SOURCE MATERIAL FOR BREEDING OF BREAD WINTER WHEAT FOR RESISTANCE TO LEAF RUST

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Selection of soft winter wheat varieties with group resistance to pathogens is a promising area of breeding. Resistant varieties are weakly affected by diseases, inhibit the growth of infection with pathogens and provide plant protection without the use of chemicals.

The purpose of the work is to create a new genetically diverse breeding material, resistant to leaf rust and other leaf diseases, for using it in breeding process of creation modern winter wheat varieties.

Experiments were carried out in conditions of artificial inoculation by pathogens in field conditions. For creation an artificial infectious backgrounds and assess the degree of damage to wheat plants by pathogens conventional methods were used. For breeding material creation, the intraspecific hybridization method was used according to the methodology of A. F. Merezhko.

The created lines according to the program of resistance to leaf rust on an artificial infectious background of the pathogen showed resistance at the level of 7–8 points. A high stability score 8 was noted for lines Erythrospermum P. r. 141/18, Erythrospermum P. r. 142/18 and Lutescens P. r. 145/18. Less damage to plants by the leaf rust pathogen (3 %) was noted for line Erythrospermum P. r. 146/18. In addition to leaf rust resistance, created lines showed resistance to powdery mildew and leaf septoriosis. Lines Erythrospermum P. r. 141/18, Erythrospermum P. r. 146/18 and

Lutescens P. r. 147/18 showed resistance to powdery mildew pathogen (provocative infectious background) at the level 7–6 points (damage degree 3–5 %). An artificial infectious background of the leaf septoriosis pathogen, was observed high resistance in lines Erythrospermum P. r. 141/18, Erythrospermum P. r. 142/18 and Erythrospermum P. r. 144/18 (stability score 5–6, which corresponds to the damage degree 8–10 %). By the complex of valuable economic features lines Erythrospermum P. r. 142/18 and Lutescens P. r. 147/18 significantly exceeded standard variety Podolianka in yield by 50.30 and 39.30 g/m^2, respectively; Erythrospermum P. r. 142/18, Erythrospermum P. r. 141/18, Erythrospermum P. r. 144/18, Lutescens P. r. 145/18 and Lutescens P. r. 147/18 – by weight of 1000 grains by 3.6–8.8 g. Erythrospermum P. r. 146/18 is recommended for use as a source of short stalk (stem length 79.8 cm).

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