

EFFECT OF LED LIGHTING ON THE CONTENT OF PIGMENTS, FLAVONOIDS, PROLINE AND CARBON IN EX VITRO STRAWBERRY (*FRAGARIA*×*ANANASSA*) LEAVES

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Introduction to *in vitro* culture allows the propagation of virus-free planting material of garden strawberries (*Fragaria* × *ananassa*) regardless of climatic factors. The spectral composition of light is an important factor in optimizing plant development under controlled conditions. The aim of the study was to study the effect of the spectral composition of light on the content of photosynthetic pigments, carbon, flavonoids, and proline in the leaves of six strawberry varieties during the adaptation of microclonally propagated plants in a peat substrate under *ex vitro* conditions. Plants of the Laura, Juicy, Dar, Pervoklassnitsa, Faith and Petra varieties were grown in grow boxes with different spectra of LED lighting (full spectrum, optimized spectrum, reduced red light content) and in a polyethyn greenhouse with solar illumination (control). It was found that the flavonoid content was statistically significantly different for the Dar variety, and its content was higher under LED lighting by 24%. Consistent pattern of proline content decrease under LED lighting in the Dar and Faith varieties was revealed (by 16% for the Dar variety and by 13% – for the Faith). The content of photosynthetic pigments increased under LED lighting in all the studied varieties, while the carbon content did not show any unambiguous pattern. The results showed that the spectral composition of light affects the metabolic processes in the leaves of garden strawberries, however, the effect may depend on the plant variety. The data obtained can be used to optimize the conditions of strawberry plants cultivation in *ex vitro* conditions.

Keywords: strawberry, microclonal reproduction, artificial lighting, spectral composition of light.