CZU: 633.854.78:581.5(478)

FAVORABLE AREAS FOR SUNFLOWER PRODUCTION IN THE REPUBLIC OF MOLDOVA

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The conservation and integrated management of agricultural areas affected by climate change is a current priority at the level of concerns regarding the implementation of the principles of sustainable agriculture. Climate change is characterized by higher temperatures and reduced amounts of water available for agriculture.

Sunflower, often grown in the southern and eastern regions of Europe, is vulnerable to the direct effect of heat stress and drought during its development cycle, both factors leading to severe yield losses. On the territory of the Republic of Moldova, besides sown areas and used agricultural technologies, the climatic factors also play an important role in harvest obtaining. According to the Fourth National Communication of the Republic of Moldova under the United Nations Framework Convention on Climate Change „*without adaptation measures due to changes in climatic conditions in the most districts of the RM, by the end of the XXI century, the cultivation of sunflower will be impossible or economically not cost effective according to the RCP 8.5 high emission scenario*".

In this study the degree of favorability of the country's territory, depending on the distribution of air temperature and precipitation was analyzed. For this purpose, the statistical analysis of the data regarding sunflower yield for the period of 2003-2021 and its correlation with precipitation and temperature during the same period was carried out using XLSTAT - Excel module. Land favorability modeling for sunflower cultivation was carried out using QGIS - open source software, with complex possibilities for analysis and presentation of the results.

Based on the correlation coefficients between the average yield and the temperature values in April-August, the precipitation in the cold season, as well as those during the growing period in 2003-2021, it was established that conditions in the north of the country are more favorable for sunflower crop than in the southern half. Using the GIS technology maps of the degree of favorability of the territory of the Republic of Moldova for sunflower cultivation, which can be used in order to diminish the negative effects of climate change in the agricultural sector, were obtained.

Keywords: correlations, harvest, precipitation, favorable areas, temperature, sunflower.