International Journal of Multidiscipline

TLEP – International Journal of Multidiscipline
(Technology, Language, Education, and Psychology)
ISSN: 2488-9342 (Print) | 2488-9334 (Online)

Open Access | Peer-Reviewed | Monthly Publication | Impact factor: 8.497 / 2025

Influence Of Sowing Rates Of Oil Flax Varieties On The Biometric Indicators Of The Plant

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Abstract
This article presents a significant effect of planting standards on the growth of the stem and leaf of oilseed varieties, and the planting standard is 4.0 mln. 6.0 million per piece, increasing to grain, plants have many leaves and grow tall, on the contrary, side branches decrease. It was found that the stem of the spring control variety was lower compared to Biryuza, Fliz, Danik and RFN varieties. In the Buryuza variety, compared to the control Bahorikor variety, the height of the plant was 2.3, 2.4, 3.7 cm higher according to planting standards, but it was found that it produced 3.6, 5.4, 0.7 fewer leaves.
Keywords: flax, norm, seed, bud, flower, plant height, oil crops, development, growth, leaf.

INTRODUCTION. Currently, in the practice of leading countries in the world, research is being conducted to develop and implement a number of modern methods of planting dates, norms and agrotechnical measures for the cultivation of oilseed flax, based on soil and climatic conditions. In this regard, special attention is paid to research on the correct selection of oilseed flax varieties with high yield qualities and suitable for processing, on determining planting dates, norms and resource-saving agrotechnologies used in their cultivation, based on the soil and climatic conditions of each region. In the republic, the data on the cultivation of oilseed crops in all categories for the 2024 harvest indicate that oilseed flax will be planted on 17,086 hectares of arable land. Therefore, scientific research is urgently needed to determine the optimal seed planting rates for oilseed flax in order to provide the population with edible oil.

LITERATURE REVIEW. An important source of vegetable oil can be an oilseed such as flax. This crop successfully combines the high potential yield of seeds, the presence of a high content of fat and protein, and the optimal balance of amino acids. Flaxseed oil contains the lowest amount of saturated fatty acids harmful to the human diet compared to other oils. Another unique feature of flaxseed is that it contains a lot of linolenic acid, which, when ingested by the human body, helps to eliminate cholesterol, maintains protein and fat metabolism at the proper level, prevents some heart diseases, stabilizes blood pressure, eliminates spasms of blood vessels, prevents blood clotting, and activates the immune system. In addition, together with fatty acids, it has a positive effect on brain function and vision [42; 17-24-p, 32; 71-73-p.].

Large seeds usually contain a high amount of oil. To be suitable for mechanization, it is advisable to create varieties with high-set pods and non-shedding seeds [64; 87-p.]. Flaxseed processing products (seed meal and meal) are high-energy and protein components of the diet of farm animals and poultry. In particular, 100 kg of seed meal contains up to 115 feed units and 28.5 kg of digestible protein, and 100 kg of meal contains 10 feed units and 28.9 kg of digestible protein [83; 248-255-p.].

Academician I.I.Sinyagin [1975] concluded in his studies that as a result of an increase or decrease in the feeding surface, changes

in the morphological characteristics of plants are very pronounced. An increase in the thickness of productive plants usually leads to an increase in their height. This growth continues up to a certain limit, but when the planting density increases significantly, the growth rate of plants slows down. Changes in plant height resulting from a change in the feeding surface depend mainly on light conditions. The thickness of the stem, i.e., its resistance to lodging, increases as the feeding surface expands. Other studies have shown that high yields can be obtained from fast-growing varieties even at relatively low planting rates. On the contrary, high yields can be obtained from weakly growing varieties even when planted densely [21; p. 384, 127; pp. 922-937].

Materials and Methods. Field experiments to study the effect of seeding rates on the growth, development, yield and quality indicators of oilseed flax varieties were conducted in 2023 under the conditions of typical irrigated gray soils of the Tashkent region. The object of the study was the oilseed flax variety Bahorikor, included in the State Register for arable lands, and the Russian varieties Biryuza, Fliz, Danik and RFN, which were sown at three different seeding rates of 4.0, 5.0, 6.0 million seeds/ha and were comparatively studied. In the experiment, oilseed flax varieties were planted as a repeated crop, consisting of 15 options. 60 plots, 12-row beds, 15 cm row spacing, 10 m length.

Results and Discussion. The spring was found to be larger and taller than the control variety and to be slightly sparser on the main and lateral branches. It was found that the leaves of the spring control variety are densely arranged on the main and side branches, and the leaves are smaller and relatively shorter.

In the first option, in which 4.0 million pieces/ha of the control variety Baharikor were planted in the rooting phase, the height of the plant was 11.5 cm, and the number of leaves on it was 28.8 pieces. In the second option, in which the planting rate was increased to 5.0 million pieces, the height of the plant was 0.8 cm higher than in the first option, and the number of leaves was 5.4 more. If the planting rate was increased to 6.0 million, the plant stem grew even higher by 14.6 cm and the number of leaves was 38.6.

In the first variant, in which 4.0 mln. pieces/ha of the Buryuza variety were planted, the height of the plant was 30.6 cm, and the number of leaves on it was 46.7 pieces. In the second option, in which the planting rate was increased to 5.0 million, the height of the plant was 1.0 cm higher than in the first option, and the number of leaves was 3.8 more. If the planting rate was increased to 6.0 million, the plant stem grew even higher by 32.8 cm and the number of leaves was 56.9.

In the option of sowing 4 mln. pieces/ha of the Fliz variety, the height of the plant is 30.2 cm and the number of leaves is 44.7 pieces. The planting rate is 5 and 6 mln. Increasing the seed rate to 31.4 and 32.0 cm led to an increase in plant height, i.e. 31.4 and 32.0 cm. The number of leaves also increased by 46.3 and 54.6 units.

In the Danik and RFN varieties, the pattern observed in the above varieties was repeated according to the sowing rates, and in the variant where 6 million seeds were sown per hectare/ha, the plant height and the number of leaves were also observed.

In the combing phase, the plant height of the Bahorikor (st) variety was close to each other according to the sowing rates, 27.5, 29.5 and 31.5 cm, and the number of leaves was almost the same as the number of leaves of the Biryuza variety from the varieties studied in the experiment, 46.4, 50.5 and 56.6 units. It can be seen that when the planting rate per hectare was increased to 6 million units, the number of leaves was formed more.

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It was observed that the flowering phase is the phase with the highest number of leaves, and it was determined that the stem height of the Fliz variety was 54.6-58.5 cm and the number of leaves in it was 70.8, 76.1, 96.0 units, the stem height of the Danik variety was 54.9-58.2 cm and the number of leaves in it was 69.2, 74.3, 86.8 units, the stem height of the Biryuza variety was 55.4-59.4 cm and the number of leaves in it was 76.0, 83.5, 98.2 units, and the stem height of the RFN variety was 57.1-57.8 cm and the number of leaves in it was 68.5, 71.0, 79.7 units.

In the control Baharikor variety, the height of the stem is 53.7-56.8 cm, and the number of leaves in it is 79.6, 88.9, 98.9 pieces. In the Buryuza variety, compared to the control Bahorikor variety, the height of the plant was 1.7, 1.5, 2.6 cm higher according to planting standards, but it was found that it produced 3.6, 5.4, 0.7 fewer leaves.

In Fliz, Danik and RFN varieties, the height of the plant is higher than the control variety, but the number of leaves is less. In the Fliz variety, the plant height is 0.9, 0.6, 1.3 cm higher according to the planting standards, but the leaves are 8.8, 12.8, 2.9 less in the Danik variety, according to the planting standards. It was 1.2, 1.2, 1.4 cm high, but 10.4, 14.6, 12.1 leaves less, and in the RFN variety, the height of the plant was 3.4, 0.6, 1.0 cm higher according to planting standards, but it produced 11.1, 17.9, 19.2 leaves less.

Table 1. Biometric measurements on developmental phases of replanted oil flax cultivars

Options	Varieties	Sowing rate, mln.pcs/ha	Plant stem height and number of leaves by phase, cm/piece									
			Fir formation phase		budding		flowering		Blue ripening		Eraly yellow ripening	
			height	leaf	height	leaf	height	leaf	height	leaf	height	leaf
1	Bahorikor (st)	4.0	11.5	28.8	27.5	46.4	53.7	79.6	55.2	63.3	57.2	34.6
2		5.0	12.3	34.2	29.7	50.5	54.2	88.9	56.1	67.1	58.4	41.8
3		6.0	14.6	38.6	31.5	56.6	56.8	98.9	58.1	79.4	60.0	49.1
4	Fliz	4.0	12.0	27.6	30.2	44.7	54.6	70.8	56.8	53.4	58.8	32.5
5		5.0	13.1	29.9	31.4	46.3	54.8	76.1	57.9	60.5	59.7	39.4
6		6.0	15.3	36.3	32.0	54.6	58.5	96.0	61.0	72.6	62.5	41.8
7	Danik	4.0	11.8	26.3	29.2	43.1	54.9	69.2	56.2	50.3	58.4	30.2
8		5.0	12.5	30.2	30.8	45.5	55.4	74.3	57.3	60.3	59.6	34.2
9		6.0	14.7	35.0	31.6	53.2	58.2	86.8	60.7	69.6	62.4	36.5
10	Biryuza	4.0	12.5	28.7	30.6	46.7	55.4	76.0	57.5	56.8	59.5	34.5
11		5.0	13.2	33.5	31.6	50.5	55.7	83.5	58.9	67.5	60.8	41.0
12		6.0	15.7	38.5	32.8	56.9	59.4	98.2	61.6	76.4	63.7	48.3
13	RFN	4.0	11.7	24.2	28.0	44.0	57.1	68.5	56.0	45.2	57.4	27.1
14		5.0	12.4	29.3	29.9	46.8	54.6	71.0	56.7	54.7	58.6	30.2
15		6.0	14.7	33.4	30.8	49.9	57.8	79.7	59.8	58.8	61.2	35.7

The height of the plant was 2.3, 2.8, 3.5 cm higher than the control Bahorikor variety in the Buryuza variety, but it was found that it produced 6.5, 0.4, 3.0 fewer leaves. In the Fliz variety, the height of the plant was 0.7, 1.0, 0.9 cm lower, 3.4, 7.0, 7.2 less leaves were formed, in the Danik variety, the plant

height was 1.0, 1.2, 2.6 cm higher than the planting standards, but 13.0, 6.8, 9.8 less leaves, and the height of the plant in the RFN variety increased by 0.8, 0.6, 1.7 cm according to planting standards, but produced 18.1, 12.4, 20.6 fewer leaves.

In the early yellow ripening phase, the plant grew a little, but most of the leaves were shed. At the end of the growing season, the stems of Biryuza and Fliz varieties are higher than those of the experimental varieties, according to the planting rates, the Biryuza variety is 59.5, 60.8, 63.7 cm higher than the Fliz variety by 0.7, 1.1, 1.2 cm, and the number of leaves that are still shedding is 2.0, 1.6, 6.5 more. it happened. In terms of stem height, Danik variety was slightly lower than Fliz variety, 0.4, 0.1, 0.1 cm lower, and the number of leaves was 2.3, 5.2, 5.3 less. RFN cultivar was found to be inferior to all experimental cultivars but superior to the control cultivar.

Conclusion. Based on the above data, it can be concluded that in oilseed varieties, the height of the plant grows high in all the experimentally studied varieties in the case of 6.0 million seeds/ha, the leaves begin to fall after the blue ripening phase, and only the stems and pods remain in the full ripening phase. The number of leaves was determined to be 4.5-19.0% higher in the flowering phase of the control spring variety compared to foreign varieties.

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