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EFFECTS OF CHROMOSOMES *Elymus sibiricus* ON AGRONOMICAL TRAITS IN SUPPLEMENTED-DISOMNO LINES OF WINTER WHEAT

Purpose. There were evaluated the differences between the line and grade «Obriy» created on its base disomno-supplemented line «O27-2», which was bearing the alien signs of resistance to leaf rust and the leaf trichomes on amphiploida *Elymus* fertile.

Methods. To assess the likelihood of the results, a statistical processing of the results of research carried out by two-factor ANOVA by the Program Statistica 8. This model was used with the free gradations factors "Year" and "Line". Probability difference between the average values were determined using the least significant difference (LSD) and the confidence interval 95% significance level.

Results. Using two-factor ANOVA detected significant effect of interaction factors "Year" x "Line" for signs of Plant height (Hm), Productional bushes 3 (pk₃), Length of the main ear (Lm), Number of spikelets in main spike (NSm), number of fertility spikelets in the main ear (NFm), Weight of the kernels from the main ear (WKm), Weight of kernels from plant excet with the regrowth (WKp) and weght of kernels per plant (WKrt). The impact factor "Line" was significant for the following characteristics: plant height, number of grains, the number of fertile spikelets and number of spikelets in the main ear (Table. 1). The differences between the gradations factor for the "Line" caused by the alien chromosome with a strong negative effect on quantitative traits.

Table 1

Results of dispersion analysis obtained in the study lines Obriy and O27-2 within two years

Characteristic	Source of variation, mS			
	«Year» (df=1)	«Line» (df=1)	The interaction of "Year" x "Line" (df=1)	Error (df=99)
Hm	339,65**	953,53***	252,51**	35,2
pk ₁	7,7*	0,18	0,02	1,77
pk ₂	14,38	15,15	5,27	5,9
pk ₃	27,34*	0,16	110,2***	5,27
Lm	1,13	0,05	8,89***	0,7
NSm	0,16	201,42***	39,56***	2,11
NFm	6,78	85,57***	29,4**	4,3
NKm	65,5	1204,87***	100,88	150,4
WKm	0,06	0,13	1,01*	0,21
NKp	53428	117143	119234	37600
WKp	18,75	13,44	243,96**	35,6
3P	57235,79	142108	126271,88	40789,9
WKrt	21,03	10,83	276,22**	38,91
WTKrt	50,95	662,73*	156,09***	14,40
WTKm	0,01	742,07*	155,65**	18,96
WTKp	9,44	583,25*	242,82*	18,79
Dt	4,22	277,39*	0,02	2,44
dN	4,85	24,42*	0,75	1,56
NKst	0,01	0,25	0,05	0,19

Notes: * - significant at P = 0.05; ** - Significant at P = 0.01;

*** - Significant at P = 0.001

According to the structural analysis for the period 2013-2014, detected precise regularity to reducing the number of grains in the main spike line "O27-2" (1A). The same pattern was observed for the following traits: the number of fertile spikelets in the main spike, number spikelets in the main spike and plant height (1B, 1C, 1D).

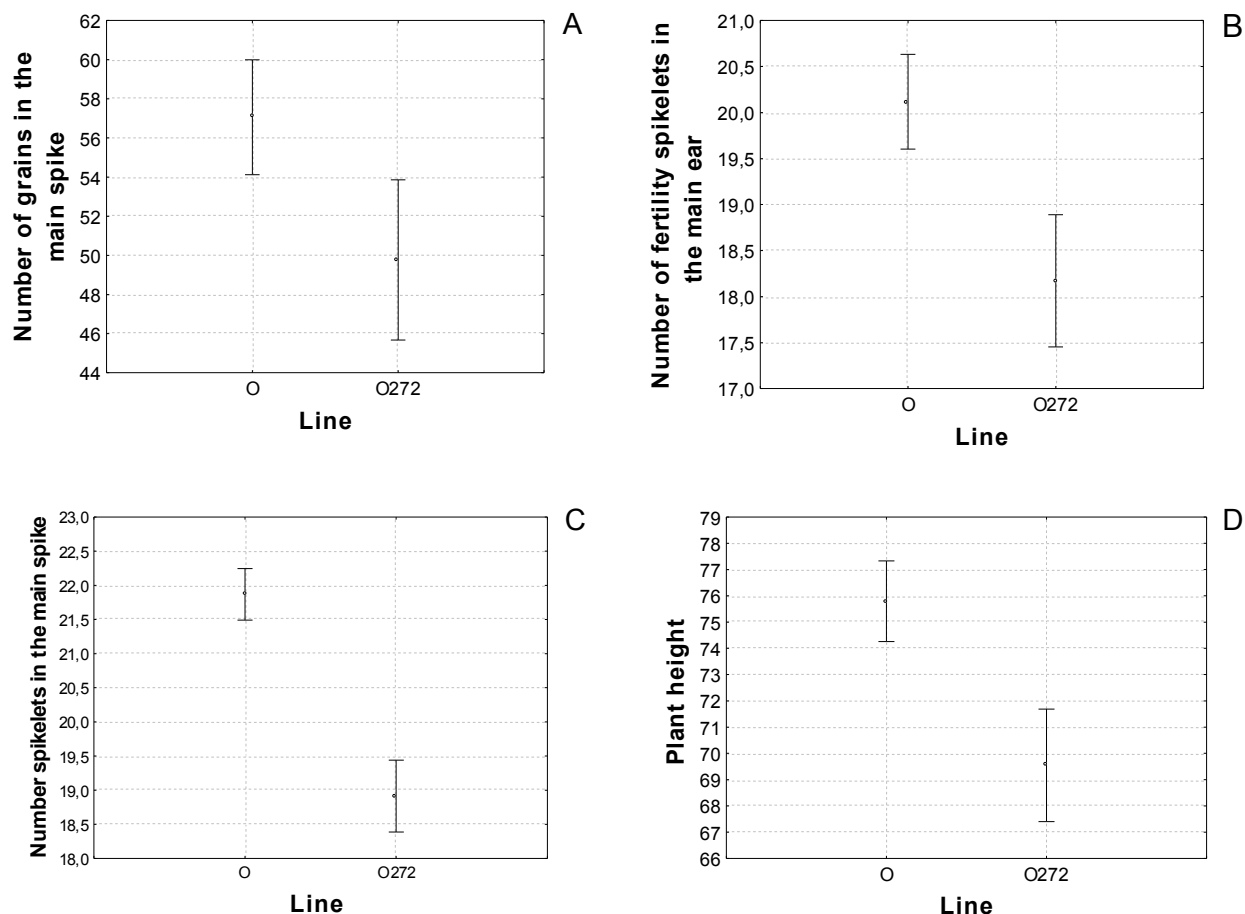
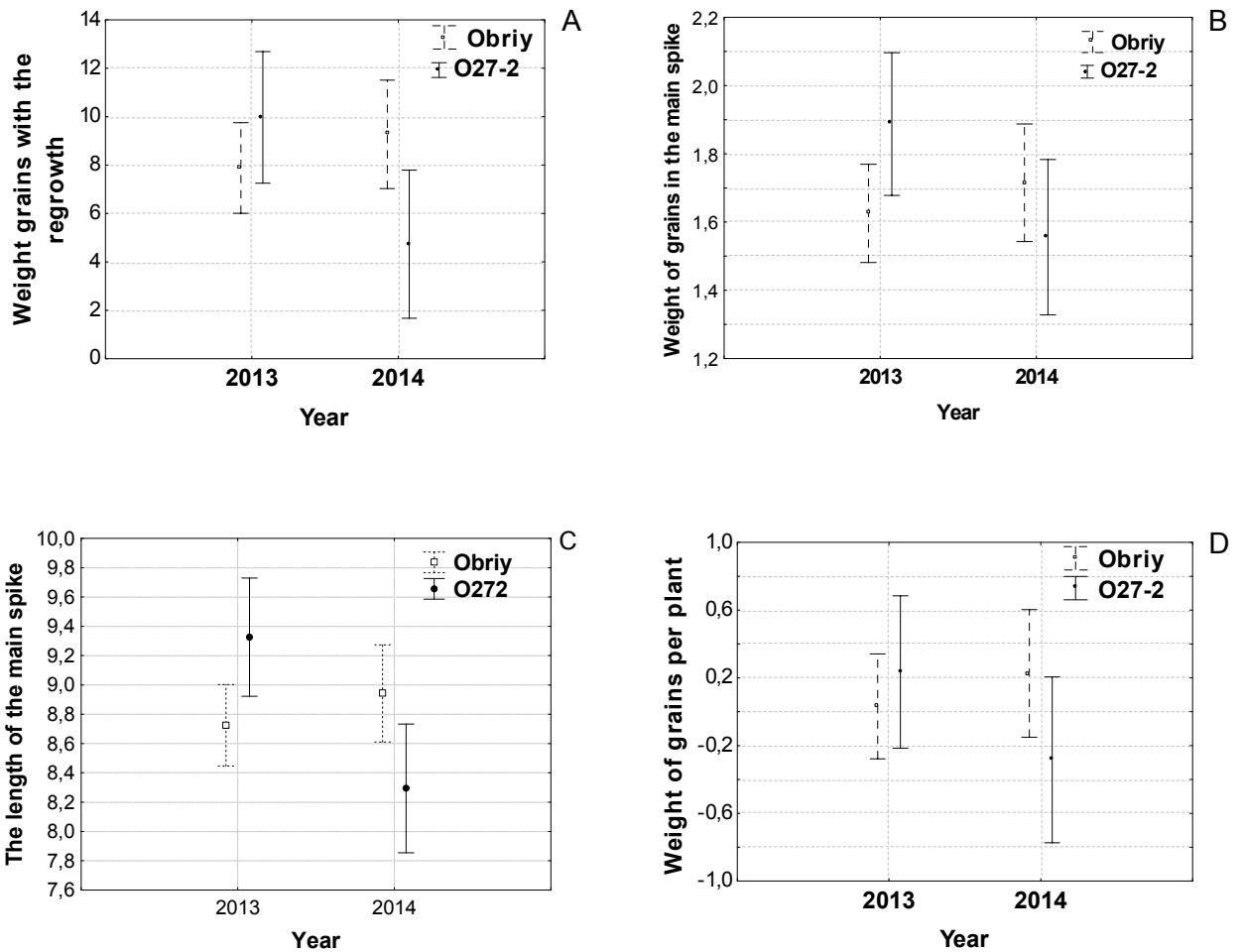


Fig. 1. Dependence performance NKm(A), NFm (B), NSm (C), Hm (D) the factor of "line" in comparative genotypes O - "Obriy" and "O27-2"

After two years of research, except for significant a separate impact factors "Line" and "Year", discovered significant ($p < 0.05$) proportion of their interaction ("Year" x "Line") in the total variance of the following characteristics: weight grains with the regrowth (A), weight of grains in the main spike (B), the length of the main spike (C), weight of grains per plant (D) (Fig. 2). That is complemented chromosome a negative effect on these characteristics was manifested only in 2014. While the conditions in 2013 identified a clear trend at improving these characteristics in the presence of alien chromosomes.



Picture 2. Weight of grain pidhoniv (A) weight grains in the main spike (B), the length of the main spike (C) and weight of grains per plant (D) depending on the conditions of the year and genotype lines.

Resistance was defined Obriy lines and O27-2 to infectious diseases (Table. 2). Phytopathological evaluation given to determine the degree of damage to adult plants. The mentioned lines characterized by the same high susceptibility to powdery mildew, yellow and stem rust, septoria and BYD. However, the lines have different indicators for resistance to leaf rust. The line O27-2 marked high resistance to this infection that constitutes 7.8 points, while isolated from a variety Obriy line is characterized by recurrent nearly 100% damage to plants (1-3 points).

Table 2

Resistance Obriy lines and O27-2 to infectious diseases, points

Line	Oidium	Leaf rust	Yellow rust	Stem rust	Septoria	BYD
Obriy	2-4*	1-3	4-5	3-4	5-6	3-5
O27-2	2-4	7-8	4-5	3-4	5-6	3-5

* The scope of variation during the of research

Conclusions.

St chromosome genome *Elymus sibiricus*, which encodes necrotic signs of resistance to leaf rust and strong leaf trichomes upper surface of the leaf blade, in a wide-planting mostly negative impact the agronomic characteristics of wheat (plant height, number of spikelets in the main spike, the number of fertile spikelets, the number of grains in main spike). However, productive tillering, the main spike length, grain weight of main spike with the regrowth. and, in general, from plants - had designated weak impact and significantly modified the conditions of the year. Overall complemented line characterized by higher thousand grain weight compared to the recurrent form.

The said chromosome significantly increases plant resistance to leaf rust, but does not affect the response of plants to the impression powdery mildew, yellow and stem rust, septoria, BYD to which both lines showed susceptibility.