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EAR PRODUCTIVITY DEPENDING ON THE EFFICIENCY OF INFLOW AND OUTFLOW OF ASSIMILATES FROM WINTER WHEAT LEAVES UPON CONDITIONS OF ECOLOGICALLY SAFE FERTILIZERS SYSTEMS

The interdependence between the indicators of assimilates inflow and outflow from the upper leaves (under-flag, flag leaves) during phases of ontogenesis booting – earing – milk ripeness and the cereal productivity of the winter wheat ear (the content of absolutely dry matter in the ear grain, M_{gS}), upon conditions of ecologically safe fertilizers systems (ESFS) are analyzed.

It is established, that the basic alternative fertilizer system (bAFS, variant 2 – v. 2) caused a gain of grain productivity of the winter wheat ear, concerning control (v. 1). The application of ESFS (v. 3–7) led to increase in the cereal productivity of an ear in comparison with bAFS.

The gain of the grain productivity of the winter wheat ear upon conditions of the studied systems of fertilizer is accompanied by an increase in the average values of the specific area, the duration of functioning of the assimilating area of the plants upper leaves ($SLA_{UL1,2}$, $LAD_{UL1,2}$; booting – earing – milk ripeness), total respiration (dark + photorespiration, $R_{(UL)}$; booting – earing), and under most technologies it is significantly dependent on the net and the gross photosynthesis in the specified organs (v. 2, in comparison with v. 1; v. 3, 4, 7 versus v. 2; $\Phi_{n(UL)}$, $\Phi_{g(UL)}$; booting – earing). The interdependence between the final productivity of winter wheat and the indicators of the effectiveness of the use of photosynthates on the acceptor creation, the own assimilating system, the rate of its remobilization from the upper leaves (earing – milk ripeness) are less unambiguous.

It is suggested, that an increase of the average values $SLA_{UL1,2}$, $LAD_{UL1,2}$ (booting – earing – milk ripeness) indicates an prolongation of the period of functional activity of the upper leaves, and thus, a longer accumulation and export of assimilates from them. It is probable, that exactly listed factors cause a best filling of the grain, and a higher dry matter content in it upon the conditions of ESFS, in comparison with bAFS, and control.