



## THE IMPORTANCE OF THE OLTINCOAT ENTOMOPHAGE IN THE FIGHT AGAINST APPLE FRUIT IN ORCHARDS.

Rahimov Mansurbek Mavlonjonovich.

Otaboev Shokhrukhmirzo Khafizulloevich

Andijan Institute of Agriculture and Agrotechnologies,  
Andijan district, Kuygan-yor city, Oliygokh street, building

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**Annotation:** The article explores the bioecology, harm, and biological efficacy of the apple strawberry entomophage against pest eggs and 1-2 juvenile worms in different proportions. In our experiments, a high biological efficiency was achieved when we applied a hexagonal entomophage against Apple Strawberry in a ratio of 1:10.

**Аннотация:** Исходя из этого, в статье приводятся биоэкологические особенности яблонной плодожерки, ее вредоносность и биологические меры борьбы против яиц и личинок 1-2 возрастов, с применением энтомофага златоглазки в разных соотношениях. Наибольшая биологическая эффективность получена в варианте с применением златоглазки в соотношении 1:10.

**Keywords:** Apple, pest,damage, apple fruit, infestation, fruit, leaf,butterfly,phase, oltincoase.

**Ключевые слова:** яблоня, вредитель, вредоносность, яблоневая плодожерка, вред, плод, лист, бабочка, фаза.

**Introduction** Worldwide, fruit farming is one of the leading sectors in agriculture in many countries. In the world, apples are grown every year on an area of more than 5 million hectares. In 2022, the volume of its cultivation was 80 million tons. In 2021-2022, the volume of gross apple cultivation decreased by 2.8 million tons. In particular, 46% of the total Apple product is harvested in Germany, 23% in Italy, 8% in France, it is observed to die under the influence of harmful organisms. Accordingly, the protection of the grown crop from pest damage is considered an urgent problem.

During the period of cultivation of fruit products in the world, there are a number of problems in protecting them from damage caused by several pests, on average, 20-40% of the grown products are dying under the influence of pests. In addition, many chemical agents used in the management of the amount of pests and diseases affect the environment and human health. The further increase in the problem is also affected by global changes in climatic conditions on Earth, a violation of the biological chain, a sharp increase in the amount of certain pests occurs, and a number of problems arise in managing their quantity.

Review of literature in our Republic, many fruit trees are grown apple, pear, Beech, Cherry, Cherry, Peach. However, without protecting their harvest from harmful organisms, a high-quality harvest cannot be obtained. Today, more than 300 arthropods are found in the fruit garden agrobiotzenosis in our country. They are aphids, spiders, Shields, hemp, leaf fleas, apple moth and several other pests. Serious damage to the yield and fruit quality of orchards. In particular, it is possible to lose 50 and even 70% of the crop if the apple orchard itself is not fought. [1]

**Apple strawberry**-*Laspeyresia (Capnocaanca) pomonella* L. Butterflies come 17-22 mm when they write wings, the front pair of wings are gray, with a large corner dock at the very tip, when they fold their wings and sit, they are sharply distinguished from other butterflies by dressing up a characteristic common spot. The dorsal pair of wings is light brown in color. At the outer edge of the wings there will be a short brown pupa. The egg is round (1.5) mm flat whitish in color, the worm that hatches from the egg is whitish in Salt. Later, the head of the worm and the top of the Ensa enter a light brown or reddish hue. The size of an adult worm comes 19 mm, the top Is Pink, the OST side is white or yellowish. The gumbag is arranged in a white soft cocoon, 10-12 mm in size, dark brown, with a series of spines on segments 8-9 as well as at the end of the abdomen [2].

One butterfly lays 30 to 60 eggs. The egg is discoid white milk, 1mm in diameter. Small whitish-pink worms hatch from the eggs. They grow slowly, reaching a length of 16-18 mm and entering a pink color with light gray spots from the sides, while on the lower side they have yellowish spots. Mature breeds grow and overwinter in cocoons between cuttings and in warehouses where fruits are stored, among which the trunk of the tree, among the khazans shed under the bark of the bushes.

In the spring, during the Apple budding period, hummingbirds begin to develop when the temperature exceeds +100 C. Their development takes 8-10 days in valley conditions, while in Mountain and mountain slope orchards it takes 15 days or more. The flight period of hummingbirds and butterflies lasts up to a month. Because worms are wintering in different places where the oftob is not heated the same.

The flight and mating of butterflies continues into the Twilight Midnight. And on the day of the day, the butterflies lie in the midst of the branches without moving. The air temperature is +15 C, and on warm nights with a gentle breeze, the flight of Butterflies is especially intense. Two to five days after the appearance of butterflies, the female begins to pour one egg on the smooth surface of the leaves, and later on the fruits. The egg-laying period lasts 20-30 days. Female butterflies often pour their eggs on the top of the tree branch-trunk, in some cases on the middle and lower yarnts. The worms that Hatch begin to be seen 8-15 days after the apple blossoms [3].

The worms, during their wanderings through the fruit, find the damaged place of the fruit peel and from there penetrate the fruit body towards the seed chamber, carving the fruit flesh. When the Apple worm rotates 1-2 times over the surface of undamaged fruits, it is healthy-the entrance begins to open, gnawing the entire surface of the fruits. The worms weave a sparse web and attach to the fruit pod to open a way of carving into healthy whole fruits. To open the entrance, the fruit begins to gnaw the flesh, collecting the remains of the arched fruit flesh in a web he has woven, turning behind it with his head, and pulling the remains of the fruit flesh inside the net to the head of the entrance, forming a lid covering the mouth of the Lahm.



Figure 1 damaged fruit



Picture 2 apple fruit fruit mature breed

It is noticeable that the cap protrudes slightly from the surface of the smooth fruit. In some cases, it is also common for worms to glue the Leaf petals that are close to the fruit with their web. After a while, the cap, formed from the remains of the fruit flesh, first darkens and becomes more intense, and then acquires a brown color. It is with these signs that freshly damaged fruits can be distinguished from the old one. The amount of damaged fruits can reach the following levels if systemic measures are not carried out against the fruit user: in early apple varieties, 25-30%, in summer – 40-50%, in late-up to 70% and even higher. In doing so, the profitability of the gardens is aging and halving and shrinking.

### Research methods

The experiments were carried out in the apple orchards of the Information Advisory Center (Duk) of the Andijan District of the Andijan region. In carrying out the research, all the methods and techniques adopted in the protection of plants were used. Experiments were carried out on the Goldon deleshest variety. Studies 4 option consists of 3 returns, apple seedlings are planted in a 4x4 scheme. In experiments against Apple Orchard eggs and 1st and 2nd-year - old worms, a 2-day egg of the oltincoat entomophage was distributed at an average temperature of 25-260 C. The following results were obtained. When we distributed in a ratio of 1: 10, on the 3rd day of the experiment, a biological efficiency of 57.2% was achieved compared to the control option, 68.4-78.0% in 6-10 days (table). When entomophagni was administered in a 1: 15 ratio, the biological efficacy on Day 3 of the experiment was 56.2%, as well as 66.7-72.2% on days 6-10. The biological efficacy of oltincoase on the 3rd day of accounting in 1:20 administered variants was 54.0% compared to the control option, as well as 63.0 - 67.5% on days 6-10.

**Conclusion** High biological efficiency was achieved by applying a 1:10 ratio of oltincoat entomophage against Apple fruit in intensive apple orchards. In farms and clusters specializing in horticulture, we recommend applying a hexagonal entomophage in a 1:10 ratio.

Table

### Entomophagining biological efficacy of oltincoase against Apple worm

2021-2022 in the conditions of the Information Advisory Center (Duk)

"Asaka District of Andijan region.

1-Table

Variants	The number of Apple worm eggs in a bush of apple seedlings before the release of	The number of Apple worm eggs in a bush Apple seedling after the release of the	Biological efficiency %



	products			product					
	11.04.	16.04.	21.04.	3-кун	6-кун	10-кун	3-кун	6-кун	10-кун
Control	32	37	39	38	43	48	-	-	-
1:10	35	38	41	15	12	9	57,2	68,4	78,0
1:15	32	39	40	16	14	11	56,2	66,7	72,2
1:20	37	35	37	17	13	12	54,0	63,0	67,5

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