Annotation

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Breeding winter barley varieties adapted to modern environments of Forest-steppe of Ukraine

Recently, in the Forest-steppe of Ukraine crop area of winter barley increased significantly, so it needs creating varieties adapted to a relatively "new" environmental conditions.

The purpose of the research – to identify the best breeding lines of winter barley for combination of yielding capacity and resistance to major biotic and abiotic factors under environments of Forest-steppe of Ukraine.

The experiments were performed at the V.M. Remeslo Myronivka Institute of Wheat of NAAS during 2012/13–2014/15 in accordance with conventional methods. Methods: field, analytical, generalization, statistical analysis.

Significant variation in terms of thermal conditions and rainfed environments during interphases of growing season of winter barley was found. Weather conditions in years of the research were characterized with drought (2012/13) or excessive moisture (2013/14-2014/15) which provoked a strong degree of lodging and spread of pathogens. When using AMMI and GGE biplot models, fundamental evaluation of "genotype-environment" interaction for 14 breeding lines was conducted in comparison to the variety Zherar as the national standard of Ukraine. The character of variation in yielding capacity of the lines and their genetic resistance to biotic and abiotic factors in years differing in weather conditions was ascertained.

Breeding lines Pallidum 5083, Pallidum 4765, Pallidum 4916 were selected for combination of yielding capacity, stability, resistance to biotic and abiotic factors and transferred to the State variety testing of Ukraine as new winter barley varieties, respectively MIP Darii, MIP LIDER and MIP Korsar.

Key words: *barley, yielding capacity, stability, resistance, "genotype-environment» interaction, AMMI, GGE biplot*