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EFFECT OF SOWING NORMS ON YIELD INDICATORS OF VARIETIES OF OILSEED FLAX

Abstract: The article provides data that the effect of the sowing rate of oilseed flax on the yield of local Bahorikor and Russian Fliz, RFN varieties in the conditions of typical irrigated sierozem soils of Tashkent region, weight and yield of 1000 seeds was studied experimentally. In the variant where the sowing rate was 4.0 million units / ha, the seed yield was high and the minimum yield was obtained from the variant with the increased sowing rate per hectare (6 million units / ha). In the experiment, It has shown that the creation of a favorable environment for the cultivation of Fliz in irrigated lands of Tashkent region.

Key words: oilseed flax, variety, variant, sowing rate, yield, elements, pod, seed, branching.

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Introduction

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Oily flax is a valuable crop that can be used in many ways. The world's sown area of oilseed flax is 2.5-3.2 million hectares annually, the gross yield is 2.0-2.7 million tons. The main countries that grow oilseed flax are India, China, Canada and the United States. About 20 percent of the crops in the CIS countries are oily flax, and in recent years, due to its high content of linoleic acid in oil, the consumption of flaxseed oil has been increasing worldwide due to its medicinal properties.

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On efficient use of available land, rational allocation of agricultural crops for the 2020 harvest and forecast volumes of production" No. 1025 of December 20, 2019 Resolution No. 121 of March 4 for the harvest planned and planted oilseed flax on 5087 thousand hectares of arable land [1,2].

The degree to which the problem has been studied. Bakhmal-2 is the variety of oilseed flax

grown in Uzbekistan. It is grown mainly on dry lands. Flax seeds are sown at 8-12 kg per hectare. In dry lands it is planted in early spring, late February, early March. Seeds are sown at 20-22 kg per hectare in the foothills of dry lands and 25-30 kg per hectare in the mountains. [3,4].

Experts of the Institute of Oilseed Crops recommend sowing 4-5 million pieces of oilseed flax or 30-40 kg / ha of seeds. The lowest sowing rate is selected for early matures, and the highest multiple sowing rate is selected for late-maturing flax [5].

The sowing period of flax seeds is the second half of March and is sown soon. The sowing rate is 35-40 kg / ha on irrigated lands, 16-18 kg / ha on dry lands and 20-25 kg / ha on mountainous lands. Flax is planted in rows 45 cm wide and 4-5 cm deep in an ordinary grain drill [6].

Oripov Sh., Haydarov B. The recommended sowing rate for oilseed flax is 16-18 kg / ha in the plains, 20-22 kg / ha in the foothills and 22-24 kg / ha in the mountains. Flax is sown in rows or ribbons in a

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simple grain drill with a width of 30, 45 cm, seeds at a depth of 4-5 cm [7]

METHOD AND MATERIALS

Field experiments were conducted in the conditions of typical irrigated Sierozem soils of the experimental field "Center for Innovative Developments and Consulting in Agriculture" of Tashkent State Agrarian University. The methods of "Field experiments" (T. UzPITI 2007), "Methods of field experiment" (B. Dospekhov, 1985) were used in the research.

In the experiment, local oilseed flax varieties were planted in 2020 on March 1 and March 2, 2021, respectively.

The number of replications is 3, the number of options is 12, systematically placed, the planted area is 0.15, the number of counted plants is 20. The area to be taken into account is 28 m². The soil was plowed to a depth of 30 cm in autumn, before plowing mineral fertilizers were applied in the amount of P₈₀K₆₀ and N₅₀ kg of nitrogen per hectare along with planting, in the flowering phase in the amount of 50 kg.

RESULTS AND DISCUSSION

As a result of two years of experience, the number of pods in the plant increased from 101.8 to 139.4 in foreign varieties compared to the local control variety. The data are presented in Table 1.

The local control variety of oilseed flax "Bahorikor" is 3.0 million tons per hectare in the variant in which the seeds were consumed, the number of pods per plant, their weight, the number of seeds in the pods, and their weight differed from those of the other variants studied in the experiment. In this option, 4 mln, it was found that the number of pods was 12.0 more than the variant in which the seeds were used, the weight of the pods was 0.09 grams, the number of seeds in the pods was 12 more and their weight was 0.8 grams heavier. When the sowing norm is 5 mln, it was found to be the number of pods is 2.0 more than the variant, the pods weigh 0.16 grams, the number of seeds in the pods is 22 more and their weight in the fourth option, which is 0.14 grams heavier, the number of pods is 29.0 more than in the 6.0 million high-sowing variant, the pods weigh is 0.25 grams, the number of seeds in the pods is 29, and their weight is 0, 21 grams heavier.

It was found that the number of oilseed flax varieties imported from abroad, the number of pods in the plant, the seeds in it and their weight were 4-5 times higher than the local Bahorikor navigator.

The number of seeds and their weight in the Fliz variety was higher than in the local control variety Bahorikor. In the variant where 4 million seeds were sown per hectare, the number of pods increased by

106.0, the number of seeds increased by 877.7 and the weight was 7.46 grams. In the variant where 5 million seeds were sown per hectare, the number of pods increased by 79.0, the number of seeds increased by 742.0 and the weight was 5.36 grams. In the variant where 6 million seeds were sown per hectare, the number of pods increased by 66.7, the number of seeds increased by 611.3 and the weight was 4.78 grams.

It was found that the yield elements in the fliz cultivar were higher than in the RFN navigator. In the variant of RFN cultivar planted with 3.0 million seeds per hectare, the number of pods per plant was 62.4 less than in Fliz variant and the number of seeds in the pod was 639.6, and their weight was 4.5 grams lighter. In the variant where 4 million seeds were sown per hectare, the number of pods increased by 30.3, the number of seeds increased by 334.7 and the weight was 2.37 grams. In the variant where 5 million seeds were sown per hectare, the number of pods increased by 6.8, the number of seeds increased by 105.6 and the weight was 0.77 grams. In the variant where 6 million seeds were sown per hectare, it was found that the number of pods and seeds in them was the same, as well as the same weight.

In this experiment, the number of yield elements of the Fliz variety was different from that of the Bahorikor and RFN cultivars. In the variant of RFN variety planted with 3.0 million seeds per hectare, the number of pods per plant was 77.0 more than the local variety Bahorikor, the number of seeds in the pod was 1878.2, and their weight was 13.58 grams. In the variant where 4 million seeds were sown per hectare, the number of pods increased by 120.0, the number of seeds increased by 1638.3 and the weight was 11.88 grams. In the variant where 5 million seeds were sown per hectare, the number of pods increased by 105.2, the number of seeds increased by 1369.4 and the weight was 9.89 grams. In the variant where 6 million seeds were sown per hectare, the number of pods increased by 101.8, the number of seeds increased by 1292.6 and the weight was 9.73 grams.

Flax yield also depends on the number of seeds and the weight of the seed. However, the abundance of seeds is not always the basis for high yields. This is because the weight along with the number of seeds ensures an abundant and high-quality crop only if it is at the required level.

Studies have shown that the number of seeds per pod is lower in variants with increased sowing rates. According to the average two-year data, the Bahorikor variety is 3.0 million per hectare the number of seeds per seed of the sown variant was 8.8, while in the variants with increased sowing rate it was 8.1, 7.9 and 7.2.

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Table-1. Influence of sowing rate on yield content of oilseed flax varieties, average 2020-2021

№	Cultivars	Sowing rates, mln. pcs/ha	In one plant				Weight of 1000 seeds per plant, gr	Relative to Control variant, ±
			Number of pods, pcs	Number of seeds in pods, pcs	Weight of seeds in pods, gr	Number of seeds in one pod, pcs		
1	Bahorikor (st)	3,0	25,0	298,0	1,72	8,8	5,76	
2		4,0	23,3	286,0	1,64	8,1	5,74	
3		5,0	23,0	276,0	1,58	7,9	5,74	
4		6,0	20,0	269,0	1,51	7,2	5,60	
1	Fliz	3,0	164,4	1279,6	10,11	10,3	7,90	+2,14
2		4,0	129,3	1163,7	9,1	10,0	7,85	+2,11
3		5,0	102,0	958,0	7,5	9,8	7,82	+2,08
4		6,0	86,7	880,3	6,8	9,7	7,78	+2,18
1	RFN	3,0	102,0	940,0	6,1	10,0	6,52	+0,76
2		4,0	99,0	929,0	6,0	10,0	6,51	+0,80
3		5,0	95,2	882,4	5,6	9,8	6,40	+0,66
4		6,0	86,8	800,6	5,1	9,7	6,38	+0,78

It can be seen that when the sowing rate is increased, the number of seeds in one pod decreases. This pattern was also observed in imported varieties. The number of seeds per seedling of the variant sown with 3.0 million seeds per hectare in the Fliz variety was 10.3, and in the variants with increased sowing rate was 10.0, 9.8 and 9.7 seeds. The RFN variety was found to have a higher number of seeds per pod than the control variety. In the first variant of the RFN variety, which was sown with 3.0 million seeds per hectare, the number of seeds in one pod was 10.0, and in the variants with increased sowing rate was 9.8 and 9.7. This figure is 1.2 to 2.5 more than the local control Bahorikor variety and almost the same seed shape as the Fliz variety was observed.

Thus, in the conditions of typical irrigated sierozem soils of Tashkent region, the sowing of imported varieties of oilseed flax at a rate of 3.0 million pieces per hectare will ensure the highest number of pods and seeds in the plant.

The seed weight of 1000 seeds of oilseed flax varieties depended more on the characteristics of the varieties than on the sowing norm studied in the experiment. In the second year of the experiment, the weight of 1,000 seeds was heavier.

Based on the results of the experiments, the weight of 1000 seeds was observed in the local control Bahorikor variety, which was 5.60 grams in the variant with an increase of 6 million units, a decrease compared to the variant with a decrease in the sowing rate (5.74, 5.76 grams) detected.

The same pattern was observed in the Fliz variety, where the sowing rate was relatively low (6.78 grams) in the increased variant and, conversely, the heavy 6.90 gram in the variant with a lower sowing rate of 3.0 million per hectare. It was found that this seed was heavier than the 1000 seed weight control Bahorikor variety and RFN variety. The weight of

1000 seeds in the Fliz variety is 1,14; 1,11; 1,08 and 1,18 grams heavier than in the control option and 1,38; 1,34; 1,42 and 1,40 grams heavier than in the RFN variety detected.

The rate of sowing of seeds has a significant impact on the yield of any crop. As the sowing rate increases, the plants grow higher, branching, as well as the number of pods and seeds in them decreases. Seed yield depends not only on the density of the plant, but also on the mass of 1000 seeds is determined by the number of pods in the inflorescence and the number of seeds in them.

Seed yield of oilseed flax depends on the number of seedlings of the plant. The number of pods is important in the yield structure. The formation of pods depends on the number of plant bushes, and the fact that the seedling thickness is too dense also leads to a decrease in yield. The data are shown in Figure 1.

The average yield for 2020-2021 was 17.3 c / ha from the first variant of 3.0 million seeds sown per hectare of local Bahorikor control variety, 19.1 c / ha from the second variant sown with 4.0 million seeds per hectare. it was found to be a more derived variant than the other variants studied in the experiment. The yield from this variant was 1.85 c / ha higher than the first variant, 1.65 c / ha more than the third variant and 2.4 c / ha more than the fourth variant. The lowest yielded variant was found to consume 6.0 million seeds per hectare.

Fliz seed yielded 25.9 c / ha from the first variant planted with 3.0 million seeds per hectare, 27.3 c / ha from the second variant planted with 4.0 million seeds per hectare, which is more than the other variants studied in the experiment detected. The yield from this variant was 1.4 c / ha higher than the first variant, 1.6 c / ha more than the third variant and 2.5 c / ha more than the fourth variant. The lowest yield was 6.0 million seeds per hectare, or 24.8 c / ha.

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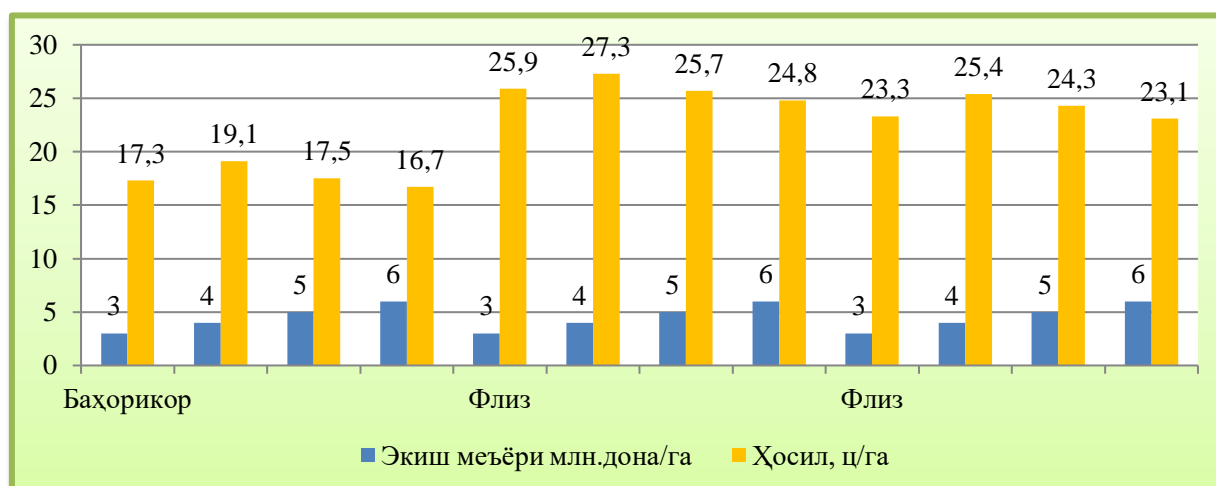


Figure-1. Influence of sowing rate on yield of flax varieties, c / ha (average two years)

The average yield of RFN seeds was found to be 23.3 c / ha from the first variant planted with 3.0 million seeds per hectare, 25.4 c / ha from the second variant planted with 4.0 million seeds per hectare, which is more than the other options studied in the experiment. The yield from this variant was 1.0 c / ha higher than the first variant, 1.1 c / ha more than the third variant and 2.3 c / ha more than the fourth variant. The lowest yield was 6.0 million seeds per hectare, or 23.1 c / ha.

CONCLUSION

Under the conditions of typical irrigated sierozem soils of Tashkent region, local Bahorikor and Russian Fliz and RFN varieties of oilseed flax were sown at a rate of 4.0 million units per hectare were taken. Among the varieties, the Fliz variety was the most productive, while the local Bahorikor variety was the least productive.

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