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Studying The Effectiveness Of The Drug Meth Killer 90% S.P. Uzbekistan In The Fight Against The Cotton Bowl On The Cotton Plant

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Annotation: Meth Killer 90% s.p. It turned out to be an effective means in the fight against cotton bollworm at a rate of 0.3-0.4 kg/ha on cotton crops.
At the specified consumption rate, the drug Met Killer 90% s.p. does not have a toxic effect on the growth and development of plants.
Based on the results of the industrial field test, we believe that it is necessary to include the drug Met Killer 90% s.p. in the “List of ...” of the Republic of Uzbekistan. against cotton bollworm the norm is 0.3-0.4 kg/ha on cotton crops.
Keywords: X buckthorn moth , species , habitat, biocenosis, natural balance, environment, advantage, Met Killer 90% s.p. , efficiency.

Introduction

At the current stage of development of agricultural production in the Republic of Uzbekistan, increasing the yield of agricultural crops, including cotton, is very important.

However, cotton, like many agricultural crops, is susceptible to numerous pests, the most dangerous of which are the cotton bollworm, spider mites, and bugs. Several control methods are used. It should be noted that chemical control is the most effective, although it has several drawbacks. To minimize its negative consequences, a competent approach is necessary. One solution is to select the most effective, less toxic, and faster-acting products. One such important factor is the control of agricultural pests. Pests common in cotton crops cause significant damage to plant development and, as a result, lead to a decrease in the raw cotton yield.

The most common pests of cotton are spider mites, bugs, aphids and cotton bollworms.

Chemical plant protection products continue to be used in conjunction with agronomic and biological control methods to combat this pest. However, the known shortcomings of these insecticides compel field specialists and scientists to continue developing, selecting, and implementing new, highly effective products that better meet modern environmental requirements. Expanding the range of insecticides is also driven by the need to overcome resistance that develops in specific pest populations with prolonged use of the same products, as well as to reduce the cost of treating cotton crops.

Literature Review

Cotton is one of the crops most susceptible to invertebrate attacks. As early as 1931, Professor V.V. Yakhontov described an incomplete global fauna of invertebrates that feed on cotton, including 772 species, 751 of which belong to the insect class.

In the former Soviet Union, V.V. Yakhontov recorded 177 species of insects and mites on cotton crops, while A.I. Petrov recorded 219 species. This is a consequence not only of climatic conditions but also of significant quarantine measures preventing the introduction of harmful organisms.

Only a few of the listed species cause serious harm – about 10 species, but those that are considered secondary in terms of harmfulness can, under particularly favorable conditions, cause significant damage to this crop.

Cotton bollworm (*Heliothis armigera* Hbn .) The cotton bollworm distribution zones in Uzbekistan are the Surkhandarya, Fergana, Andijan, Namangan regions, the most humid areas of the Kashkadarya, Tashkent regions and the KSASR. (K.I. Larchenko, S.B. Zapivalova, 1973).

Up to four generations can develop within a year. They overwinter as pupae in the soil at a depth of 5–6 cm 18 см. The butterfly's extended flight period results in the developmental phases of one generation overlapping those of another.

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Mass oviposition usually occurs between June 15 and 20 (Tashkent region). Most eggs are laid on the upper side of leaves (Alimdzhanov R.A., 1986).

On cotton plants, young instar caterpillars damage the apical leaves at the growing points, first eating away at the interveinal grooves and later gnawing through the leaves. However, starting in the second instar, they prefer reproductive organs: buds, ovaries, and young bolls. Later instar caterpillars burrow inside the bolls, feeding on the seeds until they harden.

A number of researchers have studied the harmfulness of the cotton bollworm, including V.I. Tansky (1989), who made a particularly significant contribution. Specifically, he found that it can damage between 6 and 22 reproductive organs of the cotton plant. Control methods for the cotton bollworm remain a priority. Scientifically based, comprehensive measures are being developed against it, incorporating all known plant protection methods, including chemical ones (Khodzhaev, 1991, 1995).

Place And Methodology Of The Research

The drug Met Killer 90% sp. OOO " Agro " Beck Biotech » Uzbekistan is an insecticide and is recommended for testing in cotton pest control. The insecticide was tested in the fields of the Large-plot Experiment, farm " Ozodbek Doston Bobobek ." Akaltynsky district of Syrdarya region. The experimental design included the test drug Met Killer 90% s.p. at a rate of 0.3-0.4 kg/ha against cotton bollworm The drug Methomyl 90% s.p. was used as a standard. 0.4 kg/ ha , as well as a control variant without treatment. Spraying was carried out using a K-90 motor sprayer with a calculated spray rate of 300 l/ha. The plot size was 0,5 rathree replicates for each variant.

The treatment was carried out in the morning hours, when the temperature was no higher than 25°C and the wind speed was 1.5 m/sec. The experimental methodology, subsequent records, and calculation of biological effectiveness were carried out (Methodological guidelines ...) (2004) approved by the State Chemical Commission of the Republic of Uzbekistan. The calculation of biological effectiveness was carried out using Abbott's formula (1925).

Test Results

" Ozodbek Doston Bobobek " Akaltynsky district of Syrdarya region in early June 2023 during the cotton growing season. Results of studies on the biological efficacy of Met Killer 90% s.p. against cotton bollworm. The results for the application rate of 0.3-0.4 kg/ha are presented in the table. It can be seen that at the application rate of 0.3-0.4 kg/ha on the 7th day after treatment, the biological effectiveness against the cotton bollworm was 88.2-91.5%. This was higher than the reference (87.5 %) option (Table 1). Under control, the number of pests was steadily increasing.

Thus, the results of the study show that the drug Met Killer 90% s.p. at a rate of 0.3-0.4 kg/ha against cotton bollworm can be used on cotton crops.

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Table 1

The biological effectiveness of the drug Met Killer is 90% s.p. against cotton bollworm on cotton plants. Syrdarya region, Akaltyn district, farm named after " Ozodbek Doston Bobobek ", large-scale experiment, Motor, sprayer, working fluid consumption 300 l/ha, 05/26/2023.

No.	Options	Consumption rate of the drug , kg /ha	Number of cotton bollworms per 100 plants before processing, copy			Number of cutworms after treatment on 100 plants (copy)								
						Day 3			Day 7			14th day		
			1-3 age	4-6 age	Total	1-3 ages	4-6 years old	Total	1-3 ages	4-6 years old	Total	1-3 ages	4-6 years old	Total
1.	Meth Killer 90% s.p.	0, 3	13,4	10, 7	24, 1	1, 9	2 , 2	4 , 4	1, 5	2 , 2	3 , 3	2, 7	2, 9	5 , 6
2.	Meth Killer 90% s.p.	0, 4	14,1	11 , 2	25.3	1, 6	1, 9	3 , 5	1.2	1.2	2.5	2, 5	2, 7	5, 2
3.	Metamyl 90% s.p. (standard)	0, 4	14, 7	11. 5	26 , 2	2, 3	2 , 8	5 , 1	2 , 1	2 , 5	3.8	3.2	3.3	6 , 5
4.	Control (no treatment)	without processing	13. 5	10. 9	24.4	14. 1	12.3	26, 4	14.9	13, 5	28 , 4	15.2	14, 4	29.6
Biological effectiveness (%)														
1.	Meth Killer 90% s.p.	0, 3	13,4	10, 7	24, 1	86 , 4	81.7	83.1	89, 8	83 , 3	88 , 2	82,1	79.4	80 , 8
2.	Meth Killer 90% s.p.	0.4	14,1	11 , 2	25.3	89 , 1	84 , 9	87.2	92, 2	91, 3	91 , 5	86, 1	85 , 8	83 , 0
3.	Metamyl 90% s.p. (standard)	0.4	14, 7	11. 5	26 , 2	85, 0	78 , 4	82,0	87, 0	72.4	87 , 5	80 , 6	78 , 8	79 , 5
4.	Control (no treatment)	without processing	13. 5	10. 9	24.4	-	-	-	-	-	-	-	-	-

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Conclusions

1. Meth Killer 90% s.p. It turned out to be an effective means in the fight against cotton bollworm at a rate of 0.3-0.4 kg/ha on cotton crops.
2. At the specified consumption rate, the drug Met Killer 90% s.p. does not have a toxic effect on the growth and development of plants.
3. Based on the results of the industrial field test, we believe that it is necessary to include the drug Met Killer 90% s.p. in the “List of ...” of the Republic of Uzbekistan. against cotton bollworm the norm is 0.3-0.4 kg/ha on cotton crops.

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