

BIOLOGICAL CONTROL OF CARROT PESTS

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Abstract. Today, the effective organization of the field of plant chemistry, dressing, ensuring the quality and safety of food products, increasing the volume of exports have a very important value. The most responsible issue of the current period is to dramatically improve the provision of the population with food products and to provide an opportunity for its continuity. If the scientific organization of the collection, transportation, storage and processing of agricultural products is carried out, relying on scientific and technical achievements and advanced experience in this regard, the waste of products is greatly reduced.

Keywords: *Chrysoperla carnea* (Steph.), arthropods, acarina, tetranychidae, aphididae, plant rusts.

In recent years, great importance is attached to biological protection of plants. Because, no matter how effective the chemical method is, it has its own disadvantages. A number of means of this method, in particular, most chemicals, are harmful and dangerous for human health, warm-blooded animals and the environment, as well as for all beneficial insects, that is, biological agents. Therefore, along with the cultivation of resistant varieties, it is advisable to use biological methods in areas where insects and mites have fallen. The positive aspects of this method have been shown by many scientists.

Among entomophages, insects belonging to the golden-eyed family occupy a special place. Currently, 24 species of goldeneye have been identified in Central Asia. In Uzbekistan, *Chrysopa carnea* Steph., *septempunctata* W., *Ch. abbreviata* Curt., *Ch. albolineata* L., *Ch. vittata* W. are widespread and can be found in large numbers.

The goldfish and its larvae are voracious insects that are extremely reluctant to eat their prey and can move quickly from place to place in search of prey. It is omnivorous and feeds on more than 70 species of arthropods, including 11 species of mites. Good efficiency is achieved when applied by seasonal release against aphids, spider mites and rust mites spread on plants belonging to the ituzum family in golden eye greenhouses [1].

According to B.P. Adashkevich, goldfish leaves the village in March-April, when the average daily temperature reaches 10-11°C, and begins to live an active life. Each female entomophagus lays up to 65 eggs per day, 500-700 eggs throughout her life. In the conditions of Uzbekistan, it gives 4-5 generations.



1) Goldilocks imago

2) Goldilocks larva

The duration of development of eggs is from 3 to 7 days, depending on the temperature. The larva develops in 15-28 days, and the mushroom develops in 8-17 days. The duration of development of one generation is 52 days. Scientists have developed methods of breeding golden eye in laboratory conditions and using it against carrot pests. In open field conditions, it is recommended to use golden eyes against aphids and spider mites in a ratio of 1:10. In this case, it was determined that a good result is achieved when the larvae of the second age are released from 150-200 thousand pieces per hectare.

The pest was artificially applied in different proportions (1:10, 1:15 and 1:30) during the flowering and fruiting periods of the plant, and its effectiveness was determined. First, small, white-yellow spots appear on the surface of the affected leaves, then the spots become larger and the leaves turn yellow. Strongly affected plant leaves, in some cases the plant completely dries up. The importance of the golden-eyed entomophagus in reducing the number of spider mites in nature is incomparable.

The consumption of goldfish in a ratio of 1:10 was effective in all options, and the biological efficiency was 87.0% 14 days after the application of the bioproduct. The above amount (ratio) can easily control the number of spider mites in greenhouses. In some cases, the use of microbiological preparations obtained from the bacterium *Bacillus thuringiensis*, which is harmful to the environment, gives good results in greenhouses. Preparations based on this were widely used in cotton and vegetable growing in Uzbekistan in the 80s and 90s. But in recent years, attention to this direction has decreased, and microbiological preparations are no longer used in our republic. In our opinion, there are great opportunities for the use of bacterial and viral drugs in agriculture in the future [2].

Conclusion

Therefore, based on the above information, it is more convenient to grow and increase the yield of plants and vegetables by biological protection than by chemical protection, and it is scientifically approached to protect human health and the environment. Currently, the use of biological methods to grow agricultural products and increase productivity is an important task.

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