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GROWTH RHYTHM OF INTRASPECIFIC FORMS OF WHEAT

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Annotation

In this article, in order to increase the gross grain yield in the Republic of Uzbekistan, which has different agro-ecological zones, a wide range of varieties that differ in physiological, genetic, biological and economic characteristics, most suitable for cultivation in certain soil-climatic zones There was a talk about the need to create. It is almost impossible to create by selecting such varieties. In this regard, it is important to choose hybridization and promising directions, which are the most effective ways to obtain varieties that meet the requirements of modern plant growing.

The data obtained on the study of the growth rhythm of intraspecific forms of wheat showed that the duration of the period from germination to emergence into the tube varies less. This is explained by the dominance of this trait in the direction of the accelerated development of plant forms. However, at late sowing dates, the linear growth of the aboveground part of the plants began after the emergence of seedlings. therefore, the duration of the period from germination to the first measurement averaged 22 days[1]. But over time, the speed of wheat plants in all variants slows down slightly, but the highest growth rates are characterized by forms F-1 and F-2. It should be noted that the period of growth and development of wheat from booting to heading differ little from each other and the difference varies within forty days. Thus, the results of the studies carried out show that the rate of growth processes of intraspecific forms of soft spring wheat varies depending on the genotype and environmental conditions during the growing season of plants. The results of the studies showed that both the parental samples and the studied forms of wheat are characterized by instability of growth processes depending on the growing conditions, which is explained by the significant dependence of genotypes on growing conditions [4].

Keywords: Grain, wheat, harvest, productivity, growth, development, economic harvest.

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Table 1.1. Growth rate and duration of the booting period - heading of wheat forms

Forms wheat	Plant growth rate, cm / day				Duration period from booting before earing, days	
	from tillering to bobbing		from trumpeting before flowering			
	2020г.	2021г.	2020г.	2021г.	2020г.	2021г.
Control	1.42±0.04	1.56±0.05	1.38±0.04	1.42±0.05	38.3±0.09	39.1±1.07
Ф-1	1.84±0.06	1.74±0.06	1.46±0.04	1.66±0.06	39.9±0.92	40.1±0.97
Ф-2	1.65±0.05	1.61±0.05	1.44±0.04	1.60±0.05	38.8±0.91	40.2±0.97
Ф-3	1.38±0.04	1.33±0.06	1.42±0.05	1.53±0.06	39.2±1.16	39.4±0.94
Ф-4	1.40±0.05	1.32±0.04	1.41±0.05	1.11±0.04	38.5±0.92	40.3±0.97

Note: the obtained values significantly differ from the indicators of the control variant at P <0.05

According to the average group data on the growth rate of plants, the average value of the P-1 forms is lower than that of the parental forms, which indicates the dominance of the parent, which is characterized by a lower activity of daily growth processes[2]. The average group values of the growth rate of the F-2 forms are close to the average parental forms. To reveal the nature of the inheritance of the growth rate during the period of emergence - earing of forms, we carried out a comparative analysis of the data on the growth curves of plants of parental forms and forms.

So, for example, if in 2020. the growth of the early maturing F-1 form stopped on May 10, then in 2021 it was stopped on May 5. In contrast to the early maturing F-1 form, the late-maturing F-2 in both years of the study did not show any differences in the phase of full ripeness. Among the studied forms, the tall form F-1 of 2021. differed in the reaction of the growth rate to the growing conditions, the growth processes proceeded much more actively than in 2020. The observed differences in the growth rhythm in this form testify to the manifestation of intermediate inheritance before the onset of the parental tube emergence phase and the wheat forms between which in 2021 there were no significant differences. At the same time, at the beginning of the plant development phase, the forms were characterized by less active growth than the parental forms, i.e. pronounced depression of growth processes was manifested[3].

Thus, the results of the studies carried out show that the rate of growth processes of intraspecific forms of soft spring wheat varies depending on the genotype and environmental conditions during the growing season of plants. Summarizing the results obtained, we can conclude that forms of wheat F-3 are characterized by a lower growth rate than forms of wheat F-1, which is associated with inhibition of growth processes caused by dominant genes. To increase the gross grain harvest in the Republic of Uzbekistan with its various agroecological zones, it is necessary to create

a wide range of varieties, differing in physiological, genetic, biological and economic characteristics, most adapted to cultivation in certain soil and climatic zones. The creation of such varieties by selection is almost impossible. In this regard, hybridization and selection of promising lines, which are the most effective methods for obtaining varieties that meet the requirements of modern plant growing, are of great importance. The experience of world wheat breeding shows that the success of hybridization depends on solving the problem of involving the gene pool of the Triticum genus in practical breeding. An important role in this regard is played by the crossing of local ancient varietal populations of common wheat in Central Asia, which are donors of morphological traits and cross well with various wheat varieties. One of these traits, characteristic of local varietal populations of spring bread wheat, is the leaf area index (LPI) [1].

The planting leaf surface index determines the activity of absorbing sunlight as the main factor on which the size of the biological yield depends. Taking this into account, physiological studies of the leaf surface index of the studied intraspecific wheat forms, well adapted to local conditions, were carried out. The results of three-year experiments have shown that the sowing density has a significant effect on the size of the leaf surface of wheat forms of plants and their significance in the formation of the yield. So, for example, sowing of the most productive forms of the combination K-55563 x K-24596 (F-1) developed a leaf surface with an index. At the same time, the maximum grain yield for combinations of the K-55563 x K-24596 (F-1) and K-55571 x K-24596 (F-2) forms was obtained with a leaf surface index of 2.63 and 2.89. A further increase in the leaf area index under the influence of higher seeding rates was accompanied by a decrease in grain yield. It was found that the time of sowing also affects the size and dynamics of the formation of the leaf surface of plant forms. So, for example, in the intraspecific forms of the combination K-55563 x K-24596, when sown on October 6 and November 5, a different leaf surface developed. With the optimal sowing time (November 5), already on the 60th day of the spring growing season, it was equal to 2.5-3.1 m2 / m2, with a later sowing (November 20), the leaves grew slowly and the leaf surface index reached its maximum values by 30 days later than in the first option. In the studied forms, different dynamics of the formation of the leaf surface affected the grain yield at a timely sowing time. In addition, research has established a significant influence on the formation of the leaf surface of plant forms of climatic conditions[2]. For example, K-55563 x K-55571 in 2020. the average leaf area index was 2.47 m2 / m2 with a grain yield of 540 g / m2, then in 2021 with a grain yield of 505 g / m2 it reached 2.70 m2 / m2. In 2020 - 2021, the dynamics of the leaf surface index in the studied forms approached the model values (Fig. 3.8, A, B).

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Under favorable conditions in terms of temperature and air humidity, the assimilating leaf surface increased rapidly, and at the end of May, the leaf surface index of the studied plants reached their maximum values, which remained throughout the month. 2021 - 2003 Due to the low air temperature and low amount of precipitation, the growth of the leaf surface of plants slowed down, as a result of which the leaf surface index became optimal only at the end of May - beginning of June, i.e. 20 - 30 days later. Under the influence of late precipitation in the second half of the growing season, accelerated development of the leaf surface was noted in all forms of wheat, which led to an increase in this trait. It was revealed that weather conditions during the growing season of plants significantly affect the formation of the leaf apparatus and the formation of dry matter. Our studies have shown the dependence of the formation of the leaf surface index on the meteorological conditions of the year.

Table 1.2. Leaf surface index and productivity indicators of intraspecific forms of wheat

Forms millet Itsy	Productivity indicators				
	yield, kg / m2		dry matter gain, g / m2 per day	ILP	KXE
	biological	economic			
2020					
Control	1.78 ± 0.03	0.70 ± 0.01	21.4 ± 0.65	2.70 ± 0.07	0,41
F-1	1.84 ± 0.06	0.80 ± 0.02	27.54 ± 0.72	3.14 ± 0.09	0.43
F-2	1.74 ± 0.05	0.76 ± 0.02	24.48 ± 0.71	2.47 ± 0.06	0.44
F-3	1.64 ± 0.04	0.75 ± 0.02	20.68 ± 0.61	2.68 ± 0.07	0.43
F-4	1.70 ± 0.05	0.58 ± 0.01	21.04 ± 0.63	2.83 ± 0.08	0.35
2021					
Control	1.69 ± 0.05	0.54 ± 0.01	13.74 ± 0.35	2.68 ± 0.06	0.38
F-1	1.90 ± 0.06	0.83 ± 0.04	28.35 ± 0.81	3.20 ± 0.09	0.43
F-2	1.65 ± 0.04	0.68 ± 0.03	20.04 ± 0.60	2.70 ± 0.07	0.41
F-3	1.68 ± 0.05	0.70 ± 0.03	14.42 ± 0.41	2.65 ± 0.06	0.42
F-4	1.36 ± 0.03	0.72 ± 0.03	14.84 ± 0.41	2.71 ± 0.07	0.52
2022					
Control	1.68 ± 0.04	0.48 ±0.01	13.83 ± 0.38	2.65 ± 0.06	0.32
F-1	1.92 ± 0.06	0.78 ± 0.02	26.58 ± 0.81	3.10 ± 0.09	0.41
F-2	1.58 ± 0.04	0.62 ± 0.02	19.42 ± 0.59	2.74 ± 0.07	0.39
F-3	1.65 ± 0.05	0.62 ± 0.02	14.32 ± 0.41	2.94 ± 0.08	0.38
F-4	1.48 ± 0.04	0.64 ± 0.02	14.80 ± 0.43	2.80 ± 0.08	0.43

Note: the obtained values significantly differ from the indicators of the control variant at $P < 0.05$

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Moreover, the observed differences are clearly noticeable at the beginning of the spring-summer growing season, when the fluctuations in the amount of dry matter were more significant in the second half of the growing season.

The results of the studies carried out to study the dependence of plant productivity on the leaf surface index of plants showed that the high biological productivity of forms is determined not only by high leaf surface indicators, but also by the maximum values of the net productivity of photosynthesis and the increase in dry matter.

Table 1.3. Assimilating surface of leaves of the main and lateral stems of wheat forms%

Combination crosses	Full bloom			Milk ripeness			Wax ripeness		
	ГС	БС$_1$	БС$_2$	ГС	БС$_1$	БС$_2$	ГС	БС$_1$	БС$_2$
Control	60,4 ±1.38	27,1 ±0.60	8,4 ±0.2	54,7 ±1.35	26,1 ±0.60	6,1 ±0.18	65,3 ±1.40	14,3 ±0.37	3.3 ±0.08
F-1	72,1 ±1.80	31,1 ±0.80	8,9 ±0.2	58,3 ±1.40	29,2 ±0.76	8,1 ±0.28	76,8 ±1.98	17,9 ±0.40	3,4 ±0.08
F-2	64,4 ±1.60	30,5 ±0.78	8,5 ±0.2	56,8 ±1.37	26,5 ±0.60	7,7 ±0.1	75,3 ±1.98	19,1 ±0.76	3,2 ±0.06
F-3	60,5 ±1.80	26,3 ±0.62	8,1 ±0.2	54,1 ±2.19	15,4 ±0.38	6,3 ±0.18	66,2 ±1.40	14,3 ±0.85	3,1 ±0.04
F-4	61,7 ±1.38	27,4 ±0.62	8,1 ±0.2	55,2 ±1.80	24,3 ±0.60	7,3 ±2.19	68,1 ±1.42	15,7 ±0.38	3,2 ±0.06

Note: the obtained values significantly differ from the indicators of the control variant at P <0.05

GS - main stem; BS1 - the first lateral stem;

BS2 is the second lateral stem.

So, for example, in 2020, the forms of the combination K-55571 x K-24596 the highest grain yield in comparison with the control and the combination K-55563 x K-24596 was obtained at low values of leaf area, but at high rates of net productivity of photosynthesis, dry matter increase and coefficient of economic efficiency. The data presented indicate that the studied forms of wheat realize their productivity potential due not only to the growth of the assimilating leaf surface, but also to its vigorous activity and efficient transport of assimilation products in the ear. As a result of the rapid accumulation of dry matter in the early spring growing season (April), a sufficient amount of plastic substances was formed to differentiate the structure of the future ear.

The List of Used Literature

1. Jabborova, D., D. Qodirova, and D. Egamberdieva. "Improvement of seedling establishment of soybean using IAA and IAA producing bacteria under saline conditions." Soil Water J 2.2 (2013): 531-539.
2. Dilfuza Jabborova, Kannepalli Annapurna, Mohina Fayzullaeva, Khurshid Sulaymonov, Dilbar Kadirova, Zafarjon Jabbarov and R. Z. Sayyed (2020). Isolation and characterization of endophytic bacteria from ginger (Zingiber officinale). Ann. Phytomed., 9(1):116-121.
3. Саломов, А. А., & Хуррамов, Р. С. (2019). ТЕОРЕТИЧЕСКИЕ АСПЕКТЫ РАЗВИТИЯ ЛОГИЧЕСКОГО МЫШЛЕНИЯ НА УРОКАХ МАТЕМАТИКИ В НАЧАЛЬНОЙ ШКОЛЕ. Интернаука, (41-1), 12-14.
4. Yoqubov, S., & Zokirov, J. (2017). OQUVCHILARNI SAVOL BERISHGA ORGATISH USULLARI. In НАУЧНЫЙ ПОИСК В СОВРЕМЕННОМ МИРЕ (pp. 110-112).
5. Yakibova Dilorom Sharifovna. Methods for enhancing the creative thinking of primary schoolchildren. Herakd pedagogiki. Nauka i Praktyka (wydanie specjalne). ISSN: 2450-8160, 2021, 247-256-pages.