UDC: 635.64:631.523 DOI: https://doi.org/10.53040/ppap2026.74

EVALUATION OF THE AGROBIOLOGICAL PERFORMANCE AND FRUIT QUALITY OF SOME DETERMINATE-GROWTH TOMATO (*Lycopersicum esculentum* L.) VARIETIES UNDER FIELD CONDITIONS

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Tomatoes (*Lycopersicum esculentum* L.) are among the most important vegetable crops cultivated worldwide, and the evaluation of genetic resources under specific pedoclimatic conditions is essential for identifying genotypes with superior agronomic performance and tolerance to biotic stress factors. The aim of this study was to comparatively evaluate the phenological, productive, and qualitative traits, as well as disease incidence, of determinate-growth tomato cultivars grown under open-field conditions in order to identify genotypes with superior agronomic performance and adaptability.

The experiment was conducted in 2025 at the Vegetable Research and Development Station Bacau. The biological material consisted of accessions from the station's germplasm collection and cultivars provided through a research collaboration with the Republic of Moldova, allowing the evaluation of genotypes of different genetic origins. Eight tomato cultivars were included in the study, comprising six cultivars from the Republic of Moldova and two Romanian cultivars.

Throughout the experiment, the main phenological stages were recorded, productivity parameters were determined, fruit morphological characteristics were evaluated, and the incidence of the major diseases occurring under natural field conditions was assessed.

The results revealed significant differences among the analyzed cultivars in terms of phenological development, yield performance, fruit characteristics, and disease incidence, confirming the influence of genetic background on agronomic performance and phytosanitary behavior under open-field conditions. The genotypes exhibiting superior performance and lower disease incidence represent valuable genetic resources for breeding programs and for expanding the assortment of cultivars suitable for open-field cultivation, thereby contributing to the development of more sustainable and resilient production systems.

Keywords: tomato, germplasm, phenology, yield, disease incidence

Acknowledgments. This research was supported by the project Building the Research Center Leg(O)Nest (Contract No. 651/26.03.2025, SMIS Code 335392), co-funded by the European Union and the Romanian Government under the Regio Nord-Est Programme 2021 – 2027. The project is implemented by the North-East Regional Development Agency (ADR Nord-Est) through Call PR/NE/2024/P1/RSO1.1/1/2 – Research, Development and Innovation (RDI) Infrastructures.