

## EFFECTS OF TOMATO HYBRIDS ON YIELD AND ECONOMIC EFFICIENCY INDICATORS IN DIFFERENT PLANTING SCHEMES

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**Abstract.** The lowest cost (50.6-89.8 thousand soums/t) and highest net income (27.7-89.5 million soums) and profitability level (67.2-196.7%) were obtained when growing tomato varieties and hybrids with a planting scheme of 90×25 cm and a plant density of 44.4 thousand soums/ha.

**Key words:** *Weakly saline soils, planting patterns, net income, cost, profitability.*

**Introduction.** The Bukhara region is characterized by the peculiarity of soil and climatic conditions, the volume of tomato production is much lower than the supply of population demand, and the level of productivity does not exceed 20-22 tons per hectare.

Increasing the yield of a tomato crop under certain conditions is largely due to the selective planting of adaptable varieties resistant to high - yielding, salty, disease-pest and other extramural factors, the organization of scientifically based domestic primary and elite seed production, the wide introduction into practice of important scientific and practical significance are considered to be of the most pressing issues.

Tomatoes are the main leading vegetable crop in our republic, and the demand for it has not been adequately satisfied to this day. The main reason for this is the fact that crop varietal hybrids are evaluated taking into account the soil and climatic conditions of each region, from which high-yield adaptations are not distinguished, there is a lack of high-quality seeds. From practice, it is known that through properly organized seeding, yields can be increased by 20-25% [6,7,9].

**Research objective.** In the conditions of weakly saline soils of the Bukhara region, tomato tezpishar, ortatezpishar and medium-sized variety-consists in the separation of adaptable prospects based on a comprehensive assessment of the collection of hybrids.

**Materials and methods.** Field experiments were carried out on alluvial soils of the farm irrigated Meadow "Hamroev Khalil Bozorovich" of the Jondor District of the Bukhara region in the following directions. In studies, tomato variety-hybrids (Volgogradsky 5/95-st., Independence-28, Red stone, Bobcat F1, Lojain F1) were compared in 90×30 cm (control), 90×25 cm, 90×20 cm planting schemes with 37.0 thousand bushes per hectare (control), 44.4 and 55.5 thousand Bush thicknesses. The area of delyanka was 18 m<sup>2</sup>, the total area of the experiment was 810 M<sup>2</sup>, the number of returns was 3.

The experiment was carried out in a single outline, characterized by a humus content of 0.97-1.12% in the soil of the experimental plot, gross nitrogen-0.102-0.115%, phosphor0,171-0,188%, potassium-1.96-2.03%, aqueous absorption-weak alkaline pH=7.2-7.3, salinity-weak chloride (0.310-0.412% chlorine ion). All observations, measurements, calculations and analyzes on the experimental site were carried out on the basis of a general method and recommendations [1,2,3,4,5].

**Discussion of research results.** The average yield of tomato variety-hybrids in different planting schemes and Bush thicknesses for 2022-2024 has changed from 20.8 to 92.7 tons per hectare.

The yield on experimental returns and variants in 2022 was 20.1-86.2, 18.4-97.2 in 2023, 18.7-99.3 t/ga in 2024, with 2024 being relatively fertile, with an average of 2023, with a low yield of 2022. The average yield is 20.8 t/ga In a 90×30 cm scheme in the standard Volgogradsky 5/95 variety, of which the commodity yield is 17.9 t/ha or 86.0%, in a 90×25SM planting scheme 25.3 t/ha, of which the commodity yield is 25.3 t/ha or 86.8%, and in a 90×20sm scheme 26.1 t/ha, of which the commodity yield is 22.8 t/ha or 87.2%.

In the tested Independence-28 and Red stone varieties, the yield in the 90×30 cm scheme is 32.9-41.2 t/ha, of which the commodity is 31.1-40.1 t/ha, or 94.6-97.4%, the yield in the 90×25 cm scheme is 37.3-45.9 t/ha, of which the commodity is 35.5-45.0 t/ha, or 95.1-98.0, the yield in the 90×20 cm scheme was found to be 39.1-47.8 t/ha, of which the commodity was 37.4-47.0 t/ha, or 95.6-98.4%, and the collateral yield was 6.2-6.6 t/ha, within an experimental error.

The studied Bobcat F1 and Lojain F1 have the highest yields, at 59.8-84.4 t/in a 90×30 cm scheme, of which 55.7-82.4 t/ha or 93.6-97.6% is commodity yield, at a 90×25 cm scheme, respectively, 65.1-90.0 t/ha 61.1-88.4 t/ha, 93.8-98.2%, co-yield 5.3-the fact that it is 5.6 t/ha, In a 90×20 cm scheme is 67.0-92.7 t/ga, 63.1-91.5 t/ha, 94.2-98.7%, the additional yield is 7.2-8.3 t/ha, based on dispersion analysis that it is within an experimental error.

Therefore, in conditions of weakly saline irrigated soils, it is possible to achieve a commodity yield of 35-45 tons by growing tomato adaptable Independence-28, Red stone varieties in a 90×25 cm planting scheme, and in Bobcat F1, Lojain F1 hybrids-61.1-88.4 tons.

To calculate the economic efficiency of growing tomato varieties and hybrids in different planting schemes and Bush thicknesses, a technological card developed and approved by the Ministry of Agriculture and reporting materials of regional vegetable farms were used.

According to estimates, the total cost per hectare is from 37.5 to 47.7 in terms of experience options mln.so ' formed m (Table 1). The cost of one Centner harvest varied from 50.6 to 180.3 thousand rubles depending on the options. The cultivation of tomatoes on the example of the standard Volgogradsky 5/95 variety in our experiment in cases with a yield of 26-28 t/ha is considered economically harmful.

Table 1. Economic efficiency of growing tomato variety hybrids in different planting schemes and bush thicknesses (2022-2024)

№	Seedling planting scheme (sm)	Bush thickness (in thousand / hectares)	Productivity, t / ga	The total amount of expenses per hectare, million. soum	1 ts of harvest, in thousand soums		Бир гектардан олинган, млн. сўм		Rate of return, %
					priceless	selling price	yield value	net income	
Volgogradsky 5/95 variety									
1.	90×30	37,0 (control)	20,8	37,5	180,3	150,0	31,2	-6,3	-16,8
2.	90×25	44,4	25,3	39,1	154,6	150,0	38,0	-1,1	-2,8
3.	90×20	55,5	26,1	40,8	156,3	150,0	39,2	-1,6	-3,9
Independence-28 variety									
4.	90×30	37,0 (control)	32,9	38,9	118,2	150,0	49,4	10,5	27,0
5.	90×25	44,4	37,3	40,3	108,0	150,0	56,0	15,7	39,0
6.	90×20	55,5	39,1	42,4	108,4	150,0	58,7	16,3	38,4
Red stone variety									
7.	90×30	37,0 (control)	41,2	39,6	96,1	150,0	61,8	22,2	56,1
8.	90×25	44,4	45,9	41,2	89,8	150,0	68,9	27,7	67,2
9.	90×20	55,5	47,8	43,0	90,0	150,0	71,7	28,7	66,7
Bobcat F1 hybrid									
10.	90×30	37,0 (control)	84,4	43,8	51,9	150,0	126,6	82,8	189,0

11.	90×25	44,4	90,0	45,5	50,6	150,0	135,0	89,5	196,7
12.	90×20	55,5	92,7	47,7	51,5	150,0	139,1	91,4	191,6
<b>Lojain F<sub>1</sub> hybrid</b>									
13.	90×30	37,0 (control)	59,8	41,5	69,4	150,0	89,7	48,2	116,1
14.	90×25	44,4	65,1	43,0	66,1	150,0	97,7	54,7	127,2
15.	90×20	55,5	67,0	44,8	66,9	150,0	100,1	53,5	119,4

Yields of 32.9 t/ha and above provided a net profit of 10.5 million soums per hectare and a profitability of 27.0%. It is possible to achieve high economic efficiency by growing tomato varieties with a convenient planting scheme (90×25 cm) or bush density (44.4 thousand/ha).

### Literature

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