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Article



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EFFECTIVENESS OF CHEMICAL PESTICIDES AGAINST LEAF-EATING PESTS IN POPLAR TREES

Abstract: In the article, studies were carried out to determine the biological effectiveness of chemical against the main pests of poplar leaf beetles.

Chemical preparations such as Karbofos, 50% em.c, Imitrin 20% em.c, Plammectin 1.8% em.c. were used in the studies. Biological efficiency of 69.8-93.6% was achieved, and most a highly effective result was achieved with the use of Karbofos, 50% em.c, Imitrin, 20% em.c. and these preparations are recommended for use in production.

Key words: Poplar, plant protection, pests, control, preparations, insecticides. biological efficiency.

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Introduction

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In the conditions of our republic, pests belonging to the leaf-eating family cause serious damage in poplar groves. Studying the bioecology of these pests and conducting control measures during their most favorable period will give good results. One of the main factors in increasing the productivity of landscape trees is timely, high-quality protection against diseases and pests [1,2].

The poplar tree is distinguished by its fast growth (3-4 meters per year), abundant wood production, good physical and mechanical properties of wood, quick and easy reproduction, possibility of growing in all our regions (wetlands) and wide distribution, high height and beauty. it differs sharply from tree species [3,4].

Today, it is observed that poplar seedlings are damaged by more than 10 types of pests, and poplar seedlings die when they are young.

Based on the above problems, in order to study the types of pests that damage poplar young shoots, research was conducted in the forestry farms of the

Tashkent region in 2019-2022. As a result of the research, it was noted that the main pests that affect poplar are those belonging to the family of leaf eaters.

Based on the received information, the number of economic hazards of pests for 2019-2020 was determined and a plan to combat them was drawn up. Depending on the average IXS (economic hazard number) level in production, chemical treatment against pests was determined. Therefore, in order to use effective means of protection against the poplar leaf-eater, we conducted research in the farmers and forest farms specializing in poplar cultivation in the Koson, Shakhrisabz districts of Kashkadarya region. During our observations, in order to find out the number of wintering imagoes of poplar trees during the vegetation period, in the experimental plot, 10 model trees with a width of 3-5 cm were attached to the branch with adhesive tape (scotch tape) turned upside down. The adhesive tape was replaced with a new one every two days. The number of poplar leafhoppers stuck to the duct tape on the observed branch of each model tree was determined. When the

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eggs are laid and they start to hatch, the most favorable time to apply chemicals is determined.

In the experiment, among the chemical preparations against leaf eaters, Karbofos, 50% by weight - 1.0-2.0 l/ha, Imitrin, 20% by weight - 0.3-0.5

l/ha and Plarmectin 1.8% em.k.-0.25 l/ha was used in the amount of consumption. The use of chemical preparations against leaf eaters was carried out according to the methodological manuals published by Sh.T. Khojaev.



Picture-1. Experience in the testing of chemical agents rodents.

Calculations were carried out on the 7th, 14th and 21st. Biological efficacy was calculated using the Abbott formula.

The data presented in the table show that the tested preparations are effective against leaf eaters.

In the first option, Karbofos, 50% em.k. When the drug is used against leaf eaters in the amount of - 1.0-2.0 l/ha, the highest efficiency of pest control is

88.4-89.9%, biological efficiency when treated with Imitrin, 20% em.k., drug is 87, 6-93.6%, the highest efficiency was 69.8% when treated with the drug Plarmectin 1.8%. (Table 1).

The rates of use of drugs used against poplar leafhoppers that were highly effective in small field experiments were selected and retested in the form of production experiments in large areas.

Table 1. Biological effect of preparations used against leaf eaters (Kashkadarya region, Shakhrisabz district, 2021-2022)

Options	Prep. amount of consumption, kg/ha,	On average, 15 cm., the number of the pest in the rod, ecz								Biological efficiency in % days		
		Until the drug is sprayed		Препарат сепилгандан кейин, ҳисоб кунлари бўйича								
		Alive	That he died	Alive			Died					
				7	14	21	7	14	21	7	14	21
Karbofos, 50% em.k.,	1,0	80,0		17,2	11,7	10,6	69,1	72,6	74,7	79,3	86,6	88,4
	2,0	81,2	0	15,4	9,9	8,9	63,6	69,1	70,1	80,9	88,4	89,9
Imitrin, 20% em.k.	0,3	77,7	0	18,1	14,2	9,8	59,6	67,5	67,9	76,7	82,9	87,6
	0,5	81,3	1	11,3	8,6	5,8	69,9	72,6	75,4	86,4	90,1	93,6
Plarmectin 1.8% em.k.	0,25	78,0	1	30,4	29,1	26,1	46,6	47,9	50,9	61,5	64,7	69,8
Control	-	81,0	0	83,0	86,8	90,9	-	-	-	6,6	6,6	6,1

Summing up from the results of scientific research, among the chemical preparations tested against leaf-eaters in poplars, Karbofos, 50% e.v. It was noted that it was effective. It is recommended to

use Karbofos, 50% em.c., Imitrin, 20% em.c., drugs from the above mentioned chemical agents in the specified consumption rate.

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References:

- Ozolin, G., Shamsiev, K., & Stipinskij, V. (1992). *Ўzbekiston teraklari*. (p.115). Toshkent.
- Xamzaev, A.H., Botman, E.K., Jeshankulov, B.I., Muhsimov, N.P., Huzhaev, O.T., & Ruzmetovlar, U.I. (2022). *Terak kŷchatlarini etishtirish, kalamchalarini tajjorlash, parvarishlash va kasallik-zararkunandalardan ximoja kilish bŷjjicha ilmiy tavsijanoma*. Toshkent.
- Kajimov, A.K., & Berdiev, Je.T. (2009). *Dendrologija*. (p.211). Toshkent.
- Chen, Y., Han, Y. F., Li, L., Tian, Y. C., & Nie, S. J. (1995). Study on the plant regeneration from *Populus deltoides* explant transformation with Bt. toxin gene. *Sci. Silv. Sin.* 31, 97-103.
- Way, M. J., Smith, P. M., & Hopkins, B. (1951). The selection and rearing of leaf-eating insects for use as test subjects in the study of insecticides. *Bulletin of Entomological Research*, 42(2), 331-354.
- Way, M. J. (1949). A technique for determining the stomach poison effect of insecticides used against leaf-eating insects. *Annals of Applied Biology*, 36(1), 86-112.
- Indiati, S. W. (2014). The use of sugar apple and neem extract to control leaf eating pest on soybean. *Journal of Experimental Biology and Agricultural Sciences*, 2(2), 208-214.
- Kjær, C., & Elmegaard, N. (1996). Effect of herbicide treatment on host plant quality for a leaf-eating beetle. *Pesticide Science*, 47(4), 319-325.
- Xu, S., Zhang, Y., Li, S., Chang, L., Wu, Y., & Zhang, J. (2020). Plastid-expressed *Bacillus thuringiensis* (Bt) cry3Bb confers high mortality to a leaf eating beetle in poplar. *Plant cell reports*, 39(3), 317-323.
- Patil, P. P., Mohite, P. B., & Chormule, A. J. (2015). Bio-efficacy of insecticides as seed dressers against leaf eating caterpillar, *Spodoptera litura* (Fab.) infesting Soybean. *Annals of Plant Protection Sciences*, 23(1), 9-11.