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THE USE OF LACEWING (CHRYSOPA SEPTEMPUNCTATA WEBMAIL) IN THE COMBAT OF APPLE RED MITES (PANONYCHUS ULMI KOCH) IN THE INTENSIVE SEED ORCHARDS

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Abstract. *The article elucidates the use of the lacewing (Chrysoprase septempunctata webmail) against the apple red mite (Panonychus ulmi Koch), found in the orchards which are raised in the territory of the republic, at different consumption rates (1 : 5, 1 : 10, 1 : 15), based on its pest ratio and biological effectiveness. The use of the lacewing contributed to 87.8% reduction of the number of apple red mites by the end of the season. Our studies, which were less effective against hemp in the intensive apple orchards on these entomophages, showed that 1 (one) ha of apple trees on the territory of the State Unitary Enterprise of the Kibray district, the Tashkent region, against the harmful red cane (Panonychus ulmi) in Fuji orchards; studies were conducted to determine the biological effectiveness of septempunctured chrysoprase using entomophages.*

Keywords: *apple red cane, goldfish, larva, orchards, damage, pear, apple.*

Introduction

Some species of the Tetranychidae family are considered harmful and significantly reducing yields and productivity in the intensive seed orchards.

For a few years, mites have been observed to cause severe damage to pear, quince, and apple orchards. The apple red mite strongly damages young branches of apple orchards. White-yellow spots appear on the surface of the affected leaves, then the spots enlarge, the leaves turn yellow and fall off as a result of photosynthesis and metabolic disorders in the leaves. Within a few years, as a result of strong damage leaves become completely dry [4, 5, 7].

In our country, apple red mites (*Panonychus ulmi* Koch) can cause severe damage. This pest is common for intensive seed orchards. The apple red mite (*Panonychus ulmi* Koch) infects quince and pear as well. During the spawning season, the orchards overwinter at the base of three buds, leaving offspring 5–6 times during season.

The Lacewing entomophagy is effective against the apple red mite (*Panonychus ulmi* Koch), and the adult larva of a single lacewing (*Chrysopa septempunctata* was) feeds on 60-70

ИНТЕНСИВ УРУҒ МЕВАЛИ БОҒЛАРДА ОЛМА ҚИЗИЛ КАНАСИГА (PANONYCHUS ULMI KOCH) ҚАРШИ ОЛТИНКЎЗ (CHRYSOPA SEPTEMPUNCTATA WESMAEL) ЭНТОМОФАГИНИ ҚЎЛЛАШ

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Аннотация. *Мақолада республикамиз ҳудудида интенсив олма мевали боғларда учрайдиган олма қизил канасига (Panonychus ulmi Koch) қарши олтинкўзни (Chrysoprase septempunctata webmail) турли сарф меъёрда (1 : 5, 1 : 10, 1 : 15) қўллаб, унинг зараркунандага нисбати ва биологик самарадорлиги бўйича олиб борилган тадқиқот натижалари ёритилган. Олтинкўз қўлланилганда, мавсум охирига келиб, олма қизил канасининг сони 87,8% гача камайганлиги аниқланган. Бу энтомофаглар бўйича интенсив олма мевали боғларда каналарга қарши тажрибалар самараси камроқ бўлган бизнинг тадқиқотларимиз Тошкент вилояти Қибрай туманида жойлашган Ахборот-маслаҳат маркази (extension center) ДУК ҳудудидаги 1 (бир) гектарлик олманинг Фужи навли боғларидаги зарар келтирадиган олма қизил канасига (Panonychus ulmi) қарши курашда, олтинкўз (chrysoprase septempunctata was) энтомофагини қўллаб, биологик самарадорлигини аниқлаш бўйича тадқиқотлар олиб борилган.*

Калит сўзлар: *олма қизил канаси, олтинкўз, личинка, мевали боғлар, зарари, нок, олма.*

ПРИМЕНЕНИЕ ЗЛАТОГЛАЗКИ (*CHRYSOPA SEPTEMPUNCTATA* WESMAEL) В БОРЬБЕ С КРАСНЫМ ЯБЛОНЕВЫМ КЛЕЩОМ (*PANONYCHUS ULMI* KOCH) В ИНТЕНСИВНЫХ СЕМЕННЫХ САДАХ

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Аннотация. *В статье освещено применение златоглазки (Chrysopa septempunctata wesmael) против красного яблоневого клеща (Panonychus ulmi Koch), встречающегося в садах, возделываемых на территории республики, при различных нормах расхода (1 : 5, 1 : 10, 1 : 15), исходя из соотношения вредителей и биологической эффективности. Использование златоглазки способствовало снижению числен-ности красных яблоневых клещей к концу сезона на 87,8%. Исследования, проведенные на 1 га территории интенсивных садов яблони сорта Фуджи ГУП Кибрайского района Ташкентской области, показали, что применение каналов*

mite imagos, eggs, and larvae a day. In the wild, lacewing plays an important role in reducing the number of apple red mites, with predominant species (Chrysopa septempunctata was, Chrysopa carnea Steph) [1].

The genus (*Chrysopa septempunctata* West) has some advantages over other species, manifesting low norm distribution, rapid reproduction, and high efficiency.

Lacewing (*Chryzopa carnea* Steph) is green and feeds on the nectar of unusual flowers. It flies well towards the light. The body size of the lacewing mature breed is 19-25 mm, which varies depending on the way the larvae feed. They differ from each other in the location of the internal and transverse radial-medial vessels relative to the triangular cell located in the anterior wing [2, 3].

Only worms of the lacewing (*Chrysopa septempunctata* we) live in the wild. They will eventually turn black. It has fast migration and excellent wintering properties. It is very omnivorous and feeds on more than 70 species of arthropods, including 11 species of mites. The lifespan of the lacewing (*Chrysopa septempunctata* web) is as follows: in the Imagolic phase, it partially overwinters in cocoon-covered soil lumps, under plant debris, in tree and bark hollows, and indoors. Wintering goldfish are naturally active in early spring, i.e. in late March to early April, when the average daily temperature reaches 10-11 ºC. Insects appear from the winter feed on the pollen of flowering plants at this time, mating, and then begin to lay eggs.

In most cases, the lacewing (*Chrysopa septempunctata* was) lays its eggs in places where the aphids are very abundant, where they can easily find food for their larvae. Laying is smooth, one female can lay up to 65 eggs a day and 500-750 eggs throughout her life. The length of embryonic development varies from 4 to 15 days, depending on weather conditions [6].

Lacewing (*Chrysopa septempunctata* web) is an effective species in intensive seed orchards and is resistant to high temperatures. The larvae do not leave the garden even at temperatures of + 38; + 40 ºC. This situation increases the possibility of

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против вредоносного красного плодового клеща (Panonychus ulmi) менее эффективно, чем использование энтомофагов. Также проведены исследования по определению биологической эффективности применения златоглазки (Chrysopa septempunctata wesmael) как энтомофага.

Ключевые слова: *красный яблоневый клещ, златоглазка, личинка, сады, повреждения, груша, яблоня.*

the effective use of entomophagous against mites in horticulture. In this case, lacewing (*Chrysopa septempunctata* wes) can be used in the ratio of 1 : 20 in calculation of prey. Our research, which is less effective against mites in intensive seed orchards on these entomophagous species, is aimed at combating pandemic apple mites (*Panonychus ulmi*) in the Fuji orchards of 1 (one) hectare apple orchard on the territory of SUE in the Kibray district, the Tashkent region, *Chrysopa septempunctata* wes has been studied to determine its biological effectiveness using entomophagous. The results of our experiments are shown in Figure 1.

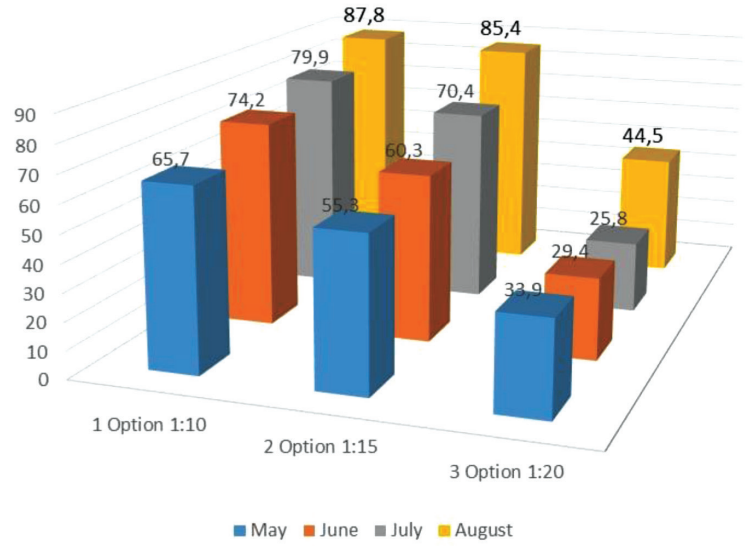

Figure 1. Effectiveness of lacewing against apple red mite*

*A. Rakhmanov 2020-2021.

Research materials and methods

The laboratory-propagated lacewing (*Chrysopa septempunctata)* was distributed in different proportions, taking into account the apple red mite (*Panonychus ulmi* Koch) in the intensive seed orchards.

Lacewing eggs were placed on tree branches in pieces of cloth. The lacewing eggs were distributed separately in each case; the tests took place every 7, 14, and 21 days, and the highest biological yield of lacewing was calculated on the 14th day. Distributed in ratios of 1:10, 1:15, 1:20 to the lacewing pest (*Panonychus ulmi* Koch). According to him, the appearance of the apple red mite (*Panonychus ulmi* Koch) began to spread, that is, in April and May. Distributed 3 times at 15-day intervals throughout the season. In the above ratios, an average of 3,000 lacewing eggs were distributed per season, with a total of 1,000 eggs per hectare.

Research findings and discussion

The number of apple red mites (*Panonychus ulmi* Koch) on a single leaf after the spread of the lacewing, the ratio of lacewing larvae was studied.

The average number of images of the lacewing (*Chrysopa septempunctata* was) was calculated by changing the number of apple red mites in each variant over the months. In the first option (1:10), the biological efficiency was 65.7% in May, the number of red apples decreased slightly, in June it was 74.2%, in July it was 79.2%, and in August the biological efficiency was 87.8%.

In our second variant, when the lacewing (*Chrysopa septempunctata)* was used in the ratio of 1:15, the highest biological efficiency was 85.4% in July.

In August, however, the lacewing apple failed to exert its effect to control the number of red mites (*Panonychus ulmi* Koch). In the third case, the proportion of apple red mites (*Panonychus ulmi* Koch) increased sharply up to 1:20, and the biological efficiency was low in May, 33.9% in June, 29.4% in July, and 25.8% in July.

Conclusions

From our research, it can be maintained that the use of the lacewing (*Chrysopa septempunctata*) in the ratio of 1:10 in early spring against the apple red mite cell ensured high biological efficiency of 85.4% in July. By this time the apple red mite was much rarer. The use of the lacewing apple red mite (*Panonychus ulmi* Koch) in intensive seed orchards with low yields ensured a positive result, which contributed to a gradual increase of their number.

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