

which exceed similar indicators for the implementation of non-dumping tillage systems.

According to the results of the economic assessment, it can be stated that in the conditions that developed during the research, the effectiveness of

the implementation of the studied tillage systems is at the same level. The prospects for further research lie in the scientific substantiation, development and implementation of non-timber resource-saving technologies for tillage under sunflower.

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TRANSGRESSION AND INHERITANCE OF MAIN SPIKELET PRODUCTIVITY ELEMENTS IN SECOND AND THIRD GENERATION HYBRIDS OF *TRITICUM AESTIVUM* L.

The development of winter wheat varieties with high productivity and adaptability to unfavorable environmental factors is the main task of breeding. One of the ways to increase the efficiency of material and technical resources is to use plant varietal potential. Varieties have different traits and properties, genetic potential for productivity, reactions to growing conditions, and adaptive properties, so they differ in terms of yield and product quality. The main indicators that determine the grain yield of winter wheat are plant density and productive stem, length and graininess of the ear, grain weight per ear, and weight per 1000 grains.

The experiments were conducted during 2020–2023 in the fields of breeding crop rotation of the winter wheat breeding laboratory of the V. M. Remeslo Myronivka Institute of Wheat. The material for the research was 30 hybrid combinations created as a result of a full diallel crossing scheme (6/6) of soft winter wheat varieties, carriers of wheat-rye translocations 'Eksprompt', 'Zolotokolosa', 'Kolumbiia' (1AL.1RS), 'Kalynova', 'Svitanok Myronivskyi', 'Lehenda Myronivska' (1BL.1RS). The hybrid combinations were divided into four groups according to the use of WRT carrier varieties in crosses: 1AL.1RS/1AL.1RS; 1BL.1RS/1BL.1RS; 1AL.1RS/1BL.1RS; 1BL.1RS/1AL.1RS.

According to the results of the analysis of F_2 and F_3 plants in 2020, the degree of positive transgression for the trait «length of the main spike» was observed in 53.3% and 36.7% of hybrids. In F_2 , the maximum degree of transgression was observed in the combinations 'Zolotokolosa' / 'Svitanok Mironivskyi' (72.7%) and 'Kalynova' / 'Eksprompt' (18.2%) in the crossing groups 1AL.1RS / 1BL.1RS and 1BL.1RS / 1AL.1RS; in F_3 – 'Kalynova' / 'Zolotokolosa' (14.8%) and 'Zolotokolosa' / 'Kalynova' (11.1%) hybrid combination with the participation of varieties in which both (1AL.1RS, 1BL.1RS) introgressed components are also present.

The degree of positive transgression for the trait «number of grains per main spike» in F_2 populations was found in 93.3% of individuals, F_3 – 80%. Its highest value was found: in hybrid populations F_2 'Zolotokolosa' / 'Columbia', 'Svitanok Myronivskyi' / 'Eksprompt' (32.1%), 'Kalynova' / 'Zolotokolosa' (31.7%); F_3 – 'Kolumbiia' / 'Zolotokolosa' (41.5%), 'Zolotokolosa' / 'Eksprompt' (35.9%), in which most of them have parental components of the carrier variety 1AL.1RS translocations.

Positive transgression for the trait «weight of grains from the main spike» in F_2 was determined in 60.0% of the studied populations, in the third generation – 73.3%. The hybrid populations 'Kolumbiia' / 'Zolotokolosa' (F_2 – 31.1%, F_3 – 39.3%), 'Svitanok Myronivskyi' / 'Zolotokolosa' (26.9% and 31.3%, respectively) were characterized by a high degree of transgression. It was found that 20.0% of hybrid populations of different crossing groups had a positive degree of transgression for the elements of ear productivity in F_2 and F_3 .

Studies have shown that the frequency of isolation of transgressive forms by elements of ear productivity depended on the genotype, generation, and environmental conditions. In this regard, the degree of transgression in subsequent generations is somewhat hidden by their influence. According to the data analysis, in F_2 (2020) a low level of inheritance character manifestation was observed compared to 2021 in combinations, a decrease in the frequency of transgressions in F_2 and its increase in F_3 was noted. Thus, a new valuable breeding material of winter wheat with higher manifestation of both individual and group of productivity traits compared to parental forms was created with the participation of varieties carrying WRT. However, this is not enough, as valuable economic traits are limited in time, so it is necessary to continue research on the use of varieties with WRT in crosses.