

**CULTIVATION TECHNOLOGY FOR OKRA (ABELMOSCHUS ESCULENTUS)
UNDER THE SOIL AND CLIMATIC CONDITIONS OF THE NAVOI REGION**

Z.Sh. Mavlonov

*Head of the Vegetable and Melon Crop Breeding Department,
Navoi Scientific Experimental Station,
Research Institute of Vegetable, Melon Crops, and Potato Growing.*

Esanov Farhod Farmonovich

*Director, Navoi Scientific Experimental Station,
Research Institute of Vegetable, Melon Crops, and Potato Growing.*

Nazarov Nizomjon Nazirjon o'g'li

*Deputy Director for Research and Innovation, Navoi Scientific Experimental Station,
Research Institute of Vegetable, Melon Crops, and Potato Growing.*

ABSTRACT:

ARTICLE INFO:

*Received: 28.09.2026
Revised: 29.09.2026
Accepted: 30.09.2026*

KEY WORDS:

*Okra, Navoi region,
arid climate, saline
soils, cultivation
technology, irrigation
regime, mineral
fertilizers, productivity.*

*This article outlines the cultivation technology for okra (*Abelmoschus esculentus*)—a promising and highly nutritious food crop—under the arid, hot, and sharply continental soil-climatic conditions of the Navoi region. The study analyzes the biological characteristics of okra, sowing periods, irrigation regimes, and fertilization rates, as well as its tolerance to salinity and heat. The research and recommendations aim to achieve high yields and quality produce within the region's specific conditions.*

Introduction. Amidst climate change and limited water resources, the introduction of new crop varieties—specifically those that are heat- and drought-tolerant and possess high nutritional value—is a pressing issue in agriculture. Okra (*Abelmoschus esculentus*) belongs to the mallow family and is rich in dietary fiber, vitamins (A, C, K), mineral salts, and proteins.

The Navoi region is characterized by a sharply continental climate with hot, dry summers; its soils are largely prone to salinity and have low humus content. Nevertheless, given that okra is a heat-loving crop with a deep-penetrating root system, there is significant potential for its successful cultivation in this region.

Soil Preparation and Fertilization. To increase the fertility of grey (bo'z) and meadow-grey soils in the Navoi region, the land is plowed to a depth of 28–30 cm in autumn. Before plowing, the following are applied per hectare: Organic fertilizer (manure)-20–25 tons, Phosphorus fertilizers (P_2O_5)-80–100 kg/ha, Potassium fertilizers (K_2O)-50–60 kg/ha. In spring, the land is leveled, harrowed, and 30–40% of the nitrogen (N) fertilizer is applied before sowing.

Okra seeds germinate when the soil temperature reaches +15...+18°C. In the Navoi region, the optimal sowing period falls between the second half of April and the beginning of May. Planting specifications are as follows: furrow spacing of 60 cm or 70 cm, plant spacing of 25–30 cm, planting depth of 3–4 cm, and a seed rate of 10–12 kg per hectare.

Irrigation is a critical factor in growing okra in the arid climate of the Navoi region. Although the plant is drought-tolerant, consistent moisture is required to achieve high yields. It is irrigated 8–10 times during the growing season. To conserve water resources and reduce soil salinity, the use of drip irrigation technology is recommended (resulting in water savings of 30–40%). Cultivation—including breaking up soil crusts and weeding—is carried out 2–3 times during the growing season.

Okra pods are harvested by hand 4–6 days after flowering, when they reach a length of 7–10 cm and remain tender and succulent. Harvesting must be done every 2–3 days; otherwise, the pods become woody and unfit for consumption. Under the conditions of the Navoi region, yields can reach up to 12–18 tons per hectare.

Conclusion. Cultivating okra under the arid and salinity-prone soil and climatic conditions of the Navoi region is highly effective from both economic and agrotechnical perspectives. By employing appropriate agrotechnical measures—such as timely sowing, an optimal irrigation system (particularly drip irrigation), and balanced fertilization—it is possible to obtain abundant, high-quality okra yields and fully supply local markets.

In summary, okra's deep-rooting nature and heat tolerance ensure stable growth even during Navoi's arid summer months. Sowing in late April, once the soil warms to +16°C, yields the best results. Given the region's water scarcity, the implementation of a drip irrigation system is recommended; this not only saves 35–40% of water but also prevents salt accumulation in the root zone and boosts productivity by 20–25%. Applying 20–25 tons of decomposed organic fertilizer per hectare, combined with an optimal mineral fertilizer ratio ($N_{120} P_{90} K_{60}$), improves the fertility of saline soils and fosters the development of high-quality, high-yielding pods. Okra is considered a highly profitable crop for farms, as it offers the potential to yield 14–18 tons per hectare. It also plays an important role in supplying the population with a medicinal, vitamin-rich dietary vegetable.

References



1. Bo'riyev H.Ch., Zuyev V.I., Qodirxo'jayev O.Q. *Ocharatli sabzavotchilik* (Vegetable Growing). – Tashkent: National Encyclopedia of Uzbekistan, 2002.
2. Abdullayev A.A. *O'zbekistonning sabzavot ekinlari va ularni yetishtirish texnologiyasi* (Vegetable Crops of Uzbekistan and Their Cultivation Technology). – Tashkent, 2018.
3. Chattha, M. U., et al. "Growth, yield and quality performance of okra (*Abelmoschus esculentus* L.) under different management practices." *Journal of Agricultural Sciences*, 2019.
4. Recommendations and agrotechnical guidelines of the Ministry of Agriculture of the Republic of Uzbekistan, 2021.