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**SUGAR LEVEL AND SUGAR YIELD IN SUGAR BEET ROOT PRODUCTION****Sarvar Pulatov Mustafoyevich  
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**Аннотация:** Озиқ-овқат хавфсизлигини таъминлаш, шунингдек ушбу қимматли маҳсулотни сотиб олишга бўлган валюта сарфини камайтириш учун мустақил шакар ишлаб чиқаришни йўлга қўйиш талаб этилади. Бунинг учун қанд лавлагини саноат асосида етиштиришни йўлга қўйишда илмий асосланган агротехник тадбирларни ўрганишни тақозо этади. Бундай агротехник тадбирлар сирасига республикамининг турли тупроқ иқлим шароитларида қанд лавлагини экиш муддат ва меъёрларини, минерал ўғитларга бўлган талабини, суғориш муддатлари ва меъёрлари каби агротехник элементлар киради. Шуларни ҳисобга олган ҳолда, аҳолини шакар ва шакар маҳсулотларига бўлган талабини таъминлаш ҳамда хом-ашё импортини қисқартиришда қанд лавлаги тоғ олди типик бўз тупроқлари шароитида ундан мўл ва сифатли ҳосил олиш учун парваришлаш агротехникаси элементларини ишлаб чиқиш ва ишлаб чиқаришга жорий этиш долзарб масалалардан бири ҳисобланади. Ушбу мақолада қанд лавлагини таркибидаги шакарлик даражаси тўғрисида маълумотлар келтирилган.

**Калит сўзлар:** Қанд лавлаги, ҳосилдорлик, хом-ашё, маъдан ўғит, меъёр, муддат, илдизмева, шакарлик даражаси.

**Abstract:** To ensure food security, as well as to reduce the cost of purchasing this valuable product, it is necessary to establish independent sugar production. This requires the study of scientifically based agrotechnical measures for the establishment of industrial sugar beet cultivation. Such agrotechnical measures include such agrotechnical elements as the timing and norms of sugar beet planting in various soil and climatic conditions of our republic, the need for mineral fertilizers, and the timing and norms of irrigation. Taking this into account, one of the urgent issues is the development and introduction into production of elements of agrotechnical cultivation of sugar beet in order to obtain a bountiful and high-quality harvest from it in the conditions of typical foothill loam soils. This article provides information on the level of sugar in the composition of sugar beet.

**Keywords:** Sugar beet, productivity, raw materials, mineral fertilizer, standard, term, root fruit, sugar level.

Most scientific literature states that sugar and sugar products are mainly obtained from sugar beets. Indeed, 70% of the sugar produced worldwide is obtained from sugar beets. In this regard, the "Introduction" section of the dissertation provides information on the areas of sugar beets planted worldwide and the yield obtained.

It should be emphasized that in order to achieve the highest level of sugar content in sugar beets, it is necessary to pay attention to the geographical location of the region where it is grown, soil and climatic conditions, soil fertility and agricultural techniques of cultivation. Because, like some plants, sugar beets are distinguished by their biological selectivity of the territory, their demandingness to moisture and the amount of nutrients in the soil.

The above facts were also proven in the experiment conducted in the conditions of typical gray soils of the foothills of the Kashkadarya region. Only different planting dates of sugar beet showed its effect on the sugar content. The sugar content of sugar beet roots was determined in laboratory conditions in plant roots taken from the specified variants 1-2 days before harvesting each year and recorded in special notebooks. The sugar content and sugar yield of sugar beet roots are presented in the table by year, and when analyzing these data, we use their three-year

average data. According to the data obtained, it was observed that the planting date had an effect on the sugar content and sugar yield of sugar beet. In the experiment, the highest sugar content and sugar yield were determined in the variants where sugar beet was planted early, 25-03-01.04, the sugar content was 17.9; 19.8; 19.5; 18.1%, and the sugar yield was 38.7; 76.64 81.44 76.6 c/ha. These indicators were slightly lower in the variants of the experiment planted in the middle period, 05-10.04, and they were 17.2; 19.2; 18.6; 17.3%; 38.4; 76.2; 80.4; 75.2 c/ha, respectively, while the variants planted in the late period, 15-20.04, showed the lowest indicators and these indicators were determined to be 16.4; 18.4; 18.0; 17.1 %; 33.7; 67.5; 71.1; 68.6 c/ha, respectively.

When analyzing the data, it was found that the sugar content in sugar beet roots was 10 days later than the planting period of 25.03-01.04, by 0.6-0.9%, and 20 days later, by 1.0-1.5%, when planted in the period of 15-20.04. Although the sugar yield directly depends on the yield of the root crop, the high or low sugar yield depends on the sugar content in the root crop. From this point of view, the highest sugar yield was also determined in the variants where sugar beet was planted early, and these indicators were 38.7; 76.6; 51.4; 76.6 c/ha, respectively. When sugar beet was planted in the middle term, the sugar yield was 38.44; 76.2; 80.4; 75.2 c/ha, respectively, which was 0.3; 0.4; 1.0; 1.4 c/ha less than in the early term, and 5.0; 9.1; 10.3; 8.0 c/ha less than in the late term.

Based on the data obtained on the sugar content of sugar beet and its effect on sugar yield, it can be briefly concluded that the sugar content of sugar beet roots is 0.6-0.9% lower when planted 10 days later, i.e. 05-10.04, compared to the planting period of 25.03-01.04, and 1.0-1.5% lower when planted 20 days later, i.e. 15-20.04. The highest sugar yield was observed when sugar beet was planted early, averaging 38.7-76.6 c/ha, when planted in the middle period - 38.4-80.4 c/ha, and when planted late - 33.7-68.6 c/ha. Thus, when sugar beet is planted in the early period, the sugar yield is 0.3-1.4 c / ha higher than in the middle period, and 5.0-10.3 c / ha higher than in the late period.

According to the data obtained on the effect of mineral fertilizer rates on the sugar content of sugar beet root crops, it was observed that increasing the rates of mineral fertilizers in beet cultivation negatively affected the sugar content of the root crops.

According to the data obtained, when sugar beet was grown without fertilizers, the sugar content showed the lowest results and amounted to 17.9; 17.2; 16.4%, respectively, depending on the planting dates. When mineral fertilizers were used, the highest sugar content was obtained when the NPK fertilizer rate was 120:90:60 kg / ha, and this indicator amounted to 19.8; 19.2; 18.4% depending on the planting dates. When using mineral fertilizers at the rate of NPK 160:120:80 kg/ha, these figures were 19.5; 18.64 18.0%, and when using NPK 200:140:100 kg/ha, they were 18.14 17.3; 17.1%. Thus, increasing the mineral fertilizer rate from NPK 120:90:60 kg/ha to NPK 160:120:80 kg/ha ensures a decrease in sugar content by 0.3-0.4%, and when increasing NPK 200:140:100 kg/ha, by 1.3-1.9%.

Now, when analyzing the data obtained on sugar yield, the highest sugar yield was obtained when sugar beet was planted early and mineral fertilizers were applied at a rate of NPK 120:90:60 kg/ha, and amounted to 81.4 c/ha. The lowest result was observed in the control variant of sugar beet planted late and not fertilized, and was 33.7 c/ha, and when mineral fertilizers were applied, it was obtained when sugar beet was planted late and NPK 120:90:60 kg/ha was applied - 67.5 c/ha. Thus, the high or low sugar yield in sugar beet depends primarily on the planting date and root crop yield.

From the above data, it can be concluded that the sugar content of sugar beet roots is 0.6-0.9% lower when planted 10 days later, i.e. 05-10.04, than when planted 25.03-01.04, and 1.0-1.5% lower when planted 20 days later, i.e. 15-20.04. A relatively high sugar yield (80-80 c/ha) can be obtained by planting sugar beet early and applying mineral fertilizers at the rate of NPK 120:90:60 kg/ha, but the higher or lower sugar yield depends primarily on the planting date and root crop yield.

Full data are presented in Table 1.

**Table-1**

**Effects of planting dates and mineral fertilizer rates on root and fruit sugar level and sugar yield of sugar beet**

№	Planting periods	Mineral fertilizer standards, kg/ha	first year			second year			third year			Average sugar level in three years, %	Average sugar yield in three years, ts/ha	Additional sugar yield, ts/ha	
			tubers yield ts/ha	sugar level, %	sugar yield ts/ha	tubers yield ts/ha	sugar level, %	sugar yield ts/ha	tubers yield ts/ha	sugar level, %	sugar yield ts/ha			from the time of planting	from the rate of mineral fertilizer
1	25.03-01.04	Ўғитси з (назорат)	212,8	18,1	38,5	242,0	17,5	42,3	193,2	18,3	35,3	17,9	38,7	5,0	-
2		NPK 120:90:60	382,6	19,8	75,7	415,0	19,1	79,2	363,0	20,7	75,1	19,8	76,6	9,1	37,9
3		NPK 160:120:80	413,5	19,6	81,0	443,9	18,9	83,9	394,9	20,1	79,3	19,5	81,4	10,3	42,7
4		NPK 200:140:100	415,6	18,0	74,8	449,5	17,3	77,7	396,6	19,1	75,7	18,1	76,6	8,0	37,9
5	05-10.04	Ўғитси з (назорат)	219,0	17,5	38,3	251,0	16,8	42,1	200,5	17,4	34,8	17,2	38,4	4,7	-
6		NPK 120:90:60	393,3	19,2	75,5	424,9	18,6	79,0	374,4	19,8	74,1	19,2	76,2	8,7	37,8
7		NPK 160:120:80	429,3	18,6	79,8	457,3	18,1	82,7	410,8	19,2	78,8	18,6	80,4	9,3	42,0
8		NPK 200:140:100	432,8	17,3	74,4	465,0	16,6	76,7	414,3	18,1	74,5	17,3	75,2	6,6	36,8
9	15-20.04	Ўғитси з (назорат)	200,5	16,4	32,8	233,9	15,9	37,2	182,2	17,1	31,1	16,4	33,7	-	-
10		NPK 120:90:60	367,6	18,4	67,6	385,9	17,8	68,7	349,3	19,0	66,3	18,4	67,5	-	33,8
11		NPK 160:120	394,0	18,0	70,9	421,2	17,3	72,8	372,6	18,7	69,6	18,0	71,1	-	37,4

		0:80													
12		NPK 200:14 0:100	396, 0	17,0	67,3	430,7	16,2	69,7	376,6	18,3	68,9	17,1	68,6	-	34,9

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