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MORPHOLOGICAL RESPONSES OF *GALANTHUS NIVALIS* L. LEAF GROWTH TO NATURAL CONDITIONS

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Due to weather conditions, the frequency of extreme years has increased significantly in recent decades, and the modern period is considered as a period of unstable (abnormal) climate; in addition, under the influence of anthropogenic factors, the instability of the climate increases, which can manifest itself in sharp changes in temperature during short periods of time [4]. If in the structure of areas affected by various abiotic factors, the largest share in the world is occupied by soils with a deficiency of nutrients (39%), then the second place in terms of the prevalence of stresses in crop production is the influence of low temperatures (26%) [5].

Although the interest in the problem of plant resistance to low-temperature stress is primarily due to its importance for agriculture, which suffers huge losses due to [3], the problem of cold resistance has a global ecological significance, since the ability of plants to adapt to specific cold conditions in different parts of the planet is one of the factors that determine the distribution of wild species and the possibility of their introduction [2].

Among the processes involved in these mechanisms, the first are the perception of suboptimal temperatures or their physical manifestation and signal transmission to cellular components which program multifaceted modifications of transcriptional, proteomic and metabolic pathways, changes in the composition and physical properties of the cytoplasm, membranes, and cell wall. At the same time, the regulatory mechanisms involved in maintaining homeostasis must remain active and functional to restore normal levels of metabolites and the most important metabolic flows.

The study of the structural features of the leaf of plants belonging to different groups with the aim of learning the patterns of species' ecological differentiation and studying the ways of the plant organism adaptation is one of the important tasks of botany and cell biology of plants. Spatial organization of the structural elements of leaf is important in the formation of the adaptive response of the species since it determines such vital functions of the plant organism as photosynthesis, respiration, and transpiration [1].

These plants were characterized by a short spring period of development. To identify the structural features of the plants, their leaves were selected after an appearance from the soil surface, as well as at the vegetative and generative (budding and flowering) stages of plant development. Leaf elongation was determined as the distance between the soil surface and the tip of the leaf. Using a transparent ruler with an accuracy of 1 mm, the length of the shoots was measured every second to third day after the emergence of seedlings. Based on these measurements, the length of the leaves for the cold and warm periods was calculated. The temperature was measured 20 cm above the soil surface near the plants.

The leaves of *G. nivalis* are simple, oblong-linear, bifacial, dorsiventrally flattened, without pubescence, narrowly lanceolate in shape, pointed at the top, dark green with a faint gray tint and a waxy surface layer Lamina is generally thickened along the midrib, thinning towards the edges. The median vein is single-fascicular, well-defined, wedge-shaped in cross section, which makes the leaf look of varying degrees keeled, considerably keeled. Amphistomatic *G. nivalis* leaves have few stomata, which belong to an aperigenous type. They are located almost evenly on both surfaces of the leaf plates and are oriented parallel to the long axis of these leaves. The plate is covered with a wax coating (a derivative of the epidermis), which represented by vertical columns of wax.

At the development of *G. nivalis*, the growth of leaves is carried out mainly by increasing the size of their length. At each stage of plant development, starting with the appearance of leaves and before flowering, a length of the leaves increases almost twice, while a width, on the contrary, changes slightly In particular, at the late stage of the vegetation during the ephemeroid development, the sizes of the long and short axes of the leaves reach 69.84 ± 0.76 mm and 6.68 ± 0.62 mm, respectively, and during flowering they increase by 115.4% and 13.3%, respectively

During the spring period of *G. nivalis* development, an area of the leaves increases unevenly, however, the general pattern of the ephemeroid leaf growth correlates with changes in atmospheric air temperature, especially during the period of a maximal extension in a leaf area before plant flowering.

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