UDC 635.64

ORIGIN AND DISTRIBUTION OF THE EDIBLE TOMATO IN THE WORLD AND IN UKRAINE

N. Trykina, lecturer
A. Tkachenko, group AG-25-1
Central Ukrainian National Technical University

Edible tomato (Solanum lycopersicum L.) currently occupies one of the leading places in the structure of world vegetable production. The high taste qualities and unique biochemical composition of its fruits determines its popularity. In particular, tomato fruits are rich in vitamins C, B1, B2, B6, PP, carotenoids, including lycopene, which is a powerful antioxidant and plays an important role in the prevention of cardiovascular and oncological diseases [1, 2]. The annual production of tomatoes in the world exceeds 180 million tons, which emphasizes the strategic importance of this crop within the limits of global food security. The study of the genesis and ways of spreading the tomato across the planet allows us to better understand the mechanisms of its adaptation and the potential for further selection work, as well as to determine the features of growing technologies in specific soil and climate zones.

The homeland of the genus Solanum is a narrow strip of the coast of the Pacific Ocean in South America. Territorially, it covers modern Peru, Ecuador and the northern part of Chile, where small-fruited forms (Solanum pimpinellifolium), which are considered the closest relatives of the cultivated tomato, are still found in the wild [3]. However, the direct "domestication" of the large-fruited form took place much further north - on the territory of Mesoamerica (modern Mexico). It is believed that the Aztec and Mayan tribes "domesticated" the wild plant, which was called "tomatl" ("swollen fruit" in Nahuatl). Mexican "breeders" of ancient times selected the largest and juiciest fruits for cultivation, thus laying the foundation for the modern varietal diversity [4].

The tomato came to Europe in the 16th century after the expeditions of Hernando Cortes, and already in 1544 the Italian botanist Pietro Andrea Mattioli first described this plant, calling it "pomo d'oro" ("golden" apple). This description indicates that the first fruits that reached Europe had a yellow color [5].

For some time, tomatoes were treated with prejudice, considering them poisonous because they belong to the nightshade family, which also includes belladonna and blackthorn. Tomato plants were grown exclusively as ornamental plants to decorate gazebos and gardens. However, the situation changed radically in the 18th century thanks to Italian and Spanish cuisines, which began to use tomatoes en masse in cooking, disproving the myth of their toxicity [6].

Tomatoes entered the territory of Ukraine in the 18th century, and the southern regions - Odesa, Crimea and Mykolaiv - became the initial center of their cultivation. Tomato seeds were imported through the trade ports of the Mediterranean and through the territory of the Balkans. Already in the 1780s, the active cultivation of tomatoes in the gardens of the south was noted. A significant contribution to the popularization of tomato culture was made by the outstanding scientist-agronomist Andriy Bolotov, who proved the possibility of growing tomatoes even in more northern latitudes through the seedling method [7].

During the 19th century, culture gradually adapted to the conditions of the forest-steppe zone. Ukrainian peasants, through popular selection, selected forms resistant to temperature changes and late blight. At the turn of the XIX-XX centuries, the tomato became a full-fledged industrial crop, and Ukraine is one of the leaders in the production of canned vegetables in Eastern Europe [8].

At the current stage of development of the world economy, Ukraine is among the world's leading leaders in the cultivation of tomatoes, in particular in the segment of processing into tomato paste. The main production facilities are concentrated in the Steppe zone, where the level of solar

insolation allows obtaining fruits with a high content of dry matter. However, modern challenges related to global warming and climate change in continental territories, including Ukraine, require the transformation of technologies. The lack of moisture requires the cultivation technology to switch to mandatory drip irrigation, which allows to significantly increase the yield - up to 100-120 t/ha in open ground [9, 10].

A separate promising direction is the development of greenhouse farming. The use of hydroponics and automated microclimate control makes it possible to supply the domestic market with fresh products throughout the year. There is also a tendency to expand the assortment of varieties (hybrids) according to the areas of application: there is an increasing demand for tomatoes of the "cherry" type, cocktail varieties and fruits with atypical colors (black, striped, orange), which have an increased content of anthocyanins and carotene [11]. Scientific institutions of Ukraine, including the Institute of Vegetable and Melon Growing of the National Academy of Sciences, continue their work on the creation of high-yielding varieties adapted to stressful environmental conditions. The preservation of domestic varieties and hybrids of tomatoes and the introduction of the latest biotechnological breeding methods are the key to the sustainable development of the industry, the growth of the level of profitability of crop cultivation, and the strengthening of Ukraine's export positions on the global agri-food market [12].

Reference

1. Болотських О. С. Томати: технологія, сортовивчення, зберігання, переробка: посібник. Харків: Фоліо, 2011. 384 с.
2. Парамонова М. Г. Біохімічний склад плодів томата та його значення для харчування людини. Овочівництво і баштанництво. 2020. Вип. 67. С. 45–52.
3. Помідор. Wikipedia : веб-сайт. URL: https://uk.wikipedia.org/wiki/%D0%9F%D0%BE%D0%BC%D1%96%D0%B4% D0%BE%D1%80 (дата звернення 20.03.2026).
4. Томати: історія, наука, споживання і лікування. Зелена планета Земної: веб-сайт. URL: https://zelena-planeta.ua/tomati-istoriya-nauka-spozhivannya-i-likuvannya (дата звернення 18.03.2026).
5. Чередніченко В. М. Історія овочівництва в Європі. Вісник аграрної науки. 2018. № 4. С. 12-18.
6. Чому помідори вважалися отруйними і гріховними, і Як вдалося позбутися від цих забобонів. Gerold : веб-сайт. URL: https://gerold.lviv.ua/chomu-pomidori-vvazhalisya-otrujnimi-i-grihovnimi-i-yak-vdalosya-pozbutisya-vid-tsih-zaboboniv/ (дата звернення 16.03.2026).
7. Яровий Г. І., Семенчук В. В. Овочівництво: навчальний посібник. Харків: ХНАУ, 2017. 312 с.
8. Сич З. Д. Світові ресурси та селекція томата. Київ: Аграрна наука, 2015. 280 с.
9. Статистичний щорічник України за 2023 рік / за ред. І. Є. Вернера. Київ: Державна служба статистики України, 2024. 450 с.
10. Романов О. В. Сучасні технології зрошення овочевих культур в умовах Півдня України. Зрошуване землеробство. 2022. № 77. С. 102–108.
11. Хареба В. В., Хареба О. В. Тенденції розвитку ринку тепличних овочів в Україні. Економіка АПК. 2021. № 3. С. 34–41.
12. Урожайність та продуктивність гібридів помідорів індетермінантного типу в плівкових теплицях / Г. І. Яровий, В. П. Сєвідов, І. В. Сєвідов. Овочівництво і баштанництво. 2020. Вип. 67. С. 64-72. URL: http://nbuv.gov.ua/UJRN/Oib_2020_67_10 (дата звернення 15.03.2026).