The Use Of Entomopathogenic Fungi Against Insecticides

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Abstract: In this article used to oentomopathogne fungi, along with insecticides against greenhouse whitening and melon juice, can be effective and can delay the recovery of the initial number of these pests. experiments on the combined use of insecticidal and entomopathogenic fungi against greenhouse acne and melon juice were conducted in greenhouse conditions. Experiments were carried out in greenhouses with a total area of at least 0.5 hectares, which is naturally contaminated with tomato and cucumber plants. The experimental variants were in four repetitions, and each plant received 10 herbivores.

Index Terms: Fufanon, fungi, entomopathogenic, greenhouse, herbs, insecticide, use.

1 INTRODUCTION

Protection of crops from pests, diseases and weeds is one of the most important factors in crop preservation. The use of various chemicals to protect these crops from harmful organisms, that is, large-scale use of pesticides, can lead to deterioration in the agrobiocenosis and worsening of ecologic conditions. Therefore, the use of biological methods in crop protection systems expands the range of possibilities to eliminate harmful organisms, and this can greatly help to solve the problem effectively. A number of studies have been carried out on the use of entomopathogenic fungi against sucking pests along with chemicals (Orynbaev, 1985; Geshtovt, 2002; Dubovsky, 2010; Sevnitskaya, 2013). Actions of V.lecanii (strain Vc-3) and B.bassiana (strain B21) in the greenhouse by S.Orynbaev and N.Y. Geshtovt, 50% k.e. 100% of larvae die by 12 to 16 days of use when administered with an insecticide (Orynbaev, 1985)[1,2,3]. The use of entomopathogenic fungi in combination with insecticides provides the ability to sustain the fungal effects of resistance (Sevnitskaya, 2013). Under the influence of chemicals, insects become physiologically weak, which contributes to the development of fungal infections and the activation of satellite microflora (Sevnitskaya, 2013). Such experiments have been carried out against a number of pests of crops and good results have been obtained with variants used with insecticides – entomopathogens [4,5,6]. Pests that affect the yield and quality of agricultural crops grown in greenhouses in Tashkent region are greenhouse herbs and melons. Therefore, a number of experiments were carried out in laboratory and greenhouse environments to find effective measures to combat them.

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2 METHODS OF RESEARCH

For this, Fufanon, 57% Ph.D. Laboratory experiments were performed to determine the optimal consumption rate for the use of the malate (insecticide - malathion) insecticide against greenhouse acupuncture and melon juice. Fufanon insecticide against greenhouse whites and melons juice 0.20%, 0.25%, 0.30 The solutions at concentrations of% and 0.35% were tested. In the laboratory experiments to test the Fufanon insecticide in the laboratory against greenhouse whitening and melon juice, the following methods were used: damp coconut leaves and green cucumber leaves infused with a separate filter on sterile Petri plates. The planned concentrations of Fufanon insecticide were sprayed on variants of cucumber leaves and melon juice on cucumber leaves placed on Petri plates, and these Petri plates were placed in thermostats with a temperature of 24-260C. Calculation of the effect of Fufanon insecticide on greenhouse whitening and melon juice was made 24 hours after the drug spraying. Each experiment was administered in four trials. Variants with more than 95% efficacy in this drug were considered satisfactory. All tested Fufanon concentrations gave positive results. It was observed that the biological efficacy of 0.20% concentration of insecticidal solution with relatively low values was 90.4-90.9% after 24 hours and 80.4-89.7% compared to greenhouse juice. It was noted that the biological efficacy of all other concentrations was 100% (Table 1). As a result of experiments it was found that the minimum concentration of 0.25% of Fufanon against greenhouse whitening and melon juice is the best standard for efficiency in greenhouse conditions. Then, the EMR-57 strain of P. vararioti entomopathogenic fungi and its optimum 6 · 107 khqb / ml titanium concentration and 0.25% concentration of Fufanon were selected and tested together with greenhouse acne and melon juice for effective research. Greenhouse field experiments on the combined use of insecticidal and entomopathogenic fungi against greenhouse acne and melon juice were conducted in greenhouse conditions. These experiments were carried out in greenhouses with a total area of at least 0.5 hectares, which is naturally contaminated with tomato and cucumber plants. The experimental variants were in four repetitions, and each plant received 10 herbivores. The strains of Entomopathogenic fungi were sprayed with variants of tomato or cucumber seedlings with greenhouse whites and more than 10% with melon juice during and after flowering. Calculation of the effect of entomopathogenic fungi on these insects was carried out from 3 days. The calculation of their effects on insects was carried out in the morning or late in the cold. In calculating the impact

on greenhouse runoff, each plant in the variant considered was counted on the 3 infected leaves and the average was calculated. When calculating the effect of melon juice, the variants considered were the number of melons found in all the leaves and branches of each plant and summarizing them and comparing it to one affected bush. Effects of P.Varioti's EMR-57 strain on greenhouse acne and melon juice in combination with Fufanon, 57% emetic insecticide (2017-2018).

***Table 1**. Effect of Fufanon on 57% Emissions on Greenhouse Acne and Melon Juice (2017-2018)*

№	Experience options	Concentration or titration of the drug	Greenhouse (imago)			Juice of melon		
			Number of insects before processing, pcs	Number of living insects after processing, pcs	Biological efficiency of activities,%	Number of insects before processing, pcs	Number of living insects after processing, pcs	Biological efficiency of activities,%
1.	Fufanon, 57% Ph.	0,25 %	83	3	96, 7	91	2	98, 5
2.	P.Varioti EMR-57 strain	$6 \cdot 10^7$ ml	91	45	54, 7	95	53	50, 6
3.	Fufanon, 57% Ph. + P.Varioti EMR-57 strain	0,25 % $6 \cdot 10^7$ ml	104	0	100	82	0	100
4.	Control (water sprayed)	-	87	95	-	70	79	-

Preliminary surveillance revealed that drugs used against greenhouse whites and melons could have different effects on them.

3 RESULTS

After 24 hours, the Fufanon insecticide was used in the experimental version with 96.7% and 98.5% biological response to greenhouse acne and melon juice, respectively. This indicator was 100% for both pests in the variation with P.Varioti's EMR-57 strain in combination with Fufanon insecticide. The variation of P.Varioti strains EMR-57 was noted for biological variation of 54.7% for greenhouse flora and 50.6% for melon juice.

4 CONCLUSION

Combined use of Fufanon insecticide concentrations of 0.25% and P.Varioti 6–107 khqb / mL against EMR-57 against greenhouse herb and melon juice in the greenhouse environment and the initial number of insects recovered after 1.5–2 months. Research have shown that the use of entomopathogne fungi, along with insecticides against greenhouse whitening and melon juice, can be effective and can delay the recovery of the initial number of these pests.

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