



PLANTING PERIODS OF SWEET PEPPER VARIETIES AND HYBRIDS IN PROTECTED AREAS

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Abstract

This article provides recommendations on the state of cultivation of sweet pepper around the world, biological characteristics of the variety grown in unheated greenhouses, optimal terms for planting seedlings, early spring air, soil temperature and relative humidity of greenhouses

Key words: Sweet pepper, unheated greenhouse, planting dates, variety samples, "Dar Tashkenta", "Zarya Vostoka", "Zumrad" temperature requirements, growing season, soil, climate, phenological parameters, flowering, fruiting, fruitfulness

Today, 1,950 million sweet peppers are produced worldwide. 80 mln. More than tons of products are being produced. The average productivity is 120-130 tons per hectare in greenhouses, and 18.1-20.3 tons in open fields. Nowadays, interest and demand for sweet pepper crop is increasing day by day, this crop is grown in all countries of the world.

China (15.8 million tons), Mexico (2,300 million tons), Turkey (2,160 million tons), and Indonesia (1,730 million tons) have been producing sweet pepper for several years. leading in the world. In these countries, sweet pepper is grown year-round both in the open field and in greenhouses. A number of varieties suitable for cultivation in greenhouse conditions have been created and cultivation methods have been developed. In our republic, this type of vegetable is grown only in the open field. Selection of its varieties suitable for growing in a greenhouse and development of elements of the technology of growing sweet pepper in a greenhouse are one of the urgent tasks that allow to provide the population with fresh vegetables throughout the year. In the cultivation of sweet pepper in unheated greenhouses, the biological characteristics of the variety, optimal terms of planting seedlings, the order of early spring air, soil temperature and relative humidity of the greenhouses were determined.

Air temperature (20-23 0C), soil temperature (16-18 0C) and relative air humidity (70-80%) that allow the earliest harvest of sweet pepper in unheated greenhouses in the southern region are available from the first ten days of

March. was determined to arrive. Based on the comprehensive assessment of morpho-biological and economic characteristics of 35 varieties of sweet pepper in unheated greenhouse conditions, promising lines were selected as the initial source.

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Air temperature (20-23 0C), soil temperature (16-18 0C) and relative air humidity (70-80%) are available from the first ten days of the year in unheated greenhouses in the central region, which allow the earliest harvest of sweet pepper. March decided to come. Based on a comprehensive assessment of the morpho-biological and economic characteristics of 35 types of sweet peppers that were not heated in greenhouse conditions, promising lines were selected as the initial source.

In the cultivation of sweet pepper in unheated greenhouses, the biological characteristics of the variety, optimal terms of planting seedlings, early spring air regime, soil temperature and relative humidity of the greenhouses were determined.

Therefore, the production of the assortment of the greenhouse includes the production of non-seasonal food products.

Cultivation study of non-heated samples of attraction 16 samples of sweet varieties were planted and studied in 2020-2021. The variety Dar Tashkenta was selected for the State Register of Uzbekistan as a standard variety.

One of the most important ways to increase the productivity of vegetable crops in heated greenhouses is the optimal planting period. And in the production of agrotechnical tools for obtaining a quality harvest, making the necessary periods for the implementation of seedlings very important. Seedlings are planted at different times depending on the production plan and the purpose of growing the product. In addition, seedlings are planted in different periods to obtain the period of consumption.

Weather and soil climate conditions of our republic change from year to year. This requires our scientists to study new vegetable crops suitable for climatic conditions, as well as optimal periods for planting auxiliary crops in open and protected areas, and to obtain a higher yield, to conduct scientific research on the development of the population's needs for vegetable crops throughout the year. . after. Sweets are planted in the homesteads along with vegetable crops. But scientific research data on its early spring planting dates in hot rooms with



unheated film are not enough. The main goal of the year is to plan optimal periods for obtaining a high and high-quality harvest from sweet use in unheated film greenhouses. Protected lands have a large area with the correct timing of planting vegetable crops. If the planting dates are delayed by one week, the yield will be delayed by 20-25 days and the next harvest by 710 days.

Abroad, there is evidence that sweet potato can be planted in unheated film greenhouses to obtain high and quality crops (P. W. Bosland and Alton L. Bailey 2004). However, the product was not exported to our country. Based on this, seedlings of Dar Tashkenta, "Zarya Vostoka" and "Zumrad" varieties were planted in early spring in four periods. The phenological monitoring of sweet varieties planted in an unheated greenhouse at different times can be seen in the table below.

Table1.

Phenological indicators of 2 sweet varieties planted in different periods of an unheated greenhouse (2011-2022)

Planting deadlines	Seizure of seedlings, day		After planting seedlings..., day					
			until it blooms		until it bears fruit		until technical	
	10%	75%	10%	75%	10%	75%	10%	75%
«Dar Tashkenta»								
February 1	4,0	9,0	18,0	37,0	55,0	66,0	79,0	91,0
10 february	3,0	8,0	16,0	34,0	51,0	57,0	67,0	82,0
March 1 (control)	4,0	7,0	14,0	29,0	43,0	46,0	61,0	73,0
10march	3,0	6,0	12,0	27,0	36,0	41,0	48,0	68,0
×	4,5	7,2	15	31,8	45,5	52,5	63,8	78,0
"Zarya Vostoka"								
1february	4,0	7,0	17,0	35,0	55,0	67,0	80,0	93,0
10february	3,0	6,0	16,0	34,0	48,0	60,0	71,0	83,0
March 1(control)	4,0	5,0	12,0	27,0	42,0	45,0	59,0	73,0
10march	3,0	4,0	10,0	24,0	41,0	44,0	53,0	67,0
×	3,8	5,5	13,8	30,0	45,0	54,0	66,3	78,8
"Emerald"								
1february	5,0	9,0	22,0	39,0	58,0	64,0	77,0	92,0
10february	4,0	7,0	18,0	36,0	49,0	63,0	72,0	87,0
March 1 (control)	3,0	6,0	14,0	25,0	43,0	46,0	60,0	75,0
10march	3,0	5,0	11,0	24,0	39,0	42,0	58,0	72,0
×	3,3	6,8	16,3	31,0	47,0	53,8	69,0	82,0



In an unheated greenhouse, sweet pepper seedlings require sufficient heat to germinate in cool weather in early spring. Dar Tashkenta, "Zarya Vostoka", "Zumrad" varieties of sweet pepper were planted in a 70x40 cm planting scheme at different times.

The duration of the seedling period was 4-7 days for 10-75% germination of Dar Tashkenta when planted in the control option, and 4-9 days were needed for the first and second options. When planting in the fourth option, 3-6 days were required. This can be explained by the fact that the air temperature was slightly higher in the first ten days of March, and this factor caused the seedlings to catch faster in the following periods.

It took 14-29 days for the Dar Tashkenta variety to reach 10-75% flowering from the day of planting, 16-34 days for the first and second options, and 12-27 days for the fourth option.

It is necessary to pay great attention to the quality of seedlings in unheated greenhouse conditions. Keeping sweet pepper seedlings in the spring period depends on its quality. For the experiments, the planted seedlings were selected with a height of 13.5-22.7 cm, the number of leaves per seedling was 5.0-8.8 pieces. When the seedlings were transferred to the experimental field, the retention of 94-98% was recorded. done. This behavior of seedlings in early spring months is a good indicator.

When determining the productivity of sweet pepper varieties planted in unheated greenhouse conditions, the highest productivity was observed in Zumrad, Sabo, Yulduz, and Shodlik varieties and it was 41.2-45.2 t/ha. The total productivity of the high-yielding varieties was 110.6-124.8% higher than the standard variety. Tong, Podarok Moldovy, Bolgarsky 79, Pamir, Kaliforniyskoe chudo varieties, whose productivity is almost equal to the standard variety, were also separated. Their yield was 47.7-49.0 t/ha. The productivity of other studied varieties was 85.5-96.1% compared to the standard variety. On average, 5.8-10.8% of the crop is not successful compared to the total crop. There are several reasons for this, which should be explored in further research.

Table 2

Morphological indicators of sweet pepper variety samples grown in unheated greenhouse conditions (2021-2022)

№	Varieties are samples	In one plant:					
		stem weight		the number of leaves		leaf level	
		G	%	Piece	%	dm ²	%



1	Dar Tashkenta (n-t)	906	100	526	100	92,2	100
2	Zarya Vostoka	845	93,3	570	108,4	106,5	115,5
3	Emerald	860	94,9	620	117,9	105,3	114,2
4		920	101,5	543	103,2	88,9	96,4
5	Tong	970	107,1	513	97,5	88,6	96,1
6	Sabo	1020	112,6	610	116,0	105,6	114,5
7	Yulduz	775	85,5	552	104,9	92,8	100,7
8	Shodlik	794	87,6	536	101,9	89,1	96,6
9	Lastochka	830	91,6	530	100,8	91,4	99,1
10	Podarok Moldovy	845	93,3	490	93,2	87,2	94,6
11	Pamir	794	87,6	509	96,8	90,3	97,9
12	Maxi Bell	1010	111,5	541	102,9	110	119,3
13	Gampion	790	87,2	485	92,2	89,7	97,3
14	Smorogd	960	106,0	610	116,0	112,4	121,9
15	Bolgarskiy 79	741	81,8	532	101,1	93,5	101,4
16	Kaliforniskoe chudo	923	101,9	504	95,8	96,1	104,2

The stem weight per plant was 906 grams in the control Dar Tashkenta variety, while the stem weight of the Sabo variety compared to the control variety was 1020 grams, which was 114 grams (12.5%) heavier than the control variant. The weight of stems of "Tong", "Maxi Bell", "Nargiza", "Smorogd" varieties was 14-125-150-40-17 grams (1.5-14.8-17.4-4.3-1, 5%) became severe. The stem weight of "Zarya Vostoka", "Zumrad", Yulduz, Shodlik, Lastochka, Podarok Moldovy, Pamir, Gampion, Bolgarsky 79 varieties is 61-46-131-112-76-61-112-116 g per Dar Tashkenta variety (5–8%) was light. It was observed that it was lighter by 24–46 (3.0–4.8) grams. In the experiment, the weight of the stems of sweet pepper varieties planted in the experiment was heavy or light, depending on the vegetation period of the plant and the height of the plants. The number of leaves per plant of the Dar Tashkenta variety planted under control was 526 pieces (100%), while the number of leaves in the "Zarya Vostoka" variety was 691 pieces, compared to the control, it was 44 pieces (8.4%), "Zumrad" , "Nargiza", "Sabo", "Yulduz" varieties have more leaves by 44.94-1784-2884 pieces (17.9-3.2-16.0-4.9,16.0%) was observed. In plants, whether the leaf surface is large or small is important for photosynthesis, transpiration and gas exchange. The products synthesized at the level of leaves or cells change the productivity indicators of the plant in a positive or negative direction due to the fact that they supply nutrients to other parts of the plant, i.e. stems, roots, flowers, and fruits. Based on the natural climatic conditions of our republic, 150-180 days of hot days are favorable for growing sweet pepper plants in unheated film greenhouses. Studies were conducted on the cultivation of sweet pepper in



non-heated greenhouses with film, and varieties suitable for cultivation in these conditions were selected.

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