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Problems And Prospects Of Using Entomophages Against Pests Of Agricultural Crops

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Abstract: The article analyzes the problems of biological plant protection. The prospects for the development of biological plant protection in the Republic of Uzbekistan are highlighted.
Keywords: plants, biological protection, entomophage, parasite, investment, result.

As we know, according to FAO data, one third of the agricultural crop harvest is lost annually from pests, diseases and weeds. Despite the fact that several thousand preparations are currently used in production in various countries of the world, the basis for which are no more than 1000 active substances.

The chemical method has obvious advantages over other methods of plant protection: it is relatively cheap, quickly and effectively destroys harmful organisms. However, the mass and often unjustified use of the chemical method of control soon revealed not only its advantages, but also its weaknesses. As a result, the biological balance in agrobiocenoses was disrupted, and insecticides acted more strongly on some predators and parasites of harmful insects and mites than on pests, which led to new outbreaks of their reproduction.

Fig. 1. Dynamics of growth of the number of biolaboratories for breeding entomophages in the republic, by years.

Some insects and mites that previously had no economic value in agrobiocenoses turned into the most important pests due to mass reproduction and became much less susceptible to the action of insecticides. Cumulative insecticides were included in the food chain of animals and environmental objects. With mass chemical treatments, the presence of persistent pesticides is noted in the soil, rivers and other water bodies, almost in all food products.

At the same time, pests have 3 types of resistance to pesticides: natural, acquired, cross-resistance.

Of these, the most difficult to overcome is cross-resistance, since in this case, pests acquire resistance to many types of insecticides from different chemical groups. In the world, insects are found in more than 2 million species. They occupy a leading place in the world in terms of number and species composition. Insects occupy an important place in the biocenosis, they to a certain extent control the number of harmful species of pests, maintaining natural biodiversity

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In Uzbekistan, microbiological preparations are widely used against agricultural pests along with chemical methods, including various pathogenic pathogens of harmful organisms, such as fungal, bacterial and viral.

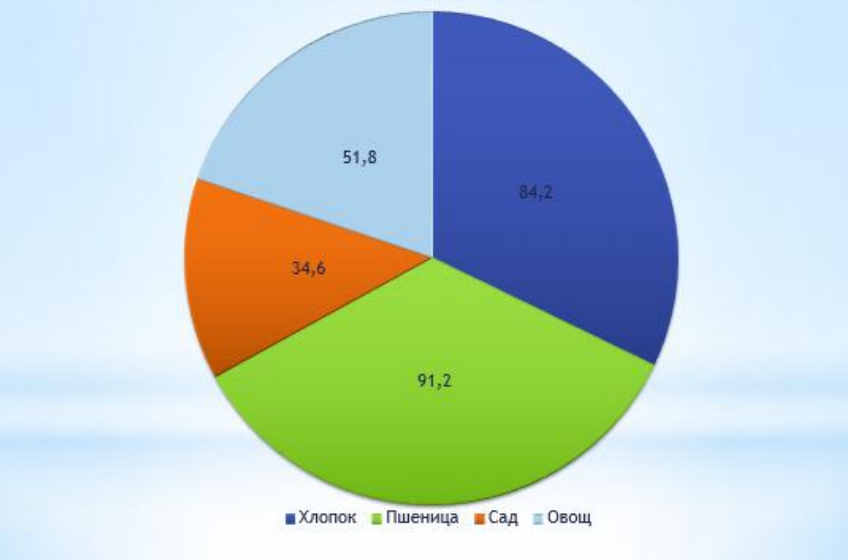

Diagram-1. Use of industrial entomophages against pests of agricultural crops %.

Currently, about 700 biological laboratories operate in Uzbekistan. About 10-12 tons of sitatrog eggs, about 8 tons of various types of trichogramma, more than 4 billion specimens of bracon hebetor, 4 billion specimens of lacewing eggs are produced against pests of agricultural plants, in addition, some types of whitefly parasites are produced, as well as several types of predatory bugs.

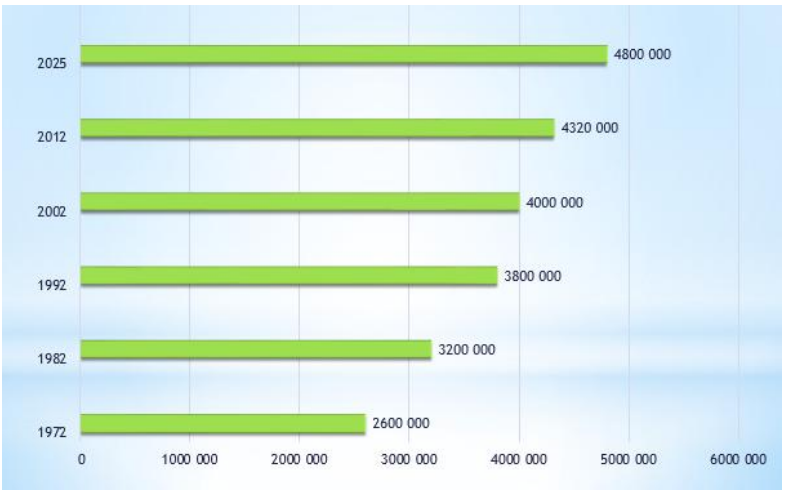

Fig. 2. The area of application of the biological method of pest control, hectares by years.

Along with phytophages, there are also useful species of entomophagous insects that play an important role in regulating pest populations. In addition, in the biocenosis, insects differ from other organisms by their diverse and complex life activity. Currently, many entomophages are bred in biological laboratories and are used to control pest populations in agricultural production. In recent years, biological plant protection remains one of the main methods in our country. Biological control plays an important role in controlling pest populations in many agricultural crops.

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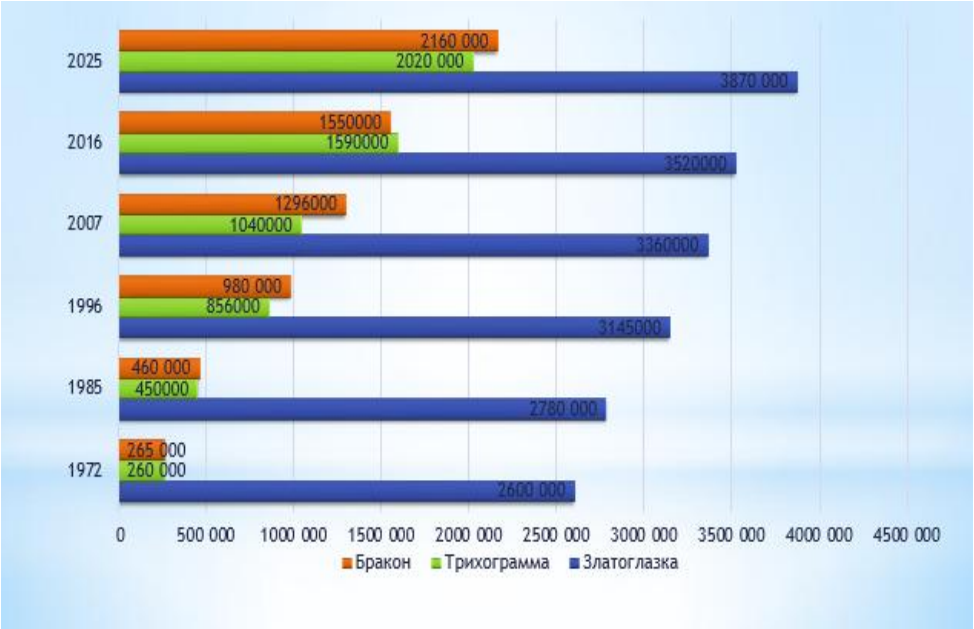

Fig. 3. Application volumes of entomophages lacewing, trichogramma and brakon against pests of agricultural crops, ha

In Uzbekistan, special attention has been paid to biological plant protection for years. The main reason for this is that with the existing entomophages it is possible to maintain the number of harmful organisms at a level that does not cause economic damage, while bioprotection makes it possible to grow environmentally friendly agricultural products. At the same time, biodiversity is preserved in various agrocenoses, the environment is improved.

Growing organic export products and providing the population with high-quality food is one of the main problems of modern agriculture. In order to protect agricultural crops from pests in Uzbekistan, natural entomophages are bred in 636 biolaboratories. In biolaboratories, mainly parasitic and predatory entomophages are bred, including: brakon, trichogramma, lacewing, encarsia and others. The annual production capacity of the existing biolaboratory allows to provide biological protection of about 60% of the area from pests. The production volumes of entomophages are: lacewing - 6,362 million specimens bracon - 4,061 million specimens trichogramma - 8,123 kilograms.

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