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BIOECOLOGY AND HARM OF SUCKING PESTS FOUND IN THE VEGETABLE CROP OF BAMIYA (HIBISCUS ESCULENTUS L.).

Abstract. The article provides information on the bioecology and harmfulness of sucking pests found in the vegetable crop of bamiya (hibiscus esculentus l). To assess the effectiveness of chemical agents on a scientific basis, bioindices were determined in the fields. Such criteria as the percentage of pest reduction, the degree of plant damage, and the increase in yield were taken into account. Experiments were conducted in 2023-2024 in the educational and scientific experimental farm of the Tashkent State Agrarian University, Kibray district, Tashkent region. (0.15; 0.2-0.25 l/ha), Karache duo 25% s.p. (0.15; 0.2-0.25 l/ha), and in the standard variant – Karatoshans, em.c. (0.2 l/ha) and against the cotton bollworm, proclaim gold 5% w.g. (0.15; 0.2-0.25 kg/ha), emaben, 5% s.d.g. (0.3; 0.35-0.4 kg/ha) and in the standard variant – emaben extra 10% c. (0.2 kg/ha) were tested.

Keywords: Hibiscus esculentus l., pest, new variety, chemical agent, preparation, yield, sucker, bioecology, protection

Log in. Introduction of non-traditional vegetable species is one of the important directions in the process of diversification of vegetable growing in the world. The introduction of such vegetable crops as basil (Hibiscus esculentus L.) in the conditions of the republic will not only provide the domestic market with high-quality and biologically valuable products, but also create a basis for the production of competitive products in international markets. Today, throughout the world, the vegetable crop of bamiya (Hibiscus esculentus L.) is grown on an area of more than 120 thousand hectares. In recent years, large-scale reforms have been carried out in our country to increase the income of dehkan and farmer households through the rapid growth of the population, ensuring food security, fully meeting the needs for vegetable products, diversifying agriculture, rational use of available land and water resources, and growing export-oriented products.

It is promising to introduce varieties suitable for the soil and climatic conditions of our country, with high yields, resistance to abiotic and biotic stress factors, tolerance to the main diseases and pests, as well as high biological value. At the same time, it is important to create new varieties resistant to pests, conduct breeding processes on a scientific basis, and develop modern agricultural technologies, expand the range of vegetable crops, which are the basis of healthy nutrition in our country, strengthen public health, and increase export potential.

Materials and Methods. Research is carried out using entomological calculations and observations using G.Ya.Bey-Bienko, L.A.Kopaneva determinants, based on the methods of K.Fasulati in determining the density, occurrence, and dominance of pests. The degree of insect damage was determined according to the method of V.I. Tansky. Agrotoxicological experiments were conducted according to the method of K.A.Gar and Sh.T.Khodzhaev. The obtained results were subjected to mathematical and statistical analysis using the methods of V.I.Terekhov, S.P.Afonin, and B.A.Dospekhov.

The economic efficiency of the applied methods was calculated based on the A.F.Chenkin method. Pest counting was carried out before spraying and on days 1, 3, 7, 14, and 21 after spraying. The biological effectiveness of chemical preparations is calculated using the Abbott formula (Gar, 1925).

Results and Discussion. In recent years, the use of selective insecticides against pests in bamiya has been yielding effective results. For example, agents such as spinosad, emamectin benzoate, and indoxacarb are considered safer than beneficial entomofauna than broad-spectrum poisons. Therefore, they occupy a priority place in the integrated pest control (IPM) system. In addition, the principle of rotation should be applied when using chemical agents, that is, one should not use insecticides of the same group several times in one season.

To assess the effectiveness of chemical agents on a scientific basis, bioindices are determined in the fields. For example, such criteria as the percentage of pest reduction, the degree of plant damage, and the increase in yield are taken into account. Experiments show that with the rational use of chemicals, the yield of bamiya can increase by 25-40%. In particular, if chemical agents are not used against serious pests such as fruit worms and moths, up to 50% of the harvest can be lost.

Chemical agents against pests have high effectiveness and play an important role in protecting the crop. However, it is necessary to apply them rationally and scientifically, to combine them with other methods of struggle. Only then will they maintain their effectiveness, prevent the emergence of pest resistance, and ensure the ecological purity of the product. In 2023-2024, in the educational and scientific experimental farm of the Tashkent State Agrarian University in the Kibray district of the Tashkent region, against the melon aphid found on the bamiya plant, ENDJEO 24.7% s.c. (0.15; 0.2-0.25 l/ha), KARACHE DUO 25% s.p. (0.15; 0.2-0.25 l/ha), and in the standard variant KARATOSHANS, em.c. (0.2 l/ha) and against the cotton bollworm Proclaim Gold 5% s.d.g. (0.15; 0.2-0.25 kg/ha), EMABEN, 5% s.d.g. (0.3; 0.35-0.4 kg/ha) and in the standard variant EMABEN EXTRA 10% c. (0.2 kg/ha).

In the control, the biological effectiveness was 62.3%, 65.7%, and 66.4% on day 3, and 80.7%, 82.3%, and 85.9% on day 21, respectively, in the variants with the use of the drug ENDJEO 24.7% sus.k. at a rate of 0.15, 0.2, and 0.25 l/ha (Table 1). In the variants with the use of the preparation KARACHE DUO 25% w.p. at a rate of 0.15, 0.2, and 0.25 l/ha, the biological effectiveness compared to the control by day 3 was 59.7%, 61.9%, and 67.1%, and by day 21 this indicator was 79.8%, 81.7%, and 85.4%.

Biological effectiveness of the preparations used against the melon aphid-Aphis gossupi *Aphis gossupi* G. in the agrobiocenosis of the bean vegetable plant
(Educational and Scientific Experimental Farm of Tashkent State Agrarian University, 2023-2024)

No	Options	Amount of medication consumption, l/ha	Average number of pests per tree,					Biological effectiveness, by days,%			
			before processing	days after processing							
				3.	7.	14.	21.	3.	7.	14.	21.
1.	ENJEO 24.7% sus.k. *(Lambdacyhalothrin + Thiametoxam)*	0.15	12.9	5.2	4.6	3.8	2.9	62.3	67.4	73.8	80.7
		0.2	13.1	4.8	3.6.	3.2	2.7	65.7	74.8	78.3	82.3
		0.25	12.8	4.6	3.3	2.9	2.1	66.4	76.4	79.8	85.9
2.	KARACHE PRAYER 25% w.p. *(Lambdacyhalothrin + Acetamipride)*	0.15	13.3	5.6	4.8	4.1	3.1	59.7	66.9	72.5	79.8
		0.2	12.8	5.1	4.4	3.6.	2.7	61.9	68.5	74.9	81.7
		0.25	13.1	4.5	3.1	2.8	2.2	67.1	78.3	80.9	85.4
3.	KARATOSHANS, e.g. *(Lambdacyhalothrin) (standard)*	0.2	13.2	5.9	5.5	4.4	3.9	58.2	61.9	70.3	74.6
4.	Control (unprocessed)	-	12.7	13.6	13.9	14.3	14.8	-	-	-	-

When using the KARATOSHANS, em.c. preparation at a rate of 0.2 l/ha in the standard variant, the biological effectiveness compared to the control was 58.2% on the 3rd day, and by the 21st day it was 74.6%.

Conclusion.

Agrotechnical measures against the main pests of the desert are the main means of obtaining a high and quality harvest, maintaining ecological balance, and ensuring the stability of the agricultural system. With timely implementation of such measures as crop rotation, deep plowing, weed control, fertilization, proper organization of irrigation, regulation of sowing dates and density,

and elimination of post-harvest residues, the natural resistance of bamiya to pests increases, and the volume and quality of the harvest improve. Consequently, the effective application of agrotechnical measures remains one of the main directions of pest control in the cultivation of bamiya.

When using the lacewing entomophage against the melon aphid in a 1:5 ratio, the biological effectiveness compared to the control was 66.3% on the 3rd day of observation, and by the 21st day this indicator was 84.6%.

According to the results of scientific research on the use of the Bracon entomophage against the cotton bollworm, when using the Bracon entomophage in a ratio of 1:5, the effectiveness on the 3rd day was 76.3% compared to the control.

By the 21st day, it reached 86.1%.

Prestige Plus BA-3000EA/ml e.c. preparation against melon aphid 1.0; When using at a rate of 1.5-2.0 l/ha on the 3rd day of accounting, the biological effectiveness compared to the control was 57.1%, 58.8%, and 63.4%, respectively, and the highest indicator was 75.7%, 82.5%, and 84.1% on the 14th day.

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