

Growth, Development And Productivity Of Various Varieties Of Winter Wheat Under Extreme Conditions

Sadykov E.P1.,

Candidate of Agricultural Sciences,

Bekbanov B.A2.,

Candidate of Agricultural Sciences, employees of the Karakalpak Research Institute of Agriculture.

Matniyazova A.T.3.,

Master's student, Karakalpak Institute of Agriculture and Agricultural Technology

Polatov N.E4.

3rd year student, Karakalpak Institute of Agriculture and Agricultural Technology

Annotation. The study found that the differences in the yield of winter wheat varieties caused by weather conditions are much greater than by agrotechnical factors (fertilizer rates, timing and methods of sowing, variety, etc.). At the same time, weather conditions are understood as air temperature and humidity, photosynthetic active radiation and carbon dioxide concentration.

Keywords. Variety, Specimen, Plastic Variety, Frost Resistance, Agricultural Techniques, Soil Fertility, Continental Climate, Extreme Conditions, Saline Soil

The shortage of irrigation water, climate change, and large-scale salinization of land in recent years make it necessary to include new varieties of cereals in sowing structures. These varieties require less irrigation water and meet the requirements of the extreme conditions of the region.

Changing weather and climatic conditions bring to the fore such factors as the correct selection of varieties in relation to the agro-climatic zone, timely variety change and renewal varieties, well-organized seed production.

This region is characterized by a sharply continental climate, low water and soil salinity. Winter is harsh, mostly without snow cover. The peculiarity of the sharply continental climate is also that there is significant instability in the nature of the distribution and intensity of the manifestation of meteorological factors over the years and during the growing season. The duration of the cold period lasts up to four months, the minimum air temperature ranges from 35 to 380 C. The snow cover is unstable. The average annual precipitation is between 80 and 100 mm. The largest amount of precipitation falls in early spring and partly in winter. Therefore, in the northern regions of the republic, in some years with little (snow) precipitation or its absence, winter wheat crops are reduced to 30-40%. Therefore, the cultivation of raw material for further seed reproduction must be carried out in those areas where seed materials are harvested and propagated.

The greatest production effect from a variety can only be obtained when it is exposed to conditions that meet its requirements. The main criterion for determining the adaptability of a variety to local conditions is its normal growth and development, which provides stable high yields over the years. Therefore, a very important task is the correct placement of varieties in the ecological zones of the regions, taking into account the greatest adaptation of each variety to local conditions.

The object of the research was winter wheat varieties zoned in different years. The experiment is based on 4-fold repetition, in two tiers, the size of the plots is 50 m². Sowing was carried out in the optimal time of this region. Under plowing, an annual rate of phosphorus and potassium was applied. During spring regrowth, nitrogen was fed three times in each.60 kr

Records and observations of plant growth and development were carried out according to the methodology of state variety testing of grain and leguminous crops.

The height of plants is one of the main indicators of the degree of favorability of the year and the nature of change depending on environmental conditions and on the agricultural techniques used. As can be seen from Table 1, all the tested varieties turned out to be medium-sized. The lowest growth of the Tanya variety is 85.0 cm, all other varieties were in the range from 88.0 to .102,0 cm

At the onset of the phases of waxy ripeness, almost all the tested varieties were close to each other, only the varieties Polovchanka and Tanya were slightly inferior to the Sanzar-8 standard.

According to the date of full ripeness, all varieties were later than the standard. The varieties Dustlik and Andijan-1 were close to the standard for ripening, because in years with low relative humidity and high air temperature, full ripeness occurs earlier than usual, because in such years the intensity of grain drying is fast.

The decrease in yield is mainly due to the low productivity of the ear. The higher the grain weight of one ear at the optimal standing density, the higher the yield. Therefore, the grain weight of one ear is one of the main indicators of yield.

In all varieties, the productivity of the ear is high, it ranged from 1.32 to 1.50 g. (Table-1)

As can be seen from the data, the yield of the tested varieties ranged from 54 to 67 centners per hectare. Yield consists of two main elements: the number of plants per unit area and the productivity of one plant. Therefore, agricultural production focuses on the yield of the variety.

Table 1.

Main indicators of different varieties of winter wheat

No var.	Sort	Winter hardiness %	Plant height, cm	Ripeness		Mass		Yield cwt/ha
				Wax	buxom	1000 pcs. grains.g	Grains 1 ear, g	
1	Sanzar-8 st	88,0	102,0	291	303	40,0	1,32	54,0
2	Crumb	93,0	98,0	293	306	43,0	1,43	58,0
3	Polovchanka	94,0	101,0	294	312	41,0	1,42	59,0
4	Krasnodar-99	94,0	95,0	292	310	44,0	1,50	67,0
5	Andijan-1	90,0	98,0	291	305	38,0	1,36	54,5
6	Tanya	94,0	85,0	295	314	42,0	1,48	64,0
7	Rapture	93,0	88,0	292	310	42,0	1,45	62,0
8	Dustik	89,0	96,0	293	304	38,5	1,38	54,6

As the data shows, different varieties of winter wheat require different conditions for the formation of their high winter hardiness and productivity. The ability of plants to develop high frost resistance depends primarily on the biological characteristics of the variety and the growing conditions of plants in the autumn growing season.

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