



RESULTS OF THE RESEARCH FOR DEVELOPING ULTRA EARLY RIPENING VARIETIES OF BREAD WHEAT ON RAINFED LANDS IN THE PROCESS OF GLOBAL CLIMATE CHANGE

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Article history:	Abstract:
Received: 20 th July 2022	The occurrence of severe heat and drought in the process of climate change around the world has a negative impact on wheat productivity in rainfed lands. This article presents the results of scientific research on the developing of wheat varieties highly resistant to heat and drought and ultra early ripening.
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INTRODUCTION. The consequences of the global warming of the world's climate are felt in the dry regions of the republic. The adverse effects of the climate have a negative impact on the food security of the population living in semi-arid (rainfed) regions.

The total land area of the Land Fund of the Republic of Uzbekistan for agriculture is 20761.6 thousand hectares (46.25%), of which irrigated land is 4210.1 thousand hectares (9.38%). The total area of agricultural crops in our republic is 3998.5 thousand hectares, of which 3238.8 thousand hectares are irrigated land and 759.7 thousand hectares are rainfed (dry land) arable land {2}.

Drylands in the territory of the republic are divided into 4 regions depending on their soil and weather conditions, and their location above sea level {1}.

Out of a total of 759,700 hectares of rainfed (dry land), 91,100 hectares belong to flat regions, 564,000 hectares to step-hill regions, and 104,600 hectares to foot hill and mountainous regions.

The productivity of grain and other crops in drylands is completely dependent on the amount of precipitation. It is known from the experiments that in the dry and hot weather years, the grain yield of wheat was 0,3-0,5 t/ha on average, and 1,1-1,3 t/ha in rainy and cool years.

MAIN PART. In recent years, global climate changes, abnormal heat and drought conditions have a strong impact on the productivity of grain and other crops.

Due to the improper distribution of precipitation on plant vegetation, the temperature rises sharply during the flowering and ripening period of grain crops in drylands, low, low-quality grain yield is obtained.

Selection of varieties of bread wheat that effectively use the natural fertility of the soil, organic and mineral fertilizers for planting in dry areas of the republic, and developing of varieties with high yield and high grain quality that are resistant to unfavorable conditions of the external environment will ensure an increase in grain yield by 0,8-1,0 tons per hectare on average. It also makes it possible to increase the protein content of grain by 2-3%, gluten and other quality indicators by 5-10%.

Based on the above, it is required to create ultra-early ripening biological spring varieties of bread wheat with a short growth period, including a short heading-ripening period.

Growth period is one of the main biological characteristics of wheat plant. The plant growth period is related to the heredity of the variety and is formed under the influence of weather conditions and agrotechnical measures {3}.

Growing season is an important factor in growing wheat under dry conditions. The length of the growing season of plants is important in climates with drought and heat in the summer season.

In the dry conditions of Uzbekistan, drought conditions occur during the early-ripening period of wheat varieties, and the drought resistance of the variety is known in this growth phase.

In Uzbekistan, there is a sharp drop in the grain yield of wheat in dry areas in the years of severe drought.

Drought resistance has been proven by researchers to be different in wheat varieties. In the conditions of drought, as a result of the change of the water regime in the wheat plant, the exchange of substances is disturbed, and

the yield is observed to be low due to the decrease in the number of spikes, the number of grains in the spike, and the weight of 1000 grains {3} .

In wheat, the grain filling-full ripening period should be completed before the onset of strong heat and drought in early varieties. However, in the years with sufficient rainfall and moderate weather conditions, it was found that the yield of early ripening varieties is lower compared to middle and late ripening varieties {4; 5}.

In Uzbekistan, the main direction of wheat selection in the creation of drought-resistant varieties is aimed at the creation of early ripening varieties.

RESULTS AND DISCUSSION. Scientific research in this regard is being carried out at the Scientific Research Institute of Rainfed Agriculture. For this purpose, in 2022, more than 3,000 varieties and samples of soft wheat varieties, lines, and hybrids were evaluated in the field experiments for their valuable economic characteristics and characteristics during the selection process.

Field experiments observed germination on February 10, 2022 due to insufficient soil moisture during the autumn months. According to the results of the research, the germination-ripening period of the standard Tezpishar variety was 114 days. It was also found that the germination-ripening phase of some new varieties that have been regionalized in recent years was later than that of Tezpishar. It was found that this indicator was 116-123 days in such varieties as Bakhmal-97, Ok bugday, Istiqlal-6, Sogdiana, Qizildon, Sanzar-6.

ICARDA nursery CWANA 18thSBWON-HT-2017/2018 #35-Var No-27710. KAUZ//ALTAR84/AOS3/KAUZ/3/CATBIRD-10/4/MILAN/DUCULA and #38-Var No-27847. In new lines such as ATILA*2/RAYON//CATBIRD-1 and local Erythrospermum-2003, the period of germination and ripening was 103-108 days, and it was found that the spike was 5-12 days earlier than the Tezpishar variety and fully ripened 6-11 days earlier. It was found that these new lines had low plant height and 1000 grain weight, and were superior to the Tezpishar variety in terms of yield (table).

Table.
Evaluation of bread wheat varieties, varieties and lines according to some valuable traits and characteristics (Gallaaral, 2022).

Variety, sample and lines	Germination, day, month	Heading, day, month	Ripening, day, month	Germination-ripening, days	Plant height, cm	1000 kernel weight, gramm	Yield, t/ha
Tezpishar st.	10.02.22.	03.05.22.	03.06.22.	114	78	37,5	0,77
Bakhmal-97	10.02.22	13.05.22.	12.06.22.	123	87	40,5	0,68
Oq bugday	10.02.22	07.05.22.	10.06.22.	121	85	45,6	0,85
Sanzar-6	10.02.22	10.05.22.	07.06.22.	118	53	37,4	0,55
Eritros-m-40	10.02.22	06.05.22	05.06.22.	116	84	38,4	0,90
Istiklol-6	10.02.22	12.05.22.	09.06.22.	120	88	41,6	0,85
Sogdiana	10.02.22	11.05.22.	09.06.22.	120	54	40,0	0,55
Nushkent	10.02.22	07.05.22.	04.06.22.	115	96	45,2	0,82
Kizildon	10.02.22	10.05.22.	05.06.22.	116	52	38,8	0,78
ПСИ-2020/6	10.02.22	10.05.22.	05.06.22.	116	82	37,6	1,05
КП-2020/38	10.02.22	14.05.22.	05.06.22	116	81	47,2	1,20
КП-2016/58	10.02.22	14.05.22.	08.06.22.	119	90	41,6	1,20
КСИ2020/20сп-2016/303	10.02.22	17.05.22.	12.06.22	123	85	41,2	1,35
Eritrospermum-2003	10.02.22	22.04.22.	23.05.22.	103	74	40,5	0,84
№35-Var No-27710	10.02.22	28.04.22.	28.05.22.	108	58	36,4	1,28
№38-Var No-27847	10.02.22	24.04.22.	23.05.22.	103	55	34,5	1,14

Explanation. #35-Var No-27710. KAUZ//ALTAR84/AOS3/KAUZ/3/CATBIRD-10/4/MILAN/DUCULA (CWANA 18thSBWON-HT-2017/2018); #38-Var No-27847. ATILA*2/DISTRICT//CATBIRD-1 (CWANA 18thSBWON-HT-2017/2018).

CONCLUSIONS. According to the results of the research, it was found that the rapid and early transition of the heading-ripening period of the wheat plant in dry lands has a positive effect on the increase in grain yield and quality. In this case, along with local variety samples, variety samples from nurseries belonging to the international organization ICARDA can be used as a initial materials for the creation of ultra-early ripening varieties and lines in bread wheat breeding.

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