CZU: 551.583:631(478)

THE ROLE OF CLIMATE FACTORS IN THE PROCESS OF AGRICULTURAL PRODUCTION IN MOLDOVA

Colibaba Liudmila
Moldova State University, Chisinau, Republic of Moldova
E-mail: licurich@mail.ru

The agricultural sector of the Republic of Moldova is most influenced by climate variability, given the dependence of agriculture on the evolution of weather on those periods of crop vegetation, as well as increasing the frequency, duration and intensity of weather and climate risks in the context of regional climate change. The effects of regional climate change are significant and expressed by changing the main environmental variables (air temperature and precipitation), the impact on agricultural plant development being increasingly evident.

The daily temperature regime is the one that imprints the biological evolution of the cultivated plants and offers a closer image of the reality of the temperature variations that can occur, sometimes reaching extreme values, which constitute climatic risks through negative effects. Thus, the persistence and continuity of positive daily average temperatures between April and September for the territory of the Republic of Moldova, indicate favorable thermal conditions for various annual or perennial crops. At the same time, tropical temperatures, above 30-35°C, impose restrictions on plant development, reducing agricultural production.

Atmospheric precipitation registers relatively low multiannual averages (470-620 mm), this being the main characteristic of the climate in the region. The results of our investigations note that the drought limiting factor that manifests itself on the largest agricultural area of the country, and in this context, data indicate that the most vulnerable agricultural areas are located in the south and center of the republic, except for partial land, located in the meadows of large rivers.

According to the analyzed data, in the last two decades there have been several years with strong and very strong droughts (2003, 2007, 2009, 2012, 2015, 2020), which have led to the decrease of fruit in most agricultural crops, causing significant direct losses, estimated at about $ 1.0-1.25 billion each. Also, analysis of the results obtained on road losses to the main agricultural crops, it was found that in all the dry years of the analyzed decades, sunflower recorded the lowest losses compared to other field crops, due to ecological plasticity and potential, greater adaptation of sunflower to regional climate change.

It is very important that the knowledge and identification of meteorological risks with negative effects on crop stability be based on both early warning systems on dangerous meteorological phenomena and on technological practices applied in relation to the current evolution of climatic conditions and foreseeable future scenarios. Thus, possibilities to adapt to the effects of climate change aim to reduce the impact on the agricultural production process and are mainly based on optimizing the duration of the vegetation period of crops, resistance of genotypes to extreme temperatures (heat, cold / frost), deficits / excesses water in the soil and increase their risk of phytopathogens, ecological plasticity, tolerance to the effects of extreme weather events.

Keywords: agriculture, climate variability, climate risks, droughts, vulnerable areas.