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Species Of The Family Trichogrammatidae And Their Biological Indicators

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Abstract: In the state a review of theoretical and practical work on the genus Trichogramma is presented. Analyzed bioecology, species composition and specialization of Trichogramma species on postpartum clopax.
Keywords: Trichogrammatidae, T. pintoi Voegele; T. principium Sug et Sor; T. elegantum Sor; T. evanescens Westw; T. suganjaevi Sor and T. savalense Sor

Among the main parasitic entomophagous pests of agricultural crops in Uzbekistan, 15 species of Trichogramma have been identified. Among them, 6 species of Trichogramma of economic importance have been identified, and their biological characteristics have been studied in detail. These include: T. pintoi Voegele; T. principium Sug et Sor; T. elegantum Sor; T. evanescens Westw; T. suganjaevi Sor and T. savalense Sor.

The species T.evanescens Westw, T.pintoi were selected and studies on their mass reproduction and use against cotton bollworm were intensified. However, these species are considered highly resistant to extreme conditions and are used primarily against cotton bollworm. Currently, the area under cotton is decreasing, and the area under vegetable, garden and other non-traditional crops is expanding. At the same time, the development and application of modern environmentally friendly measures to combat these crops are considered relevant. In this regard, more than 250 species of anteaters living in agriculture and forestry are spreading across agricultural crops, causing increasing damage. In this regard, there is a need to identify entomophagous insects resistant to the extreme conditions of our country among the world's entomofauna, and to introduce new species. According to him, the species Trichogramma chilonis Ishii introduced in 2008 is used as an effective entomophage for nightshade crops. However, the problem of the corn borer and the growing number of scale insects in forestry is relevant. To solve these problems, a thorough analysis of world literature and practice was conducted, and 3 species of Trichogramma were introduced by the Guangdong Entomological Institute of China. These are Trichogramma ostriniae hb Pang & Chen, 1974, Trichogramma dendrolimi Matsumura and the northern population of the species Trichogramma chilonis Ishii. Currently, these species are being studied in separate chambers at the Research Center for Biological Plant Protection, their biological characteristics are being studied and they are being adapted to the climatic conditions of our country.

Table 1. Species composition of parasitic entomophages of Lepidoptera in the agrobiocenosis

	Виды паразитов	**Вредитель тип**	**Специализация на питании**
1	**Trichogrammatidae**	**Lepidoptera**	**Яйцо**
1.1	*Trichogramma evanescens* Westv *Trichogramma pintoi* Voeg	-//-	-//-
2	**Braconidae**	**Lepidoptera**	**Взрослый червь, жук**
2.1	*Therion circumflexum* L	-//-	-//-
2.2	*Apanteles telengai* Tobias	-//-	-//-
2.3	*Bracon hebetor* Say	-//-	-//-
2.4	*Chelonus oculator* Panz	-//-	-//-

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2.5	*Homolobus truhcator* Say	-//-	-//-
2.6	*Therion circumflexum* L	-//-	-//-
2.7	*Cotesia melanoscela*	-//-	-//-
2.8	*Microctonus aethiopoides*	-//-	-//-

Trichogramma ostriniae HB is an effective parasite that attacks the eggs of the European corn borer (Ostrinia nubilalis Hübner) on corn. This parasite is widely used throughout the world. A number of studies have been conducted on the propagation and use of this species, with positive results.

Fig. 1. Trichogramma chilonis

In Uzbekistan, the introduced species Trichogramma chilonis is used, which parasitizes mainly on the eggs of cutworms on cotton, vegetable and other crops. This species loves heat and high humidity, but is resistant to cold. It is very mobile and can fly 7-8 meters in one flight.

This species was first identified in China on the corn borer. This species of Trichogramma is also used in Europe and America. The next species of Trichogramma, Trichogramma dendrolimi, is an effective parasite on the eggs of nematodes that harm woody plants in forestry and various shrubs. This species is also widely used in the field of biological plant protection around the world. The species T. dendrolimi is adapted to fly along the height of trees, and many scientists note its effectiveness in controlling the number of nematodes in mountainous areas. This species can parasitize on the eggs of pests of the same species during certain periods of time. Trichogramma pintoi is an economically important egg parasite with potential for mass production for biological control applications.

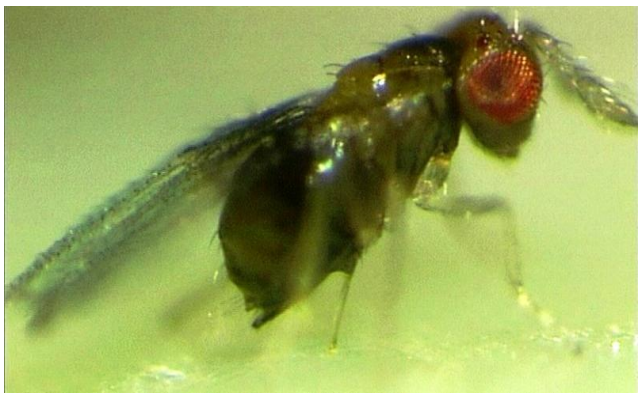

Fig. 2. Trichogramma pintoi

These species create an opportunity for further enrichment of the fauna of entomophages of our country and increase in the efficiency of biological protection of plants. Currently, studies of the biological properties of

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these species are being conducted on the eggs of various mites. After complete acclimatization of these species, it is planned to test them in industrial practice on large areas and introduce them into farms.

After the introduction of the "cotton-grain" crop rotation in our agriculture, the importance of intermediate crops (sown after harvesting grain) has increased. This is due to the fact that, on the one hand, these crops ensure productive use of land, on the other hand, they can reduce soil fertility in the same area, as well as multiply pests and diseases of the main crops sown later (next year), thereby causing great damage. We were mainly interested in this topic from the second side, namely: the study of harmful organisms developing in the main intermediate crops, the study of their integral role in the crop rotation "intermediate crops - cotton" and the creation of effective methods and means of combating them. The latter pursues two goals: firstly, to protect the intermediate crop and its harvest, and secondly, to prevent the creation of a reserve of pests for the next year's harvest. Livestock farming is developed in the farms of the villages of Yukary-Chirchik and Urta-Chirchik districts of the Tashkent region. Therefore, after grain crops, the most productive crops are mainly grown on the lands allocated to them: corn (for feed and grain), white corn (for feed and grain), black corn (for nutritious feed) and industrial corn - panicle (for forage production and panicle production). An approximate calculation shows that these three crops account for 50.7% of the land cleared of grain in the farms of the Tashkent region, the main one being corn (35.7%).

More than 100 species from the families Trichogrammatidae, Braconidae, Ichneumonidae, Chalcididae, which are effective entomophages for representatives of the order Lepidoptera, were found. In addition, new species for the entomofauna of Uzbekistan were identified: Trichogramma evanescens Westv, Trichogramma pintoi Voeg and Trichogramma ostriniae Hb from the family Trichogrammatidae, as well as the species Anastatus japonicus from the family Eupelmidae and the species Brachymeria from the family Chalcididae.

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