European Journal of Agricultural and Rural Education (EJARE)
Available Online at: https://www.scholarzest.com
Vol. 4 No. 11, November 2023
ISSN: 2660-5643

EXPERIMENTAL RESULTS ON STUDYING THE ACTIVITY OF PREPARATIONS USED ON TOMATOES IN THE GREENHOUSE AGAINST BENEFICIAL INSECTS

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

Article history:

Received: 24th September 2023
Accepted: 20th October 2023
Published: 28th November 2023

Abstract:

This article presents the data on the reproduction of Trichogramma, brakon, and lacewings, as well as their application against pests of vegetable crops. Also, the effect of preparations used on tomato plants against pests on entomophagy bred in laboratories. The results of laboratory studies to determine how many days, the possibility of releasing entomophagy after treatment with preparations are given in the article.

Keywords: Entomophages, trichogramma, brakon, biolaboratory, plant, drug, pest, adults, days.

INTRODUCTION. Today, more than 800 biolaboratoriums in our Republic are breeding trichograms, poachers and golden eyes. To date, bio-products have been increased in biofabrics, and the application of agricultural crops to large areas against pests is effectively carried out. Trichograms are used against worms of pests, and poachers are used against worms of nightshades in different proportions (depending on the density of the pest) [1; 3;].

In 2021-2022, a variety of pest-tested preparations were bred in a biolabboratory in the tomato crop: we conducted experiments in laboratory conditions to study the effects on trichograms, poachers, entomophages, that is, on how many days entomophages can be released after the drug is applied. The experiments were performed based on the accepted style [2].

RESEARCH RESALTS. 2 hours after the application of the drug on the plant, and on the 1-3-6 and 8th days, the leaves of the tomato were taken and observations were carried out in laboratory conditions. According to the results of the observation, it turned out that the effect of the drug Jayam on the mature breed of trichogram was higher than on other drugs, and after 2 hours – 70.0%, after 3 days – 25.3% died; and after 6-8 days, the trichogram did not die. The knockout drug killed 45.4% of mature trichogram breeds after 2 hours, and after a day – 22.9%, and after 3 days, the death of the pest was not observed. The mature breed of trichogram has a stronger sensitivity to the drug Sayver, and the death of the entomophage reached 2 hours later – 66.4%, after 1 day – 51.7%. On the third day, the pest was not found to die. The drug Effektum-duo after 2 hours – 73.9%, after 1 day – 50.0%, after 3 days – 21.2% of the pest was observed to die, and by 6 days the drug did not affect entomophages. The effect of the index drug on the mature breed of trichogram after 2 hours – 65.3%, after 3 days – 52.3% died, on 6 days and after it, the state of extinction of mature breeds of trichogram was not determined. Yunona after 2 hours – 67.6%, after the 1st day-53.4%, the pest was observed to die, and on 6 days the drug did not affect the trichogram.

In the tested variant of the knockout drug compared to the mature breed of the poacher, the death of the pest was 2 hours later – 31.4%, and after 1 day, the death of the entomophage – reached 14.9%. After 2 hours in the drug Jayam – 55.8%, on the 3rd day the death of the pest-by 21.6%, from 6 days the drug was harmless. And when using the drug Sayver, after 2 hours, the mature breed of poachers was affected – 36.2%, and after 3 days – 2.7%. From 6 days, the drug was annoying (Table 1).

Both the drug Effektum-duo and the mature breed of poachers were strongly affected, and after 2 hours – 60.0% of the pest was observed to die. On the third day – 21.7%,and from 6 days did not affect. The effect of the index drug on the mature breed of the poacher died after 2 hours – 32.0%, after 3 days – 22.0%, from 6 days it was hooligan. The drug Yunona, (50g / l) after 2 hours – 33.1%, after 1 day – 23.0%, the death of the pest was observed, and from 6 days it was also observed that it would be annoying.

CONCLUSION. Among the insecticides tested, none turned out to be strongly affected compared to trichograms and poaching pests. The Effektum duo – 73.9% of the drug, which was most strongly affected for the first 2 hours after the drug was sprayed, had an effect of zero by the 6th day, killing entomophagous breeds. We believe that the other prerparates tested are among the insecticides that are safe compared to the 3rd dwarf trichogram and the mature Bracon breeds, allowing the use in practice of specimens that are effective against pests.

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Table 1

Effect of drugs on the mature breed of trichograms and poachers

Laboratory experiment, 2021-2022.

Name of the drug	Acting substance	Working solution, %	Until the entomophage number is processed	Death of the entomophage, %			
				after 2 hours	after 1 day	after 3 day	after 6 day
Mature breed of trichogram							
Knockout, 15% sus.k.	*indoxacarb*	0,04	30	45,4	22,9	0	-
Jayam, 5% em.k.	*lyambdasigalothrine*	0,025	30	70,0	57,4	25,3	0
Sayver, 5% s.e.g.	*emamectinbenzoate*	0,04	30	66,4	51,7	0	-
Effektum-duo 40% sus.k	*lyambdasigalothrin+imidacloprid (100 g/l + 300 (g / l.)*	0,08	30	73,9	50,0	21,2	0
Index, 15% sus.k.	*indoxacarb*	0,04	30	65,3	52,5	0	-
Yunona, (50g / l)	*emamectin benzoate*	0,035	30	67,6	53,4	0	-
Mature breed of poacher							
Knockout, 15% sus.k.	*indoxacarb*	0,04	30	31,4	14,9	0	-
Jayam, 5% em.k.	*lyambdasigalothrine*	0,025	30	55,8	42,8	21,6	0
Sayver, 5% s.e.g.	*emamectinbenzoate*	0,04	30	36,2	25,1	2,7	0
Effektum-duo 40% sus.k	*lyambdasigalothrin+imidacloprid (100 g/l + 300 (g / l.)*	0,08	30	60,0	40,7	21,7	0
Index, 15% sus.k.	*indoxacarb*	0,04	30	32,0	22,0	1,9	0
Yunona, (50g / l)	*emamectin benzoate*	0,035	30	33,1	23,0	1,5	0