

EFFECTIVENESS OF THE *CHRYSOPIDAE* ENTOMOPHAGY AGAINST APHID SUPERFAMILY (APHIDIDAE) ON APPLE TREES

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ABSTRACT

The following species of leaf aphid are found on apple trees: mealy plum aphid (*Hyalopterus arundinis* F.), leaf curl plum aphid, (*Brachycaudus helichrysi* Kltnb.), *aphis infuscata koch* (*Rhopalosiphum infuscata* Koch.), waterlily aphid (*Rhopalosiphum nymphaezaira* L.) causes damage. Against them, the effectiveness of drugs was studied using oltinko's entomophagy.

Keywords: Aphid, pest, aphidophagous, oltinkoz, winged.

1. Introduction.

In order to ensure food security in Uzbekistan, it is necessary to conduct in-depth research on the protection of agricultural crops from pests. That is why our government considers the cultivation of environmentally friendly products and the improvement of the environment as a priority in ensuring food security.

Aphid superfamily keeps the trees from growing, deprives them of vigor, twists the branches, and curls the leaves; The trees severely damaged by aphid do not bear good fruit. Young saplings in nurseries, as well as saplings on young apple trees, are particularly vulnerable. Young trees are damaged by leaf curl plum aphid as well as waterlily aphid and often die.

The length of *aphis infuscata koch* is 2.0-2.6 mm. The color of the wingless aphid is greenish brown or reddish brown; The body is broadly egg-shaped, the apical tubes are slender, cylindrical, dark brown in color. The head and chest of the wingless aphid are thick.

The wingless mealy plum aphid is light green, with a thin stream of waxy powder; it is elongated oval in shape, sometimes very elongated, 2.5-3 mm long; There are two rows of discharge spots on the chest and abdomen. The head and breast of the winged aphid are black, with a grayish powder; the

abdomen is green and has two rows of streamy spots; the apical tubes of winged and wingless aphids are green in color.

The length of the leaf curl plum aphid is 1.2 mm. The wingless aphids are elongated pale green or orange in color, and sometimes a large black spot appears on the abdomen. The aphid tubes are dark green, the mustache is flowing, the head and middle breast of the sap are dark, the abdomen is light green or orange. Often there is a large green spot, the color of the apical tubes and mustache is dark.

The color of the waterlily aphid wing is yellow-green or green, the whiskers are blackened, and the upper half of the aphid tubes is slightly thickened. The color of the winged aphid is green and has dark green transverse paths. Sometimes these paths are not noticeable or are added as a single common spot. The tips of the whiskers, calves, thighs, and paws are black, the apical tubes are dark, cylindrical, and sometimes slightly curved. The size of the wingless aphid is 1.4-2.5 mm; winged aphid 1.4–2.0 mm. The eggs of all aphids are black, elongated.

The way of living. Aphid superfamily, which damages seeded fruit trees, lives on the branches, especially at their ends, near the buds, at the ovary stage.

2. Materials and methods.

Research in orchards, special observations on the species composition of pests, developmental bioecology, dynamics were carried out by the methods of B.P.Adashkeekich, Sh.T.Khojaev, the degree of damage criteria V.I. Tansky.

Apple aphid control measures are carried out taking into account the dangerous number of pests and the ratio between pest and beneficial insects. If beneficial insects are attracted to the apple orchards and they are protected from extinction, the amount of apple aphids will be significantly reduced.

If it is observed that there are 10 sets of apple aphids per 100 branches after flowering of the trees, they will be controlled. However, even then, the number of naturally occurring entomophages must be taken into account.

During the growing season, the oltinko'z entomophagy against apple green aphid was used in the apple orchards "Bilol mevazorlari" of Samarkand region on the basis of methodical manuals VIZR (1986) UzUHQITI (2004). For the experiment, oltinko'z egg from entomophagy was used in a ratio of 1:10 / ha.

3. Research results.

There is a theory of biological and nutrient linkages between plant species in nature and insects that accumulate in the

biocenosis. This is due to the fact that the number of insects in the biotope at the bioecological level exceeds 126.9, and the number of swarms exceeds 300.0. In places where the number of pests started from 22.0-29.0 pieces, apple leaves were cut off, depending on the number of fully ripe fruit base decreased by 4.3-10.9 grams, the criterion of damage was taken into account.

Because mealy plum aphid biology has the property of rapid reproduction, it has been taken into account that apricots can cause damage by migrating to other nearby crops, including more vegetable and melon species. Therefore, the emergence of the pest on the leaves of apples allows you to control the development of future generations by taking control measures. In this regard, it was found that the dynamics of development of the insect and the degree of damage caused by the influence of air temperature and relative humidity from external environmental factors.

It is noted that the maximum level of development is an insect with the characteristic of developmental dynamics, which begins in the second decade of May, the period of summer dormancy, and again in the autumn to go to winter. When oltinko'z egg was applied in a ratio of 1:10 / ha, it showed the following effectiveness in apple against mealy plum aphid. On the 3rd day of the study, the biological effectiveness of the control against apple aphid reached 14.3%, while on the 7th day it was 57.2% and on the 14th day it was 71.4%. It was observed that the population of other pests found on apples in the experimental areas also decreased.

Conclusion

Apricot - mealy plum aphid has a unique bioecological, dynamic nature of development in the conditions of Samarkand, and in recent years the area of spread, the rate of damage is increasing.

In these agro-climatic biotopes it is proved that they overwinter in the egg phase, emerge from the winter when the temperature rises to 5 ° C in the spring, develop into a mature seed phase, lay eggs on apple buds, reproduce live by parthenogenetic methods from flower and leaf production. mealy plum aphid continues to grow and cause damage to nearby vegetable and melon crops in late May, June, in the form of clusters, with the maximum increase in the number of reeds, mainly in apples.

The early spring years continue to develop from the third of March, the late years from April, the apple and vegetable crops grow until the end of May, from the second decade of June to the summer dormancy phase, and in September and October the reeds develop and go

into winter. With the emergence of the pest on the leaves of apples to eliminate these criteria of development and damage, their development is eliminated using chemicals that are allowed to use in orchards. When *oltinko*'z egg was applied per hectare at a ratio of 1:10 against mealy plum aphid, a decrease in other types of pests found in the same agrobiocenosis was observed along with apple aphid.

Table 1 Application of “*oltinko*'z” entomophagy in the biological control of apple aphid. Production experience, 2021.

№	Entomophagy type	Phase and number, pcs	Number of pests on 1 branch, pcs	Number of pests that survived after entomophagy application, days			Efficiency of entomophagies, days%.		
				3	7	14	3	7	14
1	<i>Oltinko</i> 'z	Eggs, 2 thousand	7	6	3	2	14,3	57,2	71,4
2	Control	-	8	-	-	-			

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