ФОРМИРОВАНИЕ ЗАРОДЫША ЗЕРНОВКИ ПРИ ЗАТЕНЕНИИ

FORMATION OF THE SEED EMBRYO IN THE SHADE OF THE *TRITICUM AESTIVUM* L. STEM NODES

E. G. Hachaturov, V. V. Korobko, S. A. Stepanov

N. G. Chernyshevsky Saratov State University
83 Astrakhanskaya Str., Saratov 410012, Russia
E-mail: v.v.korobko@mail.ru

Received February 12, 2019; Revised March 10, 2019; Accepted June 14, 2019

The object of the study was seedlings of spring soft wheat *Triticum aestivum* L. To identify the role of nodes in the system of donor-acceptor relations, the nodes of the upper vegetative metameres of the main shoot were shaded. Shading was carried out before the beginning of mass flowering and during the period of active flowering of plants. A morphometric analysis of the seed embryo of wheat l from experimental and control plants was carried out. It has been established that the shading of the upper nodes of the shoot before the start of flowering of plants affects the formation of embryo structures, namely, the length of the first and second germinal leaves: their length is 8–9 % less than that of the control plants. When shading the wheat sprout nodes during the period of active flowering of plants, the differences in the control and experimental data are not statistically significant. The study showed that the shading of nodes does not affect the severity of each leaf relative to the total total length of all germinal leaves: the length of the first leaf of control and experimental plants is 65 − 66%, the second – 22 − 23%, and the third − 12% of the total length all germinal leaves.
Key words: Stem node, donor-acceptor relations, soft wheat, seed embryo.

DOI: 10.18500/1682-1637-2019-2-3-171-178

REFERENCES

Kirizij D. A. Carbon dioxide gas exchange and redistribution of assimilates in beans at removal of generative organs. *Physiology and biochemistry of cultivated plants*, 2000, vol. 32, iss.2, pp. 106 − 113. (in Russian).

Kirizij D. A. Influence of shading defoliation on photosynthesis and productivity in the system of donor-acceptor relations of plant organism. *Physiology and biochemistry of cultivated plants*, 2003, vol. 35, iss.2, pp. 95 − 107. (in Russian).

Strapko A. M, Kasatkin M. Yu., Stepanov S. A. Light influence on morphogenesis wheat. *Izvestiya of Saratov University. New series. Series: Chemistry. Biology. Ecology*, 2016, vol. 16, iss. 4, pp. 411 − 414 (in Russian). DOI: 10.18500/1816-9775-2016-16-4- 411-414.

Hachaturov E. G., Korobko V. V. Influence of etiolation on morphogenesis of the shoot *Triticum aestivum* L. *Bulletin of the Botanical Garden of Saratov State University*, 2018, vol. 16, iss. 4, pp. 55 – 61. (in Russian).

Chikov V. I. The relationship of photosynthesis with plant productivity. *Soros Educational Journal*, 1997, № 12, pp. 23 − 27. (in Russian).

Bontiett G. D., Incoll L. D. Effects on the stem of whinter barley of manipulating the source and sink during grain filling. I. Changes in accumulation and loss of mass from internodes. Journal of Experimental Botany, 1993, vol. 44, pp. 75 − 82.

Cite this article as:
Hachaturov E. G., Korobko V. V., Stepanov S. A. Formation of the seed embryo in the shade of the *Triticum aestivum* L. stem nodes. *Bulletin of Botanic Garden of Saratov State University*, 2019, vol. 17, iss. 2 − 3, pp. 171 – 178. (in Russian).
DOI: 10.18500/1682-1637-2019-2-3-171-178.