

DETERMINING THE OPTIMAL PLANTING DATES FOR CUCUMBER HYBRIDS IN AN UNHEATED GREENHOUSE

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<https://doi.org/10.5281/zenodo.13377709>

Abstract. This article provides information on the results obtained in the study of acceptable cucumber hybrids planting periods in an unheated greenhouse. The optimal planting period for 30-day seedlings of cucumber hybrids in a greenhouse with an unheated plinth was March 10. In this, it was found in studies that the yield was 161,2 tons per hectare during the planting period of March 10 and was 115,5% or 21,7 tons more than the control. Orzu Sardor

Keywords: cucumber, unheated greenhouse, sowing period, hybrid, soil, yield.

Introduction. Cucumbers are one of the leading vegetable crops grown on open and protected land. Currently, cucumbers are grown in almost all countries of the world on a total area of about 300 thousand hectares, and its industrial production is carried out in 70 countries, among which China, Iran, Turkey and Russia lead [1; 8].

The use of protected land ensures uniform delivery of vegetable products throughout the year, including in the off-season [3; 8].

An important element of crop cultivation is the nature of plant placement, its feeding area and parameters of optimal density. Which significantly influence temperature, air, water and nutrient regimes [4; 5; 7]. The efficiency of mineral nutrition is enhanced at optimal moisture availability of plants. Optimal plant density reduces moisture consumption for transpiration, allows more rational use of a unit of sown area to create the productive part of the yield [7; 9]. The amount of feeding area required by cucumber plants depends on the varietal characteristics. Increasing the feeding area by widening the row spacing causes stem elongation, increases the number of leaves, and increasing the distance between plants in the row promotes additional shoot formation [2; 6; 7]. Overcrowding limits not only the number of side shoots, but also the number of female flowers. Plant density significantly affects the yield of cucumber seeds. Both densification and sparseness have a negative effect on seed yield.

Increasing the feeding area noticeably increases germination, germination energy and 1000 seed weight [4; 5; 7].

Planting periods are important in Uzbek vegetable production. It is associated with the fact that the plant is in demand for heat and soil moisture, and the duration of the growing season is also of great importance. If the period of planting in the southern regions for one crop is one, then in the northern regions it begins much later. In the central climatic zones, there are deadlines for its self-sowing.

Planting periods are also associated with soil temperatures of 2,5–3,0 depths. When the temperature is 14-15°C, it is necessary to calculate the appearance of sprouts as the last cold days in early spring pass. When seeds of crops that belong to the genus of pumpkins are planted in the soil when there is enough temperature in the soil, they will rot or turn out to be very sparse without leaving.

Research results. To determine the optimal planting dates for seedlings of cucumber hybrids in unheated film greenhouses, the Sardor F₁ and Orzu F₁ hybrids were studied in 4 planting Terms: March 1, March 10, March 20 (standard), and April 1.

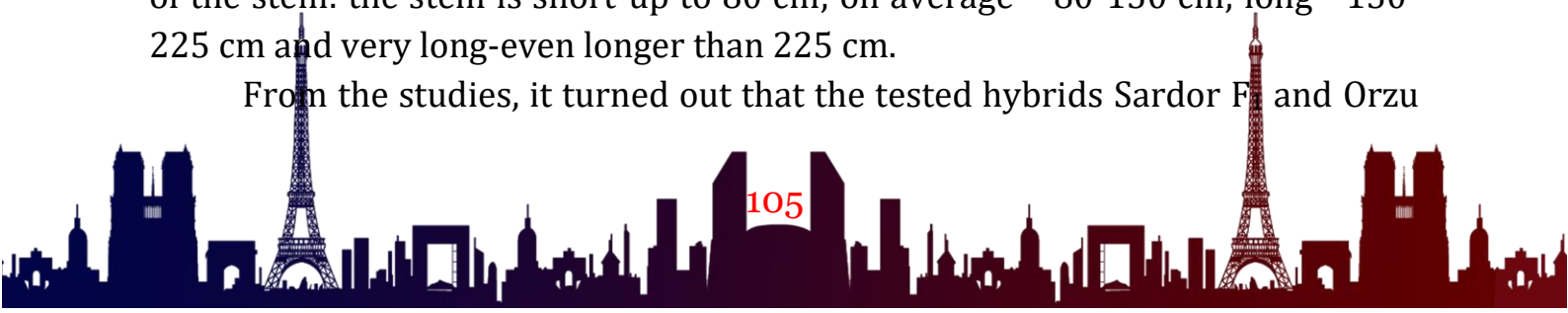
The appearance of sprouts in the Sardor F₁ hybrid (10 %) was 3-5 days between options. The emergence of sprouts accelerated as the sowing periods of these seeds were delayed, and their average was 4,0 days. In the Orzu F₁ hybrid, too, the law obtained in the Sardor F₁ hybrid was repeated.

For the maintenance of 10% of the fruit of the Sardor F₁ hybrid, it took 56 days in the sowing period of March 1, while on March 10 it took 53 days, on March 20 it took 51 days and on April 1 it took 48 days. In this case, the difference between the previous and last sowing dates was 8 days. Their average fell to 52 days.

For the maintenance of 10% fruits in the Orzu F₁ hybrid, 1 March amounted to 55 days in the sowing period, on March 10 it was 54 days, on March 20 it was 52 days, and on April 1 it was 50 days in the sowing period. The differences between the sowing periods were equal to 2-5 Days. Their average was 52,8 days.

Cucumber hybrids differ slightly from each other according to the structure of the vegetative harvest organs of the plant, in particular by the length of the stem: the stem is short-up to 80 cm; on average – 80-150 cm; long - 150-225 cm and very long-even longer than 225 cm.

From the studies, it turned out that the tested hybrids Sardor F₁ and Orzu



F₁, regardless of the period of different planting of the stem of the plant in height, in 40-day plants they belonged to a tall group, that is, between 172,3-195,3 cm. In the Sardor F₁ hybrid, during the planting period of March 1, the plant height was 172,3 cm, or it was 93,5% compared to the control. Control in the planting period of March 20, the stem of the plant was 184,2 cm, and concerning it, the stem length was 6,0% longer when the planting period was 10 days early, and the stem length was 3,4% shorter when it was 10 days late. The average height of the Sardor F₁ hybrid plant was 182,5 cm in terms of all planting periods.

In the Orzu F₁ hybrid, the law in the deadlines for planting plants such as the Sardor F₁ hybrid has been returned. Control if the Orzu F₁ hybrid plant in the planting period of March 20 was 176 cm tall, compared to it in the planting period of March 1, which was 94,7%. The height of the stem of the plant was 5,3% higher than the control when the planting period was 10 days early. The planting period on April 1 was 3,4% lower than the standard plant height. The average indicator of all planting deadlines fell on the Orzu F₁ hybrid – 174,5 cm.

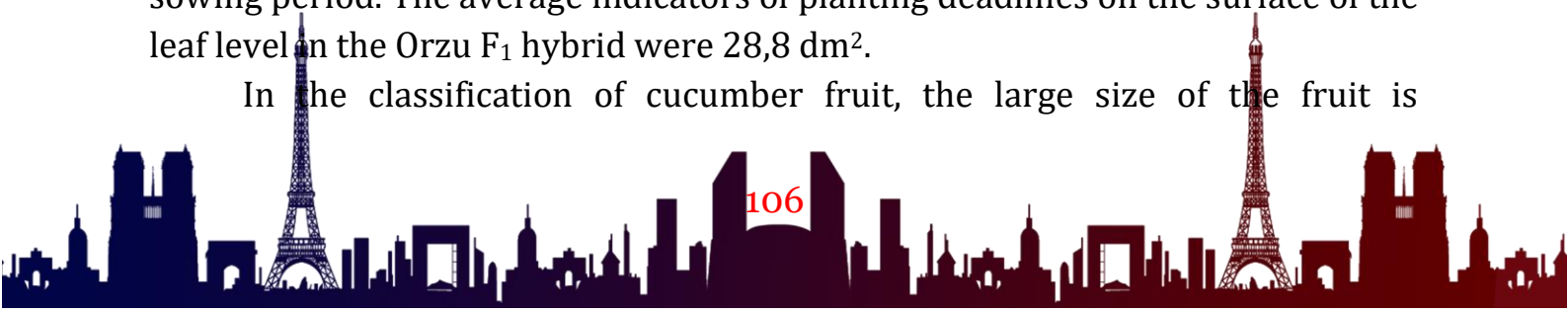
In a 40-day single plant, the control variant in the Sardor F₁ hybrid had a maternal flower count of 21,5, and concerning it, at the planting period of March 1, it was 93,1%. In the 10 March planting period, maternal flowers were 112,6% higher than the control option and 6.1% lower than the control in the 1 April planting period. The average for all sowing dates of mother flowers was 23,1 pieces. The law on maternal flowers in terms of planting in the Orzu F₁ hybrid was similar to that of the Sardor F₁ hybrid.

The correlation of correlation coefficient between the number of leaves and the number of maternal flowers in terms of planting dates in one plant of 40 days in the hybrids Sardor F₁ and Orzu F₁ was positively strong and convincing ($r=+0,92\pm0,14$).

In the control variant in the Sardor F₁ hybrid, the leaf level in one plant was 35,7 dm² and compared to it was 93.6% in the planting period of March 1 and 94,7% on April 1. During the planting period of March 10, the surface of the leaf level was 108,0% more or 38,6 dm². The average leaf level was 35,4 dm².

In the control option in the Orzu F₁ hybrid, the leaf level was 27,6 dm² per surface, and compared to it, the sowing period of March 1 and April 1 was 94,4-96,8% less. Compared to the control, March 10 had an increase of 105,6% in the sowing period. The average indicators of planting deadlines on the surface of the leaf level in the Orzu F₁ hybrid were 28,8 dm².

In the classification of cucumber fruit, the large size of the fruit is



distributed as follows: small-up to 8 cm; medium-8-12 cm; large-12-18 cm and very large-above 18 cm.

Since the length of the fruits of the Sardor F₁ and Orzu F₁ hybrids is between 10,0-12,5 cm, regardless of the planting period, it belongs to the average (8-12 cm) group. During the ripening period of fruits on the plant, the width of the fruits in the Sardor F₁ hybrid amounted to 3,5-3,7 cm in all planting periods.

In the Orzu F₁ hybrid, the width of the fruits was the same 3,6 cm in the control option on March 20 and in the sowing period of March 10. 1 March and 1 April were 97,2% compared to control in the sowing period. The average of all sowing dates was 98,6% compared to the control in this hybrid. The correlation coefficient between fruit length and fruit width was positive mean ($r = +0.69 \pm 0.25$).

During the period of fruit maintenance, the number of fruits on one bush plant in the Sardor F₁ hybrid, the control option was 45,5 pieces in the sowing period of March 20, and compared to it, 41,1 pieces in the planting period of March 1, or 90,3% concerning the control and 93% in the sowing period of April 1. Compared to the control, 10 March planting amounted to more than 113,2% or 51,5 units in the term. The average indicator of the duration of four plantings was 45,1% or 99,1% compared to the control.

In the control option in the Orzu F₁ hybrid, the number of fruits on one bush plant was 44,5, and in comparison with it was 40,1 or 91,0% in the sowing period of March 1 and 41,4 or 93% on April 1. In the 10 March planting period, the number of fruits was 50,2, or 112,8%, as opposed to control. The average of all planting deadlines was 44,2 units or 99,2% compared to the control.

One fruit weight of the Sardor F₁ hybrid was 96,5 g in the control option, and compared to it is equal to 96,5 g in the sowing period of April 1, and 96,5 g or 98,2% in the sowing period of March 1. 10 March was 102% in the sowing period. The average of all sowing dates was 97,9 g or 99,6% compared to the control.

One fruit weight Orzu F₁ hybrid was 98,0 g in the control option and compared to it is equal to 98,2 g in the sowing period of April 1 and 95,5 g or 97,4% in the sowing period of March 1. 10 March was 102% in the sowing period. The average of all sowing dates was 97,9 g or 99,9% compared to the control.

During the period of technical maturity of fruits, the correlation coefficient between the number of fruits per bush plant and the weight of one fruit per bush

was strong and convincing ($r = +0.87 \pm 0.17$).

The specificity of hybrids in 1 plant in the control variant of Sardor F₁ when was 4,5 kg, in the sowing period of March 1, it was 4,0 kg, or 88,7% compared to the control. 10 March was 5,2 kg in the sowing period, or 115,5% more than the control, and 4,1 kg in the planting period of 1 April, or 98,9% compared to the control. The average of all sowing dates was 4.4 kg or 98,9% compared to the control.

In the Orzu F₁ hybrid, the total fruit weight in 1 plant in the control option was 4,4 kg, and in comparison with it, at the sowing period of March 1, it was 3,9 kg or 88,7% less than the control. 115,1% more or 5,0 kg compared to the control in the sowing period of March 10. The average of all sowing dates was 4,3 kg or 99,3% compared to the control.

The yield per hectare in the control variant in the Sardor F₁ hybrid was 139,0 tons, and in comparison with it, in terms of sowing on March 1 and April 1, the yield was 15,3 and 12,4 tons less. During the 10 March planting period, the yield was 161,2 tons per hectare and was 115,5% or 21,7 tons more than the control. With an average of all planting periods of 138,0 t/ha, it falls on March 20.

In the Orzu F₁ hybrid, the yield in the period of control planting on March 20 was 136,5 tons per hectare, and compared to it, the sowing period of March 1 and April 1 was 88,7% and 93,2%. The yield was 156,6 t/ha for the 10 March planting period, or 115,1% higher than for the standard period. The average scarecrow of planting deadlines was 135,5 t/ha, or 99,3%, as opposed to the control.

In a greenhouse with an unheated plinth, it was determined that the optimal planting period for seedlings of cucumber hybrids 30 days is March 10.

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