

C.16. ADAPTATION OF ITALIAN GRAPE VARIETIES IN THE CONTEXT OF CLIMATE CHANGE IN THE REPUBLIC OF MOLDOVA

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Abstract. The summer of 2025 in the Republic of Moldova was characterized by hot weather and a marked rainfall deficit. The average monthly air temperature in August ranged between +23 and +26 °C, exceeding the long-term average by approximately 3.5–4.5 °C. The rainfall pattern during the growing season varied significantly across the country, with total precipitation being 14–167 mm higher than in 2023–2024. However, in the Soroca district, the area where vines were cultivated and grapes harvested, the amount of precipitation in the 2025 summer season was estimated at approximately 60–150 mm, representing only 30–70% of the multi-year norm, indicating a pronounced rainfall deficit compared to the usual average values for the period. In 2022, a comprehensive analysis of the soil, relief, and climatic conditions specific to the Soroca district was carried out in the northern part of the Republic of Moldova, with the aim of identifying the most suitable Italian grape varieties and optimal planting technologies. Following the pedological and climatic studies carried out, it was found that the land located outside the village of Vărăncău, on the right bank of the Dniester River, at an altitude of approximately 160 m, offers favorable conditions for the development of viticulture. These conditions are mainly determined by the presence of clay soils and a microclimate conducive to grape ripening. Currently, the vineyard comprises nine technical grape varieties, including established varieties such as Pinot Noir, Merlot, Sauvignon, Riesling, and Chardonnay, as well as less common but internationally appreciated Italian varieties such as Albariño, Glera, Nebbiolo, and Sangiovese. All cuttings used were selected and certified in Italy, belonging to the BxRSO4 biological category. The planting density is approximately 5000 cuttings/ha, which contributes to good productivity and efficient management of each row. The take rate in the first year was 98%, an indicator that confirms the quality of the planting material and the accuracy of the work carried out. Also at this stage, individual stakes were installed for each cutting, ensuring the correct development of the young shoots. In the second year of vegetation, the complete vine support system was installed, consisting of Corten metal stakes, renowned for their strength. Starting in the third year, the plantation switched to the simple Guyot training system, a choice that allows for vigorous growth control and the formation of a balanced vine architecture. This strategy was adopted to prevent premature aging of the vines and to obtain grapes with high sugar concentrations and harmonious acidity - essential elements for producing quality dry wines. Throughout the entire process, Corteva treatment schemes were used, which ensured the maintenance of an appropriate level of phytosanitary protection and favored the uniform development of the plantation. The application of these measures contributed to the optimal

development of the cuttings, creating favorable premises for obtaining high production both in terms of quantity and quality.

Keywords: grapes, climate change.