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Features of socialization of adolescent children with mild mental retardation

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Abstract. When creating new varieties of bread wheat, first of all, the correct selection of donor varieties for hybridization depends on the success of the selection process. In the selection of donor varieties, great attention is paid to the fact that some of the characteristics of the hybrid, which are expected to obtain mainly appropriate forms, are dominant in some donor varieties. The choice of donor varieties may vary depending on the direction of selection. For example, in order to create varieties resistant to early ripening and rust diseases, the selection of donor varieties is carried out according to the shortness of development phases and resistance to disease.

Creating new varieties by simple hybridization is a very difficult task today, as it requires more valuable features in the varieties selected for hybridization. That is, both varieties obtained as donors are required to be resistant to biotic and abiotic factors, stable high yields, resistant to lodging and high grain quality. If this valuable set of features is not in a single variety, complex hybridization will have to be carried out.

Taking into account the above considerations, the Kashkadaryo branch of the Research Institute for Grain and Leguminous crops organized a nursery of donor varieties using 100 varieties and lines on the central experimental plot in the territory of Ya. Omonov. These varieties and ridges are from distant regions of geographical origin and were selected during selection work in recent years. Varieties and ridges were planted on a non-returnable area of 1 m^2 and along with hybridization, the characteristics of varieties and lines were also assessed.

Keywords. variety, line, donor, hybrid material, breeding, vegetation period, protein, gluten.

Introduction.

From 1950 to 2002, more than 200,000 hybrids were carried out under the bread wheat cultivation program, and more than 10,000 new ridges of these hybrid generations were tested in different climatic conditions, creating more than 500 new bread wheat varieties and covering more than 40 million hectares [1, 2, 3].

The updated forecasts of the international organization FAO show that global wheat production in 2020 will reach 758.3 million tons, which is 0.5% lower than last year's highest figure, but still shows a high level of crop production.

In 2019, world wheat production was 762.2 million tons, an increase of 3.9% over the 2018 season. Wheat production in the world reached its highest level in 2017 - 773 million tons.

Looking at last year's list of the most advanced wheat-growing countries, China (134 million tons), India (102 million tons) and Russia (75 million tons) are among the top three countries with the highest wheat production in 2019. together it accounts for 41 percent of world production. These countries are followed by the United States, France, Canada, Ukraine, Pakistan, Australia, Turkey, Germany and Argentina, which together account for 34% of world production [28].

Cereals are grown on 220 million hectares of land in the world, bread wheat accounts for 30% of this area, and most areas are affected by abiotic factors. Wheat can be exposed to heat at any stage of the growing cycle. The average air temperature for the growth and development of wheat is 18 - 25 ^{0}C, and when it exceeds 32 ^{0}C it begins to have a negative effect. An increase in air temperature

above 32 ^{0}C has a strong effect on the reproductive organs, having a major negative effect on the process of grain filling in the middle and late stages of developmental phases [4, 5, 7, 8].

There are important rules on the selection donor varieties. In thepractice of synthetic breeding for the creation breeding material first of all parenting pairs are selected by hybridization. The success of hybridization depends on how properly the parent pairs are selected [6, 9, 10].

In the process to create new varieties with high yield, the crossing is carried out to take an attention of productivity features of plants. For example, for the wheat they are the quantity of productive plants, a grain size, a weight of 1000 grains, a yield of variety and etc [11, 14, 15].

The weight of 1000 grains is an indicator of the size and fullness of the grain. This is a sign of diversity, and at the same time emphasizes that the climate during the period of strong saturation depends on the conditions. It has been scientifically determined that the size of a grain of wheat depends on the duration of the growth period, in particular, on the elongation period of ripening [12, 13, 16].

The amount of protein in wheat grain is one of the main elements of quality indicators and is closely related not only to its nutritional value, but also to its technological quality [17, 18].

Today, 15-20 percent of the wheat grown in the world meets the demand for strong wheat, while the quality of grain is 50-55 percent of weak wheat. This weak wheat can give quality bread only if 20-40 percent strong wheat is added to it [19, 21, 22].

Wheat yield depends on plant structure, metabolism, and substances in the grain. Every physiological phenomenon can change under the influence of genotype and environment, and there is an inextricable link between genotype and environment [20]. The variability and heredity of quantitative traits are not uniformly covered in the literature. A characteristic feature of this is that it depends on the external environmental conditions, which poses a great difficulty in selection. The most important thing in selection is a specific genotype or homo- and heterozygous and other indicators of productivity is what genetic potential it has. These two factors depend on the selection of the best genotypes from hybrid mixtures in hybridization. Dilmurodov et al. stressed the need for a comprehensive study of complex primary forms in order to properly apply genetic theory in the selection process [23, 24, 25].

The duration of vegetation stages are used for the selection of pairs and creation varieties with early maturity. Moreover, for this, in the crossing process a vegetation stage of a pair should be shorter, on the second pair not exactly this vegetation period, but another one should be short. Only then, it could be for the purpose of what was focused [26, 27].

Materials and methods. On the nursery of the selection of primary source and donors for the breeding 100 varieties and samples were selected and researched which belonged to different ecological and geographical regions. The varieties and samples were placed on 5 m^2 with 3 replications. In research a placement scheme of the field experiment was based on the "Alpha lattice design" of the program Genestat 3. A placement of the experiment and during the research a phenological observation, a calculation and analysis were based on the method of Union Institute of Plant Breeding (UIP,1984), and biometric analysis were based on the methods of the Commission of the State variety testing of agricultural crops (1985, 1989). Mathematical and statistical analysis of the experiment were committed according to the developed guide by B.A. Dospekhov (the Method of field experiment, 1985).

Results and Discussion. On the research grows stages of the varieties and samples were studied and donors were selected for the creation new varieties with earliness, high yield and resistance to diseases of wheat.

On conditions of the global climate changes the earliness of varieties and samples is more important especially on the south regions of our Republic. A grain filling stage of early varieties usually begins early and it gives to have enough time for the full filling of grains before the

coming drought, heat and dry hot wind at the last months days of spring season. Regarding this early stage of grain filling valuable farm characteristics, yield and weight of 1000 grains are higher.

1-table

Classification of varieties and lines on their valuable characteristics,

Valuable characteristics	The criteria of evaluation	Quantity of varieties and lines	in %
Germination-heading stage	165-169 days	14	14,0
	170-174 days	42	42,0
	175-179 days	40	40,0
	180-184 days	4	4,0
Plant height	Dwarf (50-75 cm)	2	2,0
	Short (76-90 cm)	28	28,0
	Medium (91-110 cm)	70	70,0
Weight of 1000 grains	Large (> 40,0 gr)	59	59,0
	Medium (35,1-40,0 gr)	34	34,0
	Cmall(30,1-35,0 gr)	7	7,0
Yield, c/ha	60,1-80,0 c/ha	35	35,0
	40,1-60,0 c/ha	60	60,0
	< 40,0 c/ha	5	5,0
Protein content, %	12,1-13,0 %	9	9,0
	13,1-13,9 %	28	28,0
	< 14 %	63	63,0
Gluten content, %	< 22 %	1	1,0
	22,1-26,0 %	18	18,0
	26,1-28,0 %	34	34,0
	> 28 %	47	47,0

As the results of the research showed, germination stage of varieties and lines was observed on the 1-4 of November. And tilling was on the 11-16 of December, tubing stage was on the 8-15 of March. Heading stage of the varieties and lines was observed and it lasted from the 17 of April to 04 of May. The quantity early varieties was 14 which germination-heading stage lasted 161-163 days. The other varieties and lines were founded as a medium and late maturity.

According to experience data, "germination-heading" stage was identified as 165-184 days. Chillaki, Kh.Beshir, Jaykhun, Starshina, Rapsodiya, Zvezda, Dragona, Navruz, Alex, Bologna, Bunyodkor was founded as the varieties which had earliest heading and short "germination-heading" stage. These varieties were recommended as the donors for hybridization purpose to create early varieties.

The transition period to maturity stage of varieties and lines was between the 30 of May and 10 of June. There were 10 varieties, which went into the maturity stage between the 30 of May and the 01 of June. According to duration of growth periods, the varieties and lines were chosen as donors, which went into the maturity stage during the short time, and these were recommended for hybridization.

2-table

Selected varieties and lines according to the valuable farm features and characteristics.

№	Name of variety	Yield, c/ha	Weight of 1000 grains, gr	Amount of protein, %	Amount of gluten, %	Plant height, cm	Quantity of grains on an ear, pcs
1	Bobur	65,8	39,7	14,6	28,9	95,3	66
2	Omad	61,8	38,8	14,5	28,3	85,0	46
3	Rapsodiya	64,6	41,3	14,4	28,4	80,7	57
4	Jayxun	70,6	44,0	16,4	28,5	98,3	66
5	Turkiston	74,0	42,1	16,1	31,2	102,3	56
6	Oktyabrina-70	63,7	42,7	14,6	28,8	89,7	47
7	Navruz	66,4	43,1	15,6	31,4	97,0	64
8	KP11-100-42	61,5	42,4	15,7	28,2	100,0	51
9	KP11-100-57	62,2	41,1	14,6	28,3	95,7	49
10	KP11-100-58	76,6	42,1	15,3	29,9	80,0	62
11	Kopernika	65,4	41,5	14,6	28,2	86,7	65
12	Nudela	62,2	41,2	15,0	28,4	83,0	58
13	Antanovka	67,5	38,6	14,3	29,4	81,3	61
14	Miranda	66,0	39,0	14,0	28,3	99,3	64
15	H.Beshir	73,6	42,8	14,3	28,8	103,7	63
16	Elomon	71,9	41,6	14,1	28,3	101,7	63
17	KP11-100-85	61,3	34,9	16,4	30,2	71,7	62
18	KP11-100-87	62,6	46,1	14,3	29,9	103,0	55
19	Kiriya	62,8	40,9	14,4	28,1	91,3	54
20	Bologna	66,8	42,7	15,4	29,0	90,3	58
21	Krasnodar-99 (check)	55,4	40,9	14,0	28,3	95,7	54
	LSD05	1,73	1,06	0,37	0,73	2,99	1,98
	Cv %	1,9	1,6	1,6	1,7	2,0	2,2

During the analysis of yield of varieties and lines a standard Krasnodarskaya-99 was recorded with yield 55.4 c/ha. After it was founded that there were 47 varieties and lines, which had higher yield than the standard.

Measure researches were carried out on biometric data as a plant height, the length of the last node of stable, the length of ear and the quantity of ears of the varieties and lines, which were researched in the features of the experiment. It is important when these dates are higher and due to this the varieties can have high yield.

When the plant height of the researching varieties is high it influences to get high yield. In drought weather condition the dwarf varieties has a low yield and quality of grain. In this case, in irrigated areas a selection the varieties with high plant height is more important feature.

According to the dates of research, a plant height of varieties was recorded as a between 71.7 and 106.7 cm. Two varieties were founded as a dwarf and their plant height was lower than 75 cm. There were 28 varieties which were recorded with plant height ranging between 76 and 90 cm. Plant height of 70 varieties and lines was medium, which was within the range of 91 and 106.7 cm. A standard variety Krasnodarskaya-99 had a plant weight with 95.7 cm.

When a connection between plant height and yield was researched r=0.06, accordingly with weight of 1000 grains r=0.29, with a weight of ear r=0.30 and after it was found out that there was a positive correlation between plant height and all of them. As is evident from the foregoing, the plant height had an impact on the high elements of yield.

As a lot of scientists confirmed, the longest of the last node of stable is one of the parameter which can perform the resistance to drought. On the research, the length of the last node of stable of varieties was observed and it was between 25.1 and 46.6 cm. There were 9 varieties and lines which had the length of the last node 30 cm and lower, accordingly this identified that 52 varieties and lines had between 30-35 cm; 32 varieties and lines had between 35-40cm; 7 varieties and lines had 40 cm and more than it.

The weight of 1000 grains was researched and according to the results it was 40.9 gr of the standard variety Krasnodarskaya-99 and when this indicator was observed on 50 varieties and lines it showed that these had higher weight of 1000 grains than standard. It was identified that there were 7 varieties and lines which had the weight of 1000 grains between 30.1-35.0 gr, accordingly it 34 varieties and lines had between 35.1-40.0 gr; 59 varieties and lines had 40.0 gr and more than it. The varieties and lines with a higher weight of 1000 grains were recommended for the using at hybridization as the donors.

When researched the content of protein in grain, it was found out 12.0-16.4%. If the content of protein in grain is higher than 14%, it is included in I class, accordingly when it is 11-13.9% to II class; lower than 10.9% to III or IV classes. It was researched that there were 63 varieties which the content of protein was higher than 14% and included in I class.

The characteristics of bread baking of wheat flour are usually eveluated with the amount and quality of gluten. When we are talking about the amount and quality of gluten, it means the hydrated gel rubber-like paste consists of especially water-insoluble protein, which after wheat dough is washed in water.

Depending on the amount of gluten a grain of wheat is divided into the next classes:

I class –amount of gluten is 28% and not lower than it, a gluten quality of grain is not lower than II group;

II class – amount of gluten is not lower than 25%;

II class – amount of gluten is not lower than 22%.

If the amount of gluten is lower than 22% and quality of gluten is lower than II group, in this case a grain of wheat is named as a "without class".

As the results of our research showed the gluten amount of grain of 48 varieties was higher than 28%.

Conclusion. When researched the valuable farm characteristics of varieties and lines it was founded out and selected as the donors by earliness 10, with medium plant height 70, the yield of 47 varieties was higher than standard, 59 varieties had the weight of 1000 grains of 59 varieties was higher than 40 gr, the protein amount of 63 varieties was higher

than 14%, the gluten amount of 48 varieties was higher than 28% and all of these were recommended for the using in targeted hybridization.

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