



BIOLOGICAL CHARACTERISTICS AND MORPHOLOGICAL FEATURES OF GREENHOUSE GRAPES

Ubaidulla A.M.

Alpamysova G.B.

M. Auezov South Kazakhstan University, Shymkent, Republic of Kazakhstan

e-mail: aruka0297@gmail.com, tel.: +77472060017

<https://doi.org/10.5281/zenodo.17340592>

Relevance: The development of viticulture in protected soil conditions requires the study of the biological and morphological characteristics of various varieties. These studies make it possible to evaluate the anatomical structure of the shoots and the morphological characteristics of the varieties, which is important for the breeding, introduction and adaptation of grapes in Kazakhstan.

The purpose of the study: To study the biological features and morphological features of greenhouse grapes of various varieties, to determine their anatomical structure depending on the diameter of the shoots and to conduct a comparative analysis according to international classifiers of varieties.

Materials and methods: The study was based on the following grape varieties: Alfa, Aleshenkin, Cosmos, Kosmonavt, Muscat Nina, Minsk Pink, hybrid 8-17, and others. The anatomical structure of one-year-old shoots was studied based on their diameter (measured at 3-4 internodes). The morphological characteristics of the varieties were analyzed using three classifiers: UPOV, EVIGEZ, and the Kiskin classifier. The analysis used the thickness and radius of the phloem, as well as the main morphological features of the leaves, shoots, and apical parts.

Results: It was found that the radius of the phloem significantly depends on the diameter of the shoots. The highest value was recorded for the Alpha variety (298.67 μm), and the lowest for the Turkestan Pink variety (135.25 μm). Differences in phloem development were found between the varieties, with most varieties showing an increase in radius with increasing shoot diameter. Morphological analysis according to UPOV showed significant variability of individual features (variation up to 49%), especially the color of the veins and the pubescence of the leaves. At the same time, a number of features proved to be stable and can be used for reliable varietal identification.

Conclusions: The conducted study confirmed that the anatomical and morphological features of greenhouse grapes depend on the variety and growing conditions. The varieties Alpha, Muscat Nina, and hybrid 8-17 are characterized by a more developed phloem, while Turkestan Pink and Minsk Pink showed the minimum values. The obtained data can be used in the practice of viticulture to select the varieties that are most adapted to the conditions of protected soil in Kazakhstan, as well as for breeding purposes.