

P-2 (16)**VARIATIONS OF PHOTOACTIVITY OF PEACH CULTIVARS DURING THE DEHYDRATATION PROCESS IN THE LEAVES**

Dr. Anatoliy Smykov, Crimea, Yalta, Russian Federation; selectfruit@yandex.ua (Presenting author)

Olga FEDOROVA, Nikita Botanical Gardens, Yalta, Russian Federation; fedorovanikita@yandex.ru

Yuriy IVASHCHENKO, Nikita Botanical Gardens, Yalta, Russian Federation; valta-ivash@mail.ru

Iuliia IVASHCHENKO, Nikita Botanical Gardens, Yalta, Russian Federation; fruit_culture@mail.ru

Natalya MESYATS, Nikita Botanical Gardens, Yalta, Russian Federation; vaslova_natali.zxcv@mail.ru

The insufficient drought resistance is one of the major causes of low productivity of fruit plants in southern Russia. Due to weather specifics of the Crimean southern coast, the issues of the water regime and drought resistance are over here of utmost importance. Evaluation of changes of the photosynthesis efficiency, resulting from influencing by abiotic environmental factors, is an objective indicator of the plant state. The work has been aimed at exploring the influence of dehydration during the wilting process on the peach leaf fluorescence intensity and at determining cultivars with a high potential drought resistance. Exploring of peach leaves in 2015 - 2016 showed, that the cultivars bred in Nikita Botanical Gardens (Yalta) respond differently to the conditions of simulated drought. Experiments showed that the 24-hour period of lamina wilting is optimal for determination of differences between cultivars in terms of photosynthesis efficiency and of the maximal water loss. Explored cultivars showed a high correlation between the indicators of photo activity of leaves and the water content ($r=0.7-0.9$). The cultivar Podarok Like demonstrated a high sensitivity to water loss in leaves (48 to 49 per cent); a weak renewal of tissue turgescence (19 to 25 per cent), the falling water content has been accompanied by a considerable decrease of photosynthetic activity (36 to 55 per cent). Indicators of the water regime and the photosynthesis efficiency in the case of cultivar Krymskiy Shedevr showed a considerable variation during the research periods. This demonstrates the dependence of the plant state on climatic growing conditions. It has been established that the cultivar Mercuriy presents remarkable high regeneration processes (71 to 80 per cent) and water-holding capacity by the side of an unessential reduction of photo activity during dehydration. It was concluded that this cultivar is promising for regions with insufficient water supply. Acknowledgements: This study was funded by a research grant № 14-50-00079 of the Russian Science Foundation.

Keywords: Peach, Photo activity, Drought resistance, Turgescence.