CHANGES IN ANATOMICAL VARIABLES DETERMINING MAXIMUM STOMATAL CONDUCTANCE IN LEAVES *VINCA MINOR* L. DURING EARLY SPRING

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The natural conditions in most territorial of Ukraine in early spring characterized prevailing low temperatures of atmospheric air and the soil surface layer which are unfavourable for most angiosperms [1]. The reaction to the influence of low temperatures in leaves cold-resistant plants may be some activation adaptive molecular and physiological processes, which are accompanied by ultrastructural changes in chloroplasts and mitochondria. The peculiarities such changes in the *Galanthus nivalis* L. leaves were described in previously published works [2, 3]. An obtained results of ultrastructural changes gave rise to the assumption that low temperatures can also influence the stomata microstructure, which takes active participation in ensuring gas and water plant metabolism. Analysis of scientific publications [4, 5] devoted to studies of the microstructure *Vinca minor* L. leaves, showed that insufficient attention is given to anatomical indicators, by which changes in the physiological stomata processes can be detected.

Taking into consideration the above, in this communication, we have set ourselves the task to the identifying pattern of theoretical anatomic index change, which is reflected the maximum stomatal conductance (g_{max}) [6], and showing the perspectives its use for analysing of the abilities stomata adapt to the influence of early spring temperatures. The experiment result, it was found that in early March at minus temperature –2,4 °C by stomata located on the abaxial leaf side, the g_{max} signification averaged 140,31±0,12 $mM \cdot m^{-2} \cdot s^{-1}$ (n=30, p<0,05). The early April, with increased temperature to +7,7 °C, was revealed to increase g_{max} by 31,1 %. A similar tendency of changes was also found at the stomata density index (SD), which in early April was 23,8 % higher, than in early March. In addition, the revealed direct correlation r=0,64 (p<0,05) between g_{max} and vein density (D_v) can also indicate a possible mutual relationship of stomatal ontogenesis and vein densities, which can be considered as one the components from the total adaptation strategies of cold-resistant *V. minor* to influence of the early spring temperatures. Thus, in early spring, the g_{max} level in young *V. minor* leaves was lower than in later development leaves. A possible decrease in this signification a later period development of leaves *V. minor* can obviously be used in further researches as negative impact intensity indicator of low ambient temperatures on stomata development.

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