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IMPACT OF CLIMATE CHANGE ON THE SEASONAL ACTIVITY OF *Helicoverpa armigera* (Hübner, 1808)

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Climate change is one of the major factors influencing the development and distribution of phytophagous insects, causing modifications in their phenology, population dynamics, and geographical range. *Helicoverpa armigera* (Hübner, 1808) is one of the most important polyphagous agricultural pests, characterized by a high capacity to adapt to changing environmental conditions. The aim of this study was to assess the impact of climate change on the seasonal activity of *H. armigera* under the conditions of the Republic of Moldova.

The investigations were carried out during the period 2019–2025 on the experimental fields of the Institute of Genetics, Physiology and Plant Protection. Population monitoring was conducted using pheromone traps installed in various agroecosystems, while meteorological data on air temperature and precipitation were used to interpret the peculiarities of seasonal activity. Adult flight dynamics were analyzed in relation to climatic variations occurring throughout the growing season.

The obtained results revealed significant variability in population density among the years of study, closely associated with the climatic characteristics of each season. Elevated temperatures recorded in recent years promoted earlier adult emergence and extended the period of seasonal activity. Under warmer spring conditions, the onset of adult flight was observed earlier compared with seasons characterized by moderate temperatures. Furthermore, increased temperatures contributed to accelerated the development of successive generations and intensified flight activity during the vegetation period. The observed population fluctuations indicate that, in addition to temperature, precipitation patterns and humidity levels play an important role in regulating the dynamics of this species.

In conclusion, climate change has a direct impact on the seasonal activity of *Helicoverpa armigera*, influencing the timing of adult emergence, prolonging the flight period, and facilitating population adaptation to new environmental condi-

tions. Continuous population monitoring and the integration of climatic information into pest forecasting systems are essential for the development of effective crop protection strategies.

Keywords: *Helicoverpa armigera*, climate change, seasonal activity, monitoring, phenology.

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