

## BIOLOGICAL CONTROL MEASURES AGAINST TOMATO PEST TUTA ABSOLUTA IN SURKHANDARYA REGION

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**Abstract.** Tomatoes are the most consumed type of vegetables. A number of insects cause serious damage to tomatoes. Among them, the tomato moth is considered a serious pest of leaves and fruits. This article describes the effectiveness of drugs used against tomato moth.

**Key words.** Tomato, drug, clean product, bioecological control, control, tomato moth, crop, leaf, fruit, damage.

**INTRODUCTION.** Tomato (Latin: *Solanum lycopersicum*) is an annual, perennial herb in tropical climates. It is widely cultivated as a vegetable crop. Although the name tomato is used in scientific terminology, in Uzbekistan both the plant and the fruit are called tomato or "pamildori" (among the people). In January-September 2022, Uzbekistan exported nearly 60,000 tons of tomatoes worth 45.1 million dollars to 11 foreign countries. The volume of tomato export decreased by 13 thousand tons compared to the corresponding period of 2021. The countries where Uzbekistan exported the most tomatoes in the 9th month of 2022: Russia - 29.3 thousand tons; Kazakhstan - 23.8 thousand tons; Kyrgyzstan - 6.3 thousand tons; Tajikistan - 513 tons; Mongolia - 7.7 tons; UAE - 2.5 tons. Regions that exported the most tomatoes abroad in the 9th month: Fergana region - 17 thousand tons; Khorezm region - 12 thousand tons; Bukhara region - 6.7 thousand tons. It can be seen that the protection of tomatoes from harmful organisms is one of the urgent issues. According to available data, the tomato moth spread widely in Bukhara, Navoi and Tashkent regions in Uzbekistan in 2015 (current year), and to a lesser extent in the Fergana Valley (Prof. Sh.T. Khodjaev, Ph.D. F. Shamsitdinov). It is very likely that the moth has moved to other regions. In some places, farmers sprayed tomato crops against this pest up to 20 times. The saddest thing is that the drug is immediately sold in the markets without preserving the harvest from the sprayed crops, which is not controlled by the SES staff, as a result of which there is a high probability that people who eat such tomatoes are getting poisoned. will be The moth can reduce the yield of

infected tomato plants by 80-100% and completely kill the crop. From the day of the damage, the moth can completely destroy a field with an area of 1 square meter in 2 weeks. When the larva (maggot) emerges, it is yellowish in color, 0.5 mm long, the head is black (diagnostic sign), then it dies. sib, at the age of 2-4, it takes on a pale or yellowish-green color; Lives 4-15 (average 8) days, and at this time passes the 4th year. The length of the mature larva is 8-9 mm, it wraps in silk, falls into the soil and molts. Incubation takes place in the soil or among plant debris, sometimes on infected and twisted leaves in a silky cocoon for 10 days. Fungi can also occur in pores on leaves. The bulb is light brown, about 6 mm long. Imago: females live 10-15 days, males 6-7 days. Its length is 5-7 mm, wingspan is 8-10 mm, its color is brown or silvery, there are characteristic black spots on its front wings, its whiskers are stringy (rosary). The pest has stringy (rosary) whiskers on its front wings. The presence of silvery-gray scales and specific black spots is one of the most important identification signs to consider for its identification. Such signs include the signs of the development of the moth from the 1st to the 4th year of life.



### Research conducted in greenhouses of Termiz district

**Research methods.** During the accounting work, a sample is taken every 25 meters along the diagonal of the cultivated areas. The degree of damage to the leaves by pests - the time when the plant is severely damaged is observed. When making calculations, 10 places of the monitored area are placed along the cultivated area in a checkerboard manner, and each plant (at least 100) is examined.

**Research results.** According to the results of experiments conducted in Termiz district in 2024, various methods are used to eliminate the damage of *T. absoluta*. Although management with chemical insecticides is useful, alternative options such as biological control are necessary to obtain a clean ecological product. In this process, *Chrysoperla carnea*, *Trichogramma* (Hymenoptera:Trichormmatidae) was found to be effective against *T. absoluta*. According to the data, it can be determined

that *C. carnea* kills 36±2 eggs of *Tuta absoluta* in 24 hours and 72±4 eggs in 48 hours under controlled laboratory conditions. In addition, *C. carnea* has high predation against the larvae of leaf beetle pests. Up to 22%, it was found that up to 35% damage to the larvae of the pest on the leaves. The use of these methods will cause the damage of *Tuta absoluta* and eventually reduce their population and get a pure ecological product for the population.

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