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TECHNOLOGY FOR CULTIVATING TOMATOES IN THE REGIONS OF THE REPUBLIC OF KARAKALPAKSTAN

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Аннотация: Maqolada Qoraqalpog‘iston Respublikasining sho‘rlangan tuproq va iqlim sharoitida "TMK 22", "Sharq yulduzi" va boshqa nav-namunalar kabi pomidor navlarining o‘sishi, rivojlanishi va hosildorligiga ekish muddatlarining ta’siri o‘rganilgan hamda tadqiqot natijalari keltirilgan..
Калит сўзлар: нав, намуна, схема, муддат, барг, уруғ, барг сони, вариантлар, ҳосил, ҳосилдорлик.

Аннотация: В статье рассматривается влияние различных сроков посадки скороспелых сортов томата «TMK 22», «Sharq yulduzi» и другие сорто-образцы в засолённых почвенно-климатических условиях Республики Каракалпакстан на рост, развитие и урожайность растений, а также представлены результаты исследований.
Ключевые слова: сорт, образец, схема, срок, лист, семя, количество листьев, варианты, урожайность.

Abstract: The article examines the impact of different planting dates on the growth, development, and yield of early-ripening tomato varieties—such as "TMK 22," "Sharq yulduzi," and other accessions—under the saline soil and climatic conditions of the Republic of Karakalpakstan, and presents the research findings..
Keywords: variety, sample, layout, planting date, leaf, seed, number of leaves, variants, yield.

INTRODUCTION. The tomato is considered one of the most important and valuable vegetable crops. Tomatoes are consumed fresh, salted, and pickled. They serve as a vital raw material for the canning and food processing industries. Tomato fruit contains 0,6–6,6% dry matter, 0,95–1,0% protein, 4,0–5,0% sugar, 0,2–0,5% fats, and 0.6% ash. Regarding vitamins, the fruit contains 19–35 mg% Vitamin C 0,2–2 mg% carotene, 0,3–1,6 mg% thiamine (B1), and 1,5–6 mg% riboflavin (B2). In our region, selecting high-yielding, high-quality tomato varieties and refining cultivation technologies are matters of significant importance.

Karakalpakstan Institute of Agriculture and Agrotechnologies, 2025 The Department of Fruit and Vegetable Growing and Melon Growing is conducting research to develop the scientific basis for tomato growing technology in the region.

Goal 30 of the New Uzbekistan Development Strategy of the Republic of Uzbekistan for 2022-2026 specifically identifies “...the cultivation of export-oriented products and the development of fruit and vegetable growing” as one of the priority tasks [1].

According to scientific sources, according to the research of B.J. Azimov, it is advisable to plant tomatoes in the future when growing them from seeds in Uzbekistan. If grown late, the yield and quality of the product will decrease due to the decrease in air temperature in autumn. When growing tomatoes from seeds, less labor is required, and there are no costs for growing seedlings[3]. According to the recommendations of A.Abbosov, R.Khakimov, planting tomatoes with seeds in open ground in a system of 70x25 (30) cm for early and mid-ripening varieties on not too steep fields, 90x25 (30) cm for flat fields, and 90x40 cm for long-stem varieties gives good results. After planting, the field must be irrigated [2].

Seedling cultivation. Seeds of zoned varieties of class 1 with a purity of 98% and a germination rate of at least 85% are sown. 350-400 grams of such seeds are enough for one hectare of seedlings.

Before sowing, the seeds are soaked for 10–12 hours in water or a 0.01–0.05% solution of growth stimulants and microelements, and then treated with TMTD or similar fungicides (4–8 g of preparation per 1 kg of seeds). Seeds prepared in this manner are sown in warm or semi-warm hotbeds or seedling nurseries in early February at a depth of 0.5–1.0 cm.

Materials and methods. The field experiments are conducted with four replications; each variant consists of four rows, with a row length of 10 m. The planting scheme is 70x30 cm. The area of a single variant is 28 m², and the area of a single replication is 112 m². The total experimental area is 448 m². Two early-ripening tomato varieties—'Do‘stlik' and 'Saxiy'—are used. The field experiments assess seed germination and viability, crop yield, and the biochemical composition of the fruit..

The soils in the Republic of Karakalpakstan are saline, and tomato plants do not thrive in such conditions; consequently, the salt is leached from the soil. Tomato plants are best suited to various non-saline soil types that are rich in nutrients and have a light, sandy-loam texture. They grow particularly well and produce high yields in meadow, meadow-grey, and typical grey soils.





Figure 1. Phenological monitoring process from tomato collections

Results and discussion. Phenological observations were conducted on tomato plants in each experimental plot throughout the growing season to determine the onset of flowering (10%), mass flowering (75%), the onset of fruit setting (10%), mass fruit setting (75%), and fruit ripening periods.

Regarding biometric measurements, once the tomato seeds planted in the plots had fully emerged, observations were made on the plants throughout the growing season—specifically on two plants from each experimental variant and planting method within the first and third replication sections Biometric measurements and counting of main parts were carried out twice on 10 numbered plants at the point, during the period of flowering of tomato plants; together with the last harvest of the crop. The measurements took into account the length of the main shoots of the plants and the number of side shoots.

Conclusion. The soils of the irrigated areas of the Republic of Karakalpakstan are saline, therefore, salt-tolerant varieties of tomatoes Do‘stlik and Sakhiy are widely planted. In areas with saline soils, salts in the soil are washed out

beforetomatoes



Figure 2. Samples of tomato varieties grown in the conditions of Karakalpakistan

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