

# EFFICACY OF BIOSLIP BW MICROBIOLOGICAL PREPARATION AGAINST HELIOTHIS ARMIGERA Hb IN BEANS

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**Abstract.** This article reflects the results of scientific research conducted to study the effectiveness of the Bioslip BW drug, which was used in different doses against cotton bollworm in beans.

**Key words.** biologically clean, microbiological preparation, bean, *Heliothis armigera* Hb, biological efficiency.

**Introduction.** Although the chemical method is widely used in the world experience in the fight against pest insects and other arthropods, it was found that such insect-acaricides do not have sufficiently selective and effective properties, that is, pesticides kill biological agents, primarily pests. destroys entomophagous insects, insectivorous birds, etc., which are natural predators that prevent their mass development

Increasing the productivity of cultivated crops and raising their quality is one of the main factors in the development of agricultural culture. In order to solve these problems, science and production experience require the development of ways to increase the efficiency of protection of plants from harmful insects, less pollution of the environment, restore the biological and ecological balance in nature, and their wide implementation in farms.

Protecting the health of the population and protecting the environment from the harmful effects of pesticides is one of the most urgent tasks today (SH.T. Khojaev 2018). Currently, biological methods are widely used in the fight against agricultural pests, because this method is intended to protect human health and the environment, and various combinations of microbial preparations and harmful insects are used. (G.A. Turdiyeva, H. Agzamova 2020)

In the protection of agricultural crops from pests, the use of microbial drugs that cause diseases in insects is a part of biological control. Microbiological preparations are biological means used in the fight against agricultural pests and protection of plants from diseases. These types of preparations contain fungi, bacteria or viruses as active substances. (Sh.T.Khojaev 2004)

In recent years, fungal preparations with microbial insecticide properties have been widely used in the countries of the world.

Boveria (Beauveria) series. Mycelium is white or pale. consists of septate and branched hyphae, conidiophores (phialides) are bottle-shaped. a few fuse with their bases to form a star. Conidia are unicellular, spherical or egg-shaped. colorless, sometimes, when many spores are together, it has a light color. The name of the disease caused by boveria in insects is derived from the French phrase "candied fruit" and is called muscardina. Boveria bassiana (B. bassiana) is the most common among the representatives of the category. This fungus protects more than 170 species of the families of ergots, semi-rigids, hardy-wings, nymphs and hymenoptera, as well as some mites, including the important pests:

damages the long nose, apple moth, apple fruit borer, corn butterfly, autumn moth and others. The parasite infects insect larvae, pupae, and adult stages. The body of the dead insect shrinks, twists, and is covered with white, flour-like feathers formed from the fungus body and conidia. Mycelium and spores are preserved not only in the bodies of infected insects, but also in plant residues, and are spread by insects that are resistant to boveria. The technology of preparation of boverin drug was developed on the basis of this causative agent. Another practically important species belonging to this group is the thin boveria (B. tenella). Unlike the previous species, its conidia are elongated and have a single mycelium so much fluff.

Microbiological preparations differ from chemical preparations in every way and have many advantages. These drugs are distinguished by their ability to harm warm-blooded animals, beneficial insects found in nature, spread disease among pests, affect future generations of insects, and have other properties.

Therefore, biopreparations are not only biologically effective in the fight against pests in agriculture, but also have ecological and social effectiveness, which are the future of the microbiological method.

It is important to develop safe pesticides to protect the food bean crop from pests. (G.A. Turdiyeva 2023)

In 2022-2023, in order to determine the biological effectiveness of the BIOSLIP BW biopreparation against the first generation of the cotton bollworm, field experiments were conducted in 4 variants and 4 times at the scientific experimental station of "Vegetables, field crops and potato growing ITI Andijan", Andijan district, Andijan region. The experiment was carried out during the period of mass development of the 1st generation of cotton tunlam in the "Red bean" variety.

**Subject to placement of experience options:**

1. Control - the pest was not treated with the drug
2. As a template Avaunt15% e.c. 0.45 liters of the drug per hectare were processed.
3. BIOSLIP BW preparation was processed at the rate of 2.0 l/ha per hectare.
4. BIOSLIP BW was treated at the rate of 2.5 l/ha per hectare.

The average air temperature on the days of the field experiment was 25-27°C, the average relative humidity was 45-52%.

In May-June 2022, the weather created favorable conditions for the development of cotton cultivation in most regions. On May 12, the cotton tunlam butterfly started laying eggs in the experimental farm fields. Mass laying began on May 18-19. On May 25, calculations were made and in the evening, in the presence of small young worms, 300 liters of working liquid per hectare were applied to the bean crop with the help of a hand sprayer.

As can be seen from the data of Table 1, in experimental variants, 7.3-10.6 I-II young worms per 100 bean plants; middle-aged 4.6-3.3 units; and older youth made 2.1-2.4 units.

It is known from the biological condition of the cotton plant that the main part of young worms feeds and develops on the newly grown combs and pods of the plant. Therefore, the use of biological preparations for young children is highly effective (Sh.T. Khojaev 2004).

**Table 1**

**Biological effectiveness of the biological preparation BIOSLIP BW against *Heliothis armigera* Hb in the bean crop (Field experiment, Andijan region, Vegetables, poly crops and potato growing ITI in bean fields, May-June, 2021-2022)**

№	Options	Drug consumption rate liter, kg/ha	The average amount of cotton fiber in 100 bean plants, pcs				Total (piece)
			Before spraying the medicine				
			Egg	Worm			
				Including			
I-II	III-IV	V-VI					
1.	Control (idle)	-	2,6	7.6	4.3	1.4	13.3
2.	Avaunt15% (template) em.k.	0,45 l/ga	1,3	10.6	4.3	2.7	17.6
3.	<i>BIOSLIP BW</i>	2l/ga	3,0	7.3	4.6	2.1	14.0
4.	<i>BIOSLIP BW</i>	2,5l/ga	2.3	10.6	3.3	2,4	16.3

**Table 2**

**Biological effectiveness of BIOSLIP BW biologic preparation against *Heliothis armigera* Hb (goza tunlami) in bean crop (Field experiment, Andijan region, vegetable, field crops and potato growing ITI Andijan scientific experimental station in bean fields, May-June, 2018-2019)**

№	Options	Drug consumption rate liter, kg/ha	The average amount of cotton fiber in 100 bean plants, pcs			Efficacy is calculated as a percentage of control		
			Number of worms in days after spraying					
			The number of worms before	3	7	14	3	7

			processing						
1.	Control (idle)	-	13,3	15,0	18,3	17,0	-	-	-
2.	Avaunt15% (andoza)em.k.	0,45 l/ga	17,6	10,0	4,3	2,0	49,6	82,2	91,1
3.	<i>BIOSLIP BW</i>	2 l/ga	14,0	10,3	9,3	6,3	34,8	51,7	64,8
4.	<i>BIOSLIP BW</i>	2,5 l/ga	16,3	10,0	7,0	3,0	45,6	68,7	85,5

The results obtained from the fields of the scientific experimental station of the Andijan ITI of vegetable crops and potato production showed that the biological preparation BIOSLIP BW used against the 1st generation of the cotton bollworm in the bean crop was applied in the amount of 2-2.5 kg per hectare, and the working liquid was calculated at 300 liters per hectare. 34.8-45.6% on the 3rd day of calculation in cultivated areas; 51.7-68.7% on the 7th day; On the 14th day, it was 64.8-85.5% biological efficiency. The chemical preparation used as a template is Avaunt 15% em.c. 49.6 on days 3, 7, 14 when treated at the rate of 0.45 liters per hectare; 82.2; 91.1% effective. In the control variant, the number of worms increased from 13.3 to 18.3.

In the conducted scientific research, it was found that in the fight against *Heliothis armigera* Hb in the bean crop, biopreparation BIOSLIP BW not only reduces the number of worms, but also protects the bean crop from pests, maintains the balance of the ecological situation in nature, and ensures the cleanliness of the environment.

### References

1. Methodological guidelines for testing insecticides, acaricides, biologically active substances and fungicides (collection of articles, edited by Sh.T. Khojaev). - Tashkent: State Chemical Commission, 2004.-103 p.
2. G.A.Turdiyeva "Environmental control measures against pests of leguminous crops in the conditions of the Fergana Valley" Recommendation. Andijan 2023.
3. Sh.T.Khojaev. The basics of agrotoxicology and the rules of conducting research. Tashkent. 2018.