

Growth and Development Stages of Cucumber Varieties and Hybrids in Greenhouses

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Abstract: In this article, the passage of growth and development stages, phenological phases, of cucumber varieties and hybrids grown in greenhouses in Uzbekistan was studied. Observations were made on cultivars and hybrids such as Orzu variety, Orzu(super) F1, Roki F1, and Kross F1. It was observed that the first harvest of the studied varieties and hybrids of cucumbers was carried out after 49-59 days, and that the dream (super) crop was formed the earliest.

Keywords: cucumber, phase, cucurbitaceae, hybrid, flowering, budding, variety, greenhouse, *cucumis sativus L.*

It is known that now, worldwide, special attention is being paid to the organization of a healthy diet that provides the daily consumption of fruits and vegetables. Among vegetables, cucumber is one of the main crops, and it is important to increase its production volume and improve product quality.[3] The total area of cucumbers planted in the world is 2 mln. 496 thousand hectares, and the gross production volume is 83.8 million. tons. China (65 million tons), Iran (1,981,000 tons), Russia (1,940,000 tons), Turkey (1,827,000 tons), and the United States (956,000 tons) have been the leaders in terms of gross output in recent years[4,5]

Cucumber is a popular vegetable crop, it is not high in calories, but it is widely used all over the world due to its deliciousness and dietary properties. Cucumber (*cucumis sativus l.*) is an annual herbaceous plant belonging to the cucurbitaceae family. Its homeland is the famous tropical regions of India and Indo-China. It has been around for 5000 years and then spread to other countries. Cucumber was known in Russia in the 8th-9th centuries, and in the 17th century it became widespread in Europe and America.[8]

Because cucumber is a southern plant, it requires heat. but due to the short growth period, it is extremely widespread - up to 630 north latitude. It is grown even beyond the Arctic Circle in frost-protected soil. 100 g of cucumber fruit contains 96 g of water, 0.6 g of protein, 0.1 g of fat, 2.2 g of carbohydrates, 0.03 mg of vitamin v1, 0.02 mg of vitamin v2, 0.3 mg of niacin, 12 mg contains vitamin C, 12 mg calcium, 0.3 mg iron, 15 mg manganese and 24 mg phosphorus. in addition, 100 gr. the product has 12 kilocalories.[6] unripe barra fruits of cucumber are eaten fresh, salted or canned. Cucumber stimulates appetite and helps digestion of other foods. it dissolves kidney stones, uric acid crystals, eliminates various wounds, helps prevent atherosclerosis and obesity. In addition, it is widely used in cosmetics.[9,10]

"Into the state register of agricultural crops recommended for planting in the territory of the

Republic of Uzbekistan" in 2020, first-generation hybrids such as local Navbahor, ToshdAU-70, Elegant, Samar and foreign hybrids such as Roki, Fokus, Eliza, Sultan, Majestik, Seydra Alamir, Alanis, Adrian, Barxan, Valeystar, Kristina, Multistar, Melen, Nail, Orzu, Passandra, Pikolino, Pontiya, Seray, Superdelta, Jazzer, Xarman, Luna, Tristan, etc., are some hybrids recommended [7,11].]

The following hybrids have gained great popularity among the greenhouse growers of Uzbekistan: winter-spring-Orzu variety, Orzu Super F₁, Kros F₁, Roki F₁ hybrids and others.[12]

Results and discussion. In the experiments, 4 hybrids of cucumber, dream (super), rocky and cross were planted in the winter-spring season. The field experiments were repeated 4 times, and they were conducted on 12 m² plots on 9-meter-long egates. As a standard, the Orzu variety of cucumber was taken. All varieties and hybrids of cucumbers obtained in the experiment are planted in the same scheme at a distance of 80+80/2x30 cm.

Phenological observations of cucumber varieties and hybrids showed that the tested cucumber varieties and hybrids did not go through the same stages of growth and development. As a result of the phenological observations, among the varieties and hybrids, it was found that the flowering of the Orzu(super) F₁ and especially the Roki F₁ hybrid was 3-5 days earlier than other varieties.

Table 1. Growth and development stages of tested cucumber varieties and hybrids (2022-2023)

| T/r | Varieties and hybrids | From planting to: | | | Growth period |
|-----|---------------------------|-------------------|--------|---------------|---------------|
| | | Flowering | Tubing | first harvest | |
| 1 | Orzu Super F ₁ | 36 | 37 | 48 | 111-116 |
| 2 | Orzu st | 37 | 41 | 55 | 100-106 |
| 3 | Roki F ₁ | 34 | 37 | 46 | 116-122 |
| 4 | Kros F ₁ | 38 | 44 | 48 | 110-120 |

It was found in the observations that the cucumber blooms one day later than the hybrid dream super f1 standard (Orzu variety) belonging to the selection of the state of Israel. Cucumber tubes are formed early in varieties and hybrids of early flowering cucumbers. Among the tested varieties, the hybrids Roki F₁ and Orzu super F₁, which formed early tubers, formed 4 days earlier than the standard variety according to this indicator.

The first harvest of the short-fruited variety of cucumber, the first harvest took place 55 days after planting the seeds. The first harvest was carried out at the earliest 46 days in the cucumber hybrid Roki F₁, Kross F₁ and Orzu Super F₁ were carried out 48 days after sowing. Therefore, based on the above, it was observed that the first harvest of the tested cucumber varieties was carried out after 46-55 days, and the Roki F₁ hybrid was the earliest.

Conclusions.

1. In the experiments, 4 hybrids of cucumber, Orzu(super) F₁, Roki F₁ and Kross F₁ were planted in the winter-spring season. the result showed that different periods of phenological phases were studied in varieties and hybrids.
2. Cucumber tubers are formed early in varieties and hybrids of early blooming cucumbers. Among the varieties tested, it formed an early tuber. Orzu (super) F₁, Roki F₁, hybrids formed 4 days earlier than the standard varieties according to this indicator, and the other hybrids, especially the Kross F₁ hybrid, formed cucumber tubes earlier than 7 days.
3. In short-fruited varieties of cucumbers, the first harvest was carried out 46-55 days after planting the seeds. The first harvest was carried out at 46 days from the earliest cucumber hybrids, Roki F₁, and 55 days after planting the seeds in the Orzu variety.

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