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RESISTANCE TO DISEASES OF SOFT WINTER WHEAT SAMPLES CREATED BY HYBRIDIZATION OF GEOGRAPHICALLY REMOTE FORMS

The aim of our research was to identify and select soft winter wheat samples resistant to main diseases and created by hybridization of geographically remote forms in order to use them in breeding as donors of resistance.

The research was conducted during 2014–2017 on the experimental plots of Uman National University of Horticulture. 119 samples of soft winter wheat obtained from hybridization of geographically-remote forms were used as the material for research. Phenological observations, evaluations and testing of resistance to diseases (powdery mildew, fusarium blight and septoria blight) were performed on a natural infectious background according to the recommendations of «Methodology of expertise of plants varieties of group grain, groat and legume cultures to suitability for spreading in Ukraine». The resistance of plants to diseases was determined by the nine-score evaluation system, in which nine scores mean the completely resistant to disease, and one score – fully susceptibility.

The lowest intensity of powdery mildew infection was in the plants of sample 4075 with infection rate of 4,0 %, which is by 9,3 % lower than the same parameter for standard variety Favorytka. Samples 6151, 3872 and 6254 were also significantly more resistant compared to the control variant. Other samples were significantly inferior to the above-mentioned forms. The highest resistance to fusarium blight was in the sample 6151. Percentage of infected plants averaged 6,9 %, which is by 2,2 % below the standard. As to their resistance the samples 3872, 4075 and 6254 exceeded variety Favorytka by 1,9 %, 1,4 %, and 0,9 % respectively. The resistance of other tested samples was significantly lower than in the mentioned materials. The intensity of infection by septoria blight in selected samples was relatively homogeneous. The highest resistance to septoria blight at the level of 7.0 % (8 points) have the plants of samples 3872 and 6151. Samples 4075 and 6254 have significantly lower resistance. Other created forms

have significantly lower resistance to septoria blight in comparison with mentioned materials and standard variety.

As a result of the research, four samples of soft winter wheat (4075, 6151, 3872 and 6254) created by hybridization of geographically remote forms with complex resistance to diseases were selected. Created materials showed a significant advantage in resistance to powdery mildew, fusarium ear blight and septoria blight in comparison with standard variety Favorytka. Selected samples can be used as donors of resistance genes in breeding process for creating high-productive wheat varieties.