

REPRODUCTION OF TRICHOGRAMMA IN BIOLABORATORY CONDITIONS.

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Annotatsion: Currently, chemical protection of agricultural products leads to the accumulation of chemicals in fruits and vegetables, and at the same time, it causes serious damage to human health. Various substances contained in chemical preparations do not break down in plants, soil and water, causing damage to nature. We are carrying out scientific research in order to preserve the stability of entomophages in nature by multiplying them in a high-quality and efficient biolaboratory. In this article, you will get acquainted with one of our ongoing researches, the technology of generation renewal in the effective reproduction of trichograms.

Keywords: Trichogramma, cytotroga, night butterfly, grain moth butterfly.

In Russia, the first scientific work on the use of biological control methods against harmful insects was carried out by the famous Russian scientist I.I. It is related to the name of Mechnikov. In the late 1970s and early 1980s, he identified the fungal and bacterial pathogens of the grain beetle - *Anazoplia austria*, and on the use of pathogens of green muscardina. conducted a series of successful experiments. Krasilshik.I.M. Mechnikovn.I.I. continued his work, and for the first time in the world, he carried out many mushroom cultivation works. I.V. Vasilov and A.F. Radeckiy was the first to bring the egg-eating trichogram from Astrakhan to the gardens of Tashkent and Samarkand. Before that, in 1903, I.V. Vasiliev brought the egg-eating telenomus, the main pest of conifers, from Central Asia to Kharkiv Governorate. Their use has given good results.

Around that time, V.I. Poslelov also began to conduct extensive experiments on the artificial multiplication of the trichogram and its use.

To study the possibilities of using the biological method of plant protection in Uzbekistan, V.V. Yakhontov, A. N. Lujesky and other scientists made a

significant contribution. Currently, almost all agricultural educational institutions and biological institutions in Uzbekistan and the Central Asian republics are developing scientific and practical activities for the development of biological methods.

The purpose of our experience is to multiply Trichogramma as an entomophagus in high-quality biolaboratory conditions to obtain high-quality and environmentally friendly products of edible vegetables and pulse crops, cotton fiber, fruits and other plants. The cause of many diseases also appears when you use a lot of chemicals and eat products contaminated with chemicals. Chemical preparations harm the environment and living organisms. When we process with chemical preparations, it spreads around and is one of the main causes of ecological damage. Medicines accumulate in the human body and cause various diseases such as salt accumulation diseases, gastrointestinal diseases, and birth defects of children.

The advantage of the biological method is that our entomophages, which use it, search for and kill live prey. Pests begin to disappear. If used for several years, this area becomes an aura of entomophages and starts to live in its natural state every year. Kills pests, in this respect the biological method is useful, but not harmful.

Breeding a single Trichogramma insect requires a lot of grain and labor, about 40-50 days for Trichogramma and 55-60 days for Bracon. Trichogramma is a useful entomophage that we use against more pests. Trichogramma bites the eggs of the pest and lays its own eggs. The larvae that hatch from it feed on the yolk of the pest's egg and enter the maturity period. Trichogramma bites the egg by its smell. The eggs of the Trichogramma grain moth butterfly are propagated by cytotroga under laboratory conditions. After the trichogram gives 2-3 generations, it is necessary to renew its generation, and then a quality trichogram is obtained. In our experience, we have found mackada upgrading to be the most effective method.

Primary product update and assembly. The purpose of upgrading the primary product is that when it is continuously propagated in the eggs of the Trichogramma grain moth (Cytotroga), it gradually loses its natural properties. For example, the

sexual productivity of a trichogram that has been reproduced for 3 generations in a row decreases by 50-60%, and after 5 generations by 70-80%. Therefore, it is necessary to update the primary product of the trichogram in the eggs of its true masters. For this purpose, the eggs are obtained from nightshade butterflies grown in laboratory conditions. The resulting eggs are glued to small pieces of paper with sugar syrup and hung on field plants. After 3 days, egg-laying eggs are collected again from the field, placed in glass jars or test tubes and stored at a temperature of 25-28°C. As soon as the natural trichogram hatches from the affected eggs, they are collected separately. To do this, moth caterpillars are collected from nature and grown in the laboratory to the form of a butterfly. For this, 8-10 male and female butterflies are placed in glass jars. In order for the butterfly to lay its eggs, the pieces of paper that are cut flat are folded into a container (gormoshka) and the mouth of the container is closed with a cloth. A piece of cotton soaked in 20% sugar juice is also hung in the container for additional feeding of butterflies. Glass jars with butterflies are stored at a temperature of 25-26° and a relative humidity of 65-70%. The container is checked once a day, the egg paper is removed, the dead butterflies are removed and replaced with live ones. The eggs of separated tuns are used for the production of primary products. Trichogramma stored in one-liter glass bottles is used to infect nightshade eggs obtained in the laboratory. For this purpose, sexually mated trichogramma are transplanted into nightshade eggs in a ratio of 1:20 (parasite:host). For additional feeding of trichogramma, a piece of cotton soaked in 10% sugar is placed on the lid of the container, and the containers are kept in bright rooms at a temperature of 24-25°C and relative humidity of 70-75%. After 4-5 days, the infected eggs turn black. Such eggs are separated and used to infect the swarm of nightingale eggs. This process is repeated 3-4 times to produce the required amount of trichogram primary product.

Updating the trichogram generation in Mecca. The first things to do to renew the trichogram generation in Makkah; Makkah is first sterilized and left in the heat for a day to revive. Then, 10 kg are put into trays, and when the humidity is 16% humidity, then they are infected with sitatroga, which is a 2-3-day-old larva. Wait

6-7 days, then the larvae will enter and damage the corn grains. It is then moistened daily to help maintain 16% moisture.

For 26-27 days, keeping the air temperature at 25-27 C and air humidity at 65-75%, the larvae emerging from the sitatoga damage the corn grains and feed on its endosperm, turn into cones, and grain moth butterflies fly out. Making sure that 10-15% of the butterflies have flown out, we put them in sterilized cassettes and hang them on the box. This is due to the fact that ticks can be damaged by pests. Then, after 3 days, grain moth butterflies are removed from it, and high-quality citatatro production begins. These sitatogas are nutritious and have a strong yellow color. The obtained cytatogas are placed in sterilized jars in a special way, the trichogram is revived and the generation is updated. Then the trichogram is multiplied again in barley. After 2-3 generations, it is necessary to update it once. Then, if the trichogram is of good quality when it is distributed to the plant plots, the effectiveness of biological control will increase.

Summary; To update the trichogram generation in Tunlam, more labor is spent, the working technology takes some time, and economically, it requires a lot of money. If the trichogram generation is updated at night in laboratory conditions, it will cause inconvenience due to the long wait.

If the generation of trichogram is renewed in Makkah, the conveniences are economically cheap, the labor consumption is light and convenient, and less time is spent. Once in Mecca, the generation of the trichogram is revived. In the evening, it is revived 3-4 times.

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