



THE EFFECTIVENESS OF THE POACHING PARASITE AGAINST GAMMA TUNLAMI WORMS ON TOMATOES PLANTED IN THE GREENHOUSE

Alimukhamedov S.S.

Candidate of biological sciences, senior researcher
Research Institute of Vegetable, Melon crops and Potato

Article history:		Abstract:
Received:	24 th September 2023	The article brings together the morphological characters of the gamma tunlam and its developmental characteristics and the results obtained for the high biological efficiency of mature genera (females) of the brachial entomophage when applied against <i>Authographa gamma</i> L. worms in ratios of 1:5 and 1: 10.
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INTRODUCTION. *Authographa gamma* L. are considered from common species. It is a mainly plant leaf-feeding species that damages most double-bladed technical and vegetable crops during the summer season [2]. Of the most grown crops in greenhouses, tomatoes and cucumbers are periodically damaged by *Authographa gamma* L. The size (size) of the butterfly, humpback and worm is similar to that of the goose tunlam, but a number of morphological characters distinguish it sharply. In particular, the height of the butterfly comes 4.5-5.0 cm when the wings are written, the front wings are gray or dark brown, and the hindwings are gray-yellow, in the middle of the wings with a wide border, while the Greek letter gamma (γ) is silvery-white speckled with a hue, the name of the pest species ana is placed accordingly [3].

According to our observations in the greenhouse, *Authographa gamma* L. was found to develop by giving 2-3 generations in the tomato crop grown in the greenhouse in the autumn–winter season. *Authographa gamma* L. enters the greenhouse where carrots are planted from an open field and can unexpectedly cause significant damage to crops. If not taken in time, it was observed that within 2-3 nights, the *Authographa gamma* L. worms completely destroy the leaves of plants. Because the greenhouse condition makes itself an hos biotope, natural cushions do little harm to *Authographa gamma* L. worms, despite the fact that the worms live an open life. That is why it is necessary to immediately carry out countermeasures measures when the worms of the *Authographa gamma* L. begin to be detected in the tomato plant [1].

RESULTS. Taking into account the above, our further experiment was aimed at determining the effectiveness of the use of a poaching parasite against *Authographa gamma* L. worms in a tomato plant in greenhouse conditions. Since the fruits of tomatoes grown in greenhouses are eaten directly, the use of a safe, biological method is one of the most important tasks. For this purpose, we distributed mature breeds of the parasite bracon (*Bracon hebetor* Say), bred in laboratories against *Authographa gamma* L. worms, in a greenhouse where the foci of *Authographa gamma* L. worms were identified (a tomato crop that went into a mixed crop) in a ratio of 1:5, 1:10 and 1:15 of the bracon to the worms (table 1).

Table 1

The biological effectiveness of the *Bracon kushanda* against
Authographa gamma L. worms
Small field experiment RIVMCP

Variants	Average number of worms in 100 plants, pcs.			Efficiency, %		
	Before conducting an experiment	In the days following the date of the experiment				
		5	10	15	5	10

The poach was distributed in a 1:5 ratio	35,6	13,4	5,5	3,9	69,0	79,5	84,8
The poach was distributed in a ratio of 1:10	34,7	17,7	10,2	7,4	57,9	61,1	70,6
The poach was distributed in a ratio of 1:15	44,5	23,5	16,5	14,1	56,5	50,9	56,2
Control (unprotected)	36,7	44,5	27,7	26,5	-	-	-

LSD₀₅=

3,2

As can be seen from the table, when Bracon parasite was administered against *Authographa gamma* L. worm in a 1:15 ratio: 50.9% on Day 10, 56% biological efficacy on Day 15; 10%-79.5% biological efficacy was achieved on Day 10, 61.1% on Day 15, 70.6% on Day 1:5, and 84.8% on Day 15. Hence, the expected result is achieved due to the high biological efficiency when applying mature breeds (females) of the brachial entomophage against *Authographa gamma* L. worms in proportions of 1:5 and 1:10.

CONCLUSION. When growing a pure organic product from vegetable crops, the use of the poaching parasite against *Authographa gamma* L. worms in proportions 1:5 and 1:10 is considered one of the most important factors that are harmless to the environment and productivity.

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