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DRY MASS AMOUNT OF WHEAT AT DIFFERENT DEVELOPMENT PHASES

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Abstract. In the article The results of the analysis of the transition of plant development stages, growth intensity and productivity depend on the living conditions.

Key words: plant, dry mass, biomass, yield, development, air temperature, relative humidity.

Abstract. V state privedeny resultaty analyza perekhoda stadi razvitiya rasteniya, intensinosti rosta i productivity v zavisimosti ot conditionulii obitaniya.

Key words: plant, dry mass, biomass, productivity, development, temperature of air, relative humidity of air.

Abstract. In the article, the results of the analysis of the transition of the development stages of plants, growth intensity and productivity depend on the living conditions.

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The value of the biomass produced at a certain period of plant development is an important integral indicator of the efficiency of the production process. As a result of selection, the final value of the grain yield indicator does not change significantly, and the increase in grain yield is achieved mainly due to the more efficient use of assimilation for replenishment [1]. The passage of plant development stages, growth intensity and productivity depend to a certain extent on living conditions. Plants develop best with optimal provision of all necessary life processes and high-quality implementation of all agrotechnical measures [2]. The occurrence of drought in the soil with a decrease in moisture content leads to high air temperatures during the formation of spikes in grain plants, damage to flower buds, termination of spike formation and their drying out. As a result, the number of grainless spikes increases. For many plants, high air temperatures are especially dangerous during their flowering period, leading to flower shedding, node failure, and sterility. The process of dry mass accumulation continues until the plant belt completely exhausts the chlorophyll grains in its belt and leaves. [3]. The plant begins to grow strongly from the moment of flowering. Therefore, this period in the life of plants is considered the most responsible, that is, the “critical period”, when it is sufficiently supplied with water and nutrients. Wheat yield was, to a certain extent, directly dependent on physiological conditions during the tillering period, and on the level of nutrient and moisture supply [4].

Table 1

Effect of cultivation of winter soft wheat cultivars in different soil-climatic regions on biological dry mass accumulation rate

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No.	Research take to go territory	Studied varieties	Development in phases , gr /m2				
			accumulation	tube	earing	flowering	wax cooking
1	Zone I (desert) Profession district	Jaxart	112.1	246.9	870.8	973.1	1093.3
2		Krasnodarskaya-99	103.4	227.5	842.0	961.2	1048.3
3		Peasant	107.4	242.9	863.7	991.5	1079.0
4		Gozgan	104.1	230.3	838.5	961.3	1047.3
5		Turkestan	113.2	248.7	889.1	998.4	1116.1
6	Region II (semi-desert) Opposite district	Jaxart	130.8	308.5	1053.7	1179.2	1320.2
7		Krasnodarskaya-99	116.5	271.0	982.0	1089.6	1230.5
8		Peasant	120.5	288.0	1006.8	1123.5	1261.8
9		Gozgan	121.9	296.4	1045.3	1162.1	1307.9
10		Turkestan	124.3	298.9	1047.8	1156.9	1308.7
11	Region III (mountain) before) Shahrisabz	Jaxart	139.3	325.8	1087.2	1221.9	1363.2
12		Krasnodarskaya-99	116.1	281.2	982.9	1094.1	1233.7
13		Peasant	134.8	307.0	1057.1	1188.1	1335.0
14		Gozgan	126.1	301.5	1050.4	1175.8	1311.5
15		Turkestan	133.5	319.7	1077.8	1216.1	1367.2

Among the varieties studied in our study, the average yield of the Yaksart variety in the Kasbi district, located in the desert region, during the accumulation phase was 112.1 g/m ^{2}. ha, 130.8 g/m ^{2} in the Karshi district, and 130.8 g/m ^{2} in the Shakhrisabz region , which can be explained by the fact that the wintering efficiency of plants in the desert region was lower than in other regions (see Table 3.4.1).

The highest dry mass in the tuberization phase of the Karasnodarskaya-99 variety was observed in the foothills, averaging 281.2 g/m ^{2} · It produced 10.2 g/m ^{2} more dry mass in the Karshi district and 53.7 g/m ^{2} more dry mass in the Kasbi district.

that the dry mass of winter wheat reached the wax ripening phase, and the average dry mass obtained from 1m ^{2} in the desert regions was 1076.8 grams, in the semi-arid regions it was 1285.8 grams, and in the foothills it was 1322.1 grams. This proves that the soil-climate region of the foothills is favorable for the accumulation of plant biomass.

Table 2

Effect of cultivation of winter soft wheat cultivars in different soil-climatic regions on biological dry mass accumulation rate

No.	Research take to go territory	Studied varieties	Development in phases , ts/ha				
			ball to be	tube	earing	flower carcass	wax cooking
1	Zone I (desert) Profession	Jaxart	11.2	24.7	87.1	97.3	109.3
2		Krasnodarskaya-99	10.3	22.8	84.2	96.1	104.8
3		Peasant	10.7	24.3	86.4	99.2	107.9

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4	district	Gozgan	10.4	23.0	83.9	96.1	104.7
5		Turkestan	11.3	24.9	88.9	99.8	111.6
6	Region II (semi-desert) Opposite district	Jaxart	13.1	30.9	105.4	117.9	132.0
7		Krasnodarskaya-99	11.7	27.1	98.2	109.0	123.1
8		Peasant	12.0	28.8	100.7	112.4	126.2
9		Gozgan	12.2	29.6	104.5	116.2	130.8
10		Turkestan	12.4	29.9	104.8	115.7	130.9
11	Region III (mountain) before) Shahrisabz	Jaxart	13.9	32.6	108.7	122.2	136.3
12		Krasnodarskaya-99	11.6	28.1	98.3	109.4	123.4
13		Peasant	13.5	30.7	105.7	118.8	133.5
14		Gozgan	12.6	30.2	105.0	117.6	131.1
15		Turkestan	13.4	32.0	107.8	121.6	136.7

According to the results of the research, the amount of dry mass per 1 hectare in Kasbi district during the accumulation period is 10.8 tons. ni, 23.9 ts in the tube phase. ni, 86.1 ts in the spike phase. ni, 97.7 ts in the flowering phase. ni, 107.7 ts in the wax ripening phase. , and as the plant developed, the amount of dry mass increased (see Table 2).

The increase in dry mass after the wax ripening phase almost stops. This is due to the fact that the plant, which has entered the grain ripening phase, stops developing. In short, drought in the atmosphere, combined with high temperatures and intense sunlight, stops the growth of the stem and leaves of the plant. Taking into account hereditary characteristics when selecting varieties for each region allows you to maximize the yield and technological quality indicators. It is effective to plant Yaksart and Turkestan for the desert area of Kasbi district, Ghozgan and Yaksart for the sub-desert soil-climatic conditions of Karshi district, and Krasnodarskaya-99, Selyanka and Ghozgan for the Shakhrisabz district with sub-mountain soil-climatic conditions and use them as a starting source for creating new varieties.

A decrease in productivity occurs due to the delay in harvesting operations, drying of grains in the ear, mechanical losses and spillage, and damage to the grain. When analyzing the cross-section of the varieties, it was found that the locally created Gozgon variety has a high yield in the middle-Karshi district of the province due to its high resistance to heat and drought, and due to its intensity, while the Krasnodarskaya-99 variety has low yield due to its lack of resistance to heat and drought.

In conclusion, the arrival of spring season in Kashkadarya region (rainfall is similar to long-term average indicators), sufficient relative humidity of the air and the formation of crop structure in the flowering-grain filling season is the reason for a high yield. A decrease in productivity occurs due to the delay in harvesting operations, drying of grains in the ear, mechanical losses and spillage, and damage to the grain. In the mountainous regions of the Kashkadarya region, the varieties belonging to the Krasnodar selection can give a high yield, and in the middle and desert regions, a higher yield can be grown than the local varieties.

List of used literature:

1. Azimova, M., Ishankulova, G., & Begimkulova, S. (2019). The effect of sowing date, sowing rate and fertilizer rates on field productivity of soft winter wheat varieties. AGRO

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SCIENCE-AGRILLIZATION AND WATER HYDROLOGY OF UZBEKISTAN, (3), 16-17.
2. Rano, I., & Mokhira, B. (2021). Influence of Sowing Terms and Feeding Norms on Technological Quality Indicators of Wheat Grain. Annals of the Romanian Society for Cell Biology, 25(6), 2210-2217.
3. Ishankulova, G. N. (2021). IZMENENIE UROJAYNOSTI ZERNA OZIMYX SORTOV MYaGKOY PShENItsY V ZAVISIMOSTI OT POCHVENNO-KLIMATIChESKIH USLOVIY REGIONOV I SROKOV UBORKI UROJAYa. SOVIET NAUCHNYX REDAKTOROV, 3(66), 202161.
4. Irnazarov, Sh. I., Irnazarova, N. I., & Ishmukhamedova, R. Ch. (2015). DEYSTVIE I POSLEDEYSTVIE MINERALNYX UDOBRENIY NA UROJAYNOST OZIMOY PShENItsY I POVTORNYX POSEVOV. Sovremennye tendentsii razvitiya nauki i tekhnologiiy, (6-3), 127-129.