UDC: 632.937:595.79 DOI: https://doi.org/10.53040/ppap2026.41

STIMULATION OF THE ACTIVITY OF THE ENTOMOPHAGE *Bracon hebetor* UNDER THE INFLUENCE OF KAIROMONAL SUBSTANCES

GLIBICIUC Corina*, https://orcid.org/0009-0005-6238-2440
NASTAS Tudor, https://orcid.org/0000-0002-0322-710X

Moldova State University, Institute of Genetics Physiology and Plant Protection, Chisinau, Republic of Moldova,
**Corresponding e-mail*: *corina.glibiciuc@sti.usm.md*

The intensive application of synthetic insecticides in agroecosystems has generated significant ecological disturbances, manifested through the reduction of functional biodiversity, negative effects on beneficial entomofauna, and the development of resistance to active substances used in pest control. In the context of sustainable agriculture development and the implementation of modern integrated plant protection strategies, biological control methods are gaining particular strategic importance. The entomophage *Bracon hebetor* (Hymenoptera: Braconidae) represents one of the parasitoid species with high biological efficiency in limiting populations of harmful lepidopterans, being extensively used in biological protection programs due to its capacity for rapid host larval localization and parasitism. The aim of the research was to estimate the efficiency of biologically active substances extracted from the excrements and tissues of *Galleria mellonella* larvae on the behavioral activation and parasitism efficiency of the entomophage *Bracon hebetor*.

The experiments were carried out under laboratory conditions to evaluate the kairomonal effect of biologically active substances on females of *Bracon hebetor*. The biological material used included larvae and excrements of the species *Galleria mellonella*. The excrements were collected from larval rearing boxes where the insects were developed on "MERVA" nutritive substrate under conditions of 27±1°C temperature, 65–70% relative humidity, and a 16:8 photoperiod. The excrements were sorted, dehydrated at 40°C for 12 hours, and ground to obtain a fine powder. The extraction of biologically active substances was performed by the maceration method for 72 hours using a 10% ethyl alcohol solution for excrements and distilled water for crushed larvae. The experimental design included six experimental variants and a control variant. In each variant, 10 females of *Bracon hebetor* and 10 third-instar larvae of *Galleria mellonella* were introduced. During monitoring,

the following parameters were evaluated: behavioral activation criteria, host larval detection speed, rate of paralyzed larvae, and parasitism efficiency compared to the control variant.

The obtained results demonstrated that the extracts derived from the excrements of *Galleria mellonella* larvae had the most pronounced effect on the behavioral activation of entomophage females. Thus, in the experimental variant in which host larvae were under the influence of larval excrement extracts, the activation rate of *Bracon hebetor* females reached the maximum value of 100%. The conducted investigations confirmed that the excrements of *Galleria mellonella* larvae contain biologically active substances with kairomonal properties capable of significantly influencing the behavior of the entomophage *Bracon hebetor*. These substances essentially stimulate orientation activity and host larval detection, contributing to the increase of parasitism efficiency. It was demonstrated that the extracts obtained from larval excrements exhibit a superior biological effect compared to extracts from larval tissues, having significant potential for application in the optimization of biological control technologies and in increasing the efficiency of entomophage utilization in plant protection.

Keywords: *Galleria mellonella*, *Bracon hebetor*, excrements, larvae, extract, kairomone.

Acknowledgmentss: The research was carried out within the Subprogram 011103 "Development of ecologically harmless means of reducing the impact of harmful organisms of agricultural crops against the background of climate change", funded by the Ministry of Education and Research of the Republic of Moldova.