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РЕСПУБЛИКИ КАЗАХСТАН

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STUDY OF A WINTER BARLEY COLLECTION IN THE SOUTH KAZAKHSTAN CONDITIONS

Abstract. The article reports the findings of a study of a winter barley collection for yield and suitability for South Kazakhstan conditions. Following the study, 19 varieties of winter barley have been identified: those having a high yield, winter-resistant, disease resistant and resistant to environmental stress. The identified barley varieties will be studied according to a comprehensive scheme of the selection process and included in the hybridization plan, as a source material for yield increase.

Key words: barley, breeding nursery, collection, sample, cultivar, standard.

Introduction. Barley is one of the most widely spread cereal crops in the world. Products manufactured from this crop find various applications: grain forage, cereals, raw materials for thebrewing industry. Barley is widely used in fodder production: as formula feed grains, as a grazing crop, to ensure repeated use of a field area as a pasture, to obtain a milk-wax silage or a feed mixture as well as to obtain hay, which may be used as a coarse fodder [1].

In the changing climate conditions, at various stages of economy development creation and introduction in production adapted, with various economic and valuable signs of complementary grades of barley, in the maximum degree to the meeting requirements of agriculture, is the main direction of selection work of department of selection and seed farming of barley of the All-Russian Research Institute Of Grain Crops named after I. G. Kalinenko. At different stages of selection at institute different methods of selection were applied: simple crossing, back crossing, method of difficult step crossings. As a result of difficult step hybridization grades of winter barley Timofey, Eryoma, and others were received. The researches conducted atARRIGC showed that selection of couples for hybridization of the grades differing on reaction to the temperature and light modes serves as further development of aselection of components of crossings in morphological contrast and elements of efficiency. The special attention is paid tothecreation of winter-hardy alternate grades with high rates of productivity both at spring, and at autumn crops in recent years; early ripe grades with the large well-executed grain suitable for the groats industry. Selection of the two-row grades of winter barley capable in the conditions of the Southern Federal District steadily by years is conducted to yield big crops of the grain suitable for brewing. Works on creation the hulless and the awnless of grades of winter barley and the alternate barley are begun [2].

Due to the analysis of experimental data, it has been found that winter barley ripens 7 days earlier than winter rye and 12 days earlier than winter wheat. The high productive tilling capacity and non-lodging stems provide more than 3.0 tons of grain per hectare. According to its feeding and energetic value, winter barley is inferior to winter wheat but exceeds winter rye [3].

Among the grain crops, which are cultivated in Western Siberia, winter grain takes a special place. Advantages of winter crops over the summer are that in autumn they develop the powerful root system and cluster well, early in the spring quickly start in growth and ripen for 10-15 days before the summer

grains. The winter grain well uses the autumn moisture and suffers less from droughts and dry winds. The winter barley is the new culture for conditions of Kuznetsk Depression, which is earlier not cultivated, it is less frost-resistant in comparison with winter wheat and more strongly suffers from the return of frosts in the spring period after vegetation renewal. The weather conditions in the years of researches have the contrast hydrothermal mode during the vegetation of winter barley, their considerable influence on its productivity – 89.2 % is established. The close interrelation between productivity and elements of productivity of winter barley is defined: with theefficiency of an ear, quantity of the productive stalks which remained to harvesting [4].

In the southern regions of Kazakhstan and, overall, in Central Asia, barley is typically sown in autumn. The ability to grow barley in regions located further to the north is to a large extent related to advances in the breeding process, due to which plants with increased freezing tolerance may be obtained. Therefore, a concept must be developed and substantiated, which would allow to obtainnovel genotypes of winter barley that would ensure the possibility to broaden the cultivation area of the crop in Kazakhstan [5].

The demand for barleycorn is growing dramatically due to many reasons, in particular, due to therapid development of livestock farming in Kazakhstan. The breakthrough project for Kazakhstan is export of halal animal products to the Middle East countries. Therefore, well-balanced forage is required to produce high-quality animal products.

In this regard, athorough study of global seed collection becomes highly relevant, as well as identification of valuable sources of parent materials and production of barley cultivars with enhanced yield characteristics on the basis of such parent materials to meet the demands of agriculture and processing ind-ustry. It will not only facilitate therapid increase of yield capacity, barleycorn quality and fresh yield, but also cause a reduction of production cost [6,7].

The objective: Study of domestic and foreign selected winter barley seed collection material, identification of promising specimens and replenishment of genetic resources with valuable varieties.

Findings. The research has been performed at Krasnovodopad Agricultural Experiment Station LLP, at the Barley Breeding Department, located in Saryagash District of South Kazakhstan Region.

Coordinates: $41^0$22'N, $69^0$21'E. The station is located at 591 meters above sea level.

The climate is characterized by large daily and yearly temperature variations, precipitation periodicity (precipitation being common with winter and spring), anabundance of sunlight and heat.

Sunshine duration totals 2692-2889 hours per year. The number of clear days is over 240, reaching 23-25 days in summer and 4-5 days in winter.

During the period from 2015 to 2016, 103 specimens of winter barley from the ICARDA collection and hybrid populations of domestic breeding were studied.

The specimens were seeded in a collection nursery according to the accepted procedure of the All-Union Research Institute of Plant Breeding (1989), in plots with the area of 1 sq.m, in triplicates, during the optimal periods. Bereke-54 cultivar with wide zonation was used as a reference.

Agricultural technology used on the trial field was compliant with the conventional methods for this region. Prior to seeding, the plot was clean cultivated. SSFK-7 sowing machine was used for seeding. Taking care of the collection specimens included weeding in the rows, discriminating care and optimal irrigation. At the first stage of the study of the new source material, we analyzed the yield of the plants: thousand-kernel weight and determined the weight of kernels per plot.

Phenological observations were implemented for all vegetative periods. Specimens assessment commenced on January 1, in accordance with the worldwide standard. The ripening period for the specimens was 145-153 days. Accordingly, the specimens were divided into three groups: early-ripening, mid-ripening and late-ripening. The ripening period for the reference cultivar, Bereke-54, was 149 days; thus, it was classified as a mid-ripening cultivar. 28 early-ripening winter barley specimens with the ripening period of 145-147 days were selected.

In the course of studies during 2015-2016, no visible signs of disease were observed in collection barley specimens. The studies were performed against the natural background. The specimens were rated according to a 9-point scale, wherein: 1 point relates to plants characterized by very low resistance; 3 points by low resistance; 5 point – by medium resistance; 7 points – by high resistance; 9 points – by very high resistance. The study of disease resistance in winter barley plants revealed that no significant

disease manifestations occurred due to drought during spring. Specimens with very low resistance were identified (degree of plant damage: over 50%). The great majority of the specimens demonstrated resistance to diseases with the rating of 5-7 points (from 15 to 25%). The study of winter resistance was implemented against the natural background in autumn on a plot with the area of 1/4 sq.m, by counting the surviving specimens in spring. Due to the warm winter, all specimens passed the winter successfully and demonstrated high winter resistance.

In bogharic agriculture, thedegree of lodging of barley plants is closely related to the height of the plants, especially during wet years. High degree of lodging was observed for tall specimens, having the height of 100–115 cm. Specimens with the height of 80–95 cm demonstrated medium resistance to lodging, 18 specimens with the height of 70-80 cm demonstrated high resistance to lodging.

The international classification provides for the following scale for the thousand-kernel weight parameter for barley:

– very low, below 36.0 g;
– low, 36.1–40.0 g;
– medium, 40.1–45.0 g;
– high, 45.1–50.0 g;
– very high, high 50.0 g.

Obtaining of a cultivar with high thousand-kernel weight is a final factor to ensure high and sustainable yields. Following the study, average thousand-kernel weight for all 103 collection specimens was 32–64 g. The lowest characteristics were observed for ICARDA specimens with thousand-kernel weight of 32–36 g or lower. The highest thousand-kernel weight was observed for indigenous hybrid varieties: 50–64 g (please refer to table).

Collection specimens were assessed for yield capacity in the area of 1 sq.m for each variety. In relation to yield, 21 specimens were identified.

Yield of the collection specimens

No.	Name	Origin	Thousand-kernel weight	Yield	Deviation from reference	
			g	Hundredkilo sperhectare	Hundredkilo sperhectare	%
1	Bereke 54, st	Krasnovodopad Agricultural Experiment Station	40,0	40,3	0	0
2	L-5/T-74	ICARDA	48,0	41,0	+0,7	1,7
3	L-8/T-74	ICARDA	43,6	60,0	+19,7	48,8
4	L-9/T-74	ICARDA	42,4	41,6	+1,3	3,2
5	L-11/T-74	ICARDA	40,0	46,0	+5,7	14,1
6	L-18/T-74	ICARDA	44,4	41,2	+0,9	2,2
7	L-22/T-74	ICARDA	48,0	42,1	+1,8	4,4
8	L-14/T-74	ICARDA	45,0	50,0	+9,7	24,0
9	Pamir-009	ICARDA	42,0	46,0	+5,7	14,1
10	L-2/T-75	ICARDA	44,4	41,2	+0,9	2,2
11	L-5/T-75	ICARDA	44,7	43,0	+2,7	6,6
12	L-9/T-75	ICARDA	48,2	41,8	+1,5	3,7
13	L-13/T-75	ICARDA	48,6	41,3	+1,0	2,4
14	L-24/T-75	ICARDA	48,0	48,2	+7,9	19,6
15	L-35/T-75	ICARDA	48,2	46,8	+6,5	16,1
16	L-41/T-75	ICARDA	44,3	54,3	+14,0	34,7
17	N-13-2	Krasnovodopad Agricultural Experiment Station	56,0	43,8	+3,5	8,6
18	N-1-3	Krasnovodopad Agricultural Experiment Station	58,4	45,0	+4,7	11,6
19	L-39/T-62	Krasnovodopad Agricultural Experiment Station	50,4	42,0	+4,7	4,2
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The following varieties were found to have improved characteristics against the reference: L-8/T-74 by 19.7 hundred kilos per hectare or by 48.8 %, L-41/T-75 by 14.0 hundred kilos per hectare or by 48.8%, and L-14/T-74 by 9.7 hundred kilos per hectare or by 24,0% (please refer to the table).

Conclusion. Following the study, 19 varieties of winter barley have been identified: those having a high yield, winter-resistant, disease resistant and resistant to environmental stress. The identified barley varieties will be studied according to a comprehensive scheme of the selection process and included in the hybridization plan, as a source material for yield increase.

REFERENCES

[1] Kozmin A.K. Cultivation of barley in Kazakhstan // In book: Forage culture. M.: Kolos, 1975. P. 102-108.

[2] Filippov I.G., Dontsova A.A. Methods of selection of winter barley and principles of selection parental couples at hybridization // Proceedings of the Kuban State Agrarian University. 2015 (54): 323-327.

[3] Makarov V.I., Glushkov K.V., Maslova N.F. A comparative estimation of winter crops productivity under conditions of the Mari El Republic // Agrarian Science of the North-East. 2013 (3): 14-17.

[4] Pakul V.N., Martynova S.V., Kozyrenko M.A. Winter barley volzhskiy perviy in the conditions of the north forest-steppe of the kuznetsk depression // Science and the World. 2015 2 (3): 137-141.

[5] Ortaev A.K. Breeding of barley on non-irrigated areas of South Kazakhstan // Scientific basis for the development of agriculture in southern Kazakhstan. Almaty, 2001. 23 p.

[6] Azimov R. Kazakhstan grain export is among six world leaders // AGROinform. Astana: KazAgroMarketing, 2008. N 1. 2 p.

[7] Lukyanova V.I. Global gene pool and its importance for breeding // In book: Barley. L.: Agropromizdat, 1990. 374 p.

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ОҢТҮСТІК ҚАЗАҚСТАН ЖАҒДАЙЫНДА КҮЗДІК АРПАНЫҢ КОЛЛЕКЦИЯЛЫҚ ҮЛГІЛЕРІН ЗЕРТТЕУ

Аннотация. Мақалада Қазақстанның Оңтүстігінде күздік арпа үлгілерінің өнімділігі мен бейімделуі бойынша зерттеу нәтижелері көрсетілген. Зерттеу нәтижесінде қысқа төзімді, аурулар мен қоршаған ортаның қолайсыз факторларына төзімді 19 жоғары өнімді үлгілері іріктеліп алынды. Ерекшеленген арпа үлгілері әрі қарай толық селекциялық процессте зерттеліп, өнімділікті арттыру мақсатында будандастыру жоспарына енгізіледі.

Түйін сөздер: арпа, өсімбақ, коллекция, үлгі, сұрып, стандарт.

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ИЗУЧЕНИЕ КОЛЛЕКЦИИ ОЗИМОГО ЯЧМЕНЯ В УСЛОВИЯХ ЮГА КАЗАХСТАНА

Аннотация. В статье приведены результаты исследований коллекции озимого ячменя на продуктивность и адаптивность к условиям Юга Казахстана. В результате изучения быливыделены 19 образцов озимого ячменя: высокопродуктивных, зимостойких, устойчивых к болезням и неблагоприятным факторам окружающей среды. Выделенные сортообразцы ячменя будут изучены по полной схеме селекционного процесса и включены в план гибридизацийкак исходный материал для повышения продуктивности.

Ключевые слова: ячмень, питомник, коллекция, образец, сорт, стандарт.

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