars: 'Redhaven', 'Veteran', 'Gavazuri', 'Hidistavsky Belyiy', and 'Tsyu-Yus-Tsyuy'. The cultivars have been compared during July and August, two periods, contrasting in terms of water regime. The photosynthetic activity has been evaluated after indicators of the chlorophyll fluorescence (Kautsky effect) determined by means of the portable fluorimeter "Floratest". The analysis comprised the change of photosynthetic activity of peach leaves, induced by a twenty-four-hour dehydration. During the period with more stressed water regime (July), the cultivars Redhaven and Tsyu-Yus-Tsyuy keep a high photosynthetic activity. The quantum efficiency shown by these cultivars during dehydration ( $F_v/F_o$ ) had fallen only slightly (9-16 %). The cultivar Hidistavsky Belyiy displayed a relative stability. These cultivars showed a high correlation dependence between the indicators of photosynthetic activity and the parameters of the leaf water regime. In the less stressful water regime period (August), a sustainable photosynthetic activity has been shown by cultivars Redhaven, Hidistavsky Belyiy, Gavazuri. Diagnostics of the condition of the photosynthetic apparatus during dehydration of the peach leaves by using the fluorimetry method makes it possible to assess objectively the adaptation of peach cultivars to extreme conditions in summer time and promotes selecting cultivars with enhanced resistance to drought.

**Keywords:** peach, cultivars, drought resistant, photosynthetic activity, chlorophyll fluorescence

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