FEATURE OF STRUCTURAL ORGANIZATION OF THE EPICOTILE OF *TRITICUM AESTIVUM L*. IN THE ETHIOLATION CONDITIONS

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The absence of light during the cultivation of sprouts influences the duration of epicotyl growth and its length, but also structural organization. The objects of the study were the seedlings of spring wheat Triticum aestivum L. A comparative analysis of the anatomical organization of the epicotyl of etiolated and control wheat plants were carried out according to the following parameters: the thickness of the epidermis, the area of the conducting tissues, the tissues of the central cylinder, the primary cortex, and the diameter of the xylem vessels. It was found that etiolation leads to a thickening of the epidermis in the middle part of the epicotylus, affects the percentage of development of the tissues of the central cylinder and the primary cortex. Epicotyl etiolated plants are characterized by an increase in cross-sectional area in the middle and lower parts; an increase in the proportion of the primary crust relative to the cross-sectional area; a decrease in the area of the central cylinder in the upper and lower part, accompanied by a decrease in the area of conducting tissues. The diameter of the protoxylemal vessels of the conducting beams of the central cylinder of the epicotyle does not differ in the control and in the experimental plants. The location of the coleoptile bud in etiolated plants allows an indirect assessment of the change in activity of the intercalary meristem of the epicotyl.

Key words: spring wheat, soft wheat, epicotyl, conditions of etiolation.

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REFERENCES

Dobrynin G. M. *Growth and formation of grain and fodder cereals*. Leningrad: Kolos, 1969. 228 p. (in Russian).

Kasatkin M. Yu., Stepanov S. A., Gaponov S. N., Korobko V. V. Anatomical plasticity of the epicotyl of wheat. *Bulletin of the Botanical Garden of Saratov State University*, 2008, vol. 7, pp. 237 – 246. (in Russian).

Strapko A. M, Kasatkin M. Yu., Stepanov S. A. Influence of light on the morphogenesis of wheat. *Izvestiya Saratov University. New series. Series: Chemistry. Biology. Ecology*, 2016, vol. 16, iss. 4, pp. 411 – 414. (in Russian).

Shevlyagina O. F., Korobko V. V. Influence of etiolation on mesophyll structure and leaf growth *Triticum aestivum* L. In: *World science: problems and innovations: a collection of articles of the XXII International Scientific and Practical Conference. Part 1.* Penza: MTSNS «Nauka i Prosveshcheniye», 2018. pp. 32 – 35. (in Russian).