

# Resumption of the production of bioagents in Bulgaria

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*The good news is that after almost 30 years of interruption, bioagents will once again be produced in Bulgaria. As of this year, agricultural producers in our country will be able to obtain domestically produced bioagents.*

*The company “Organic Invest Biosecurity”, in partnership with one of the largest laboratories in Europe for the production of entomophages – “Agronomica”, with over 25 years of experience in the production of biological plant protection products, will initially offer 3 bioagents: Trichogramma, Habrobracon and common green lacewing.*

At present, despite the enormous need for bioagents, agricultural producers can only order them from abroad. A number of companies are importers of bioagents, but there is no domestic production. It is regrettable that in a country which used to be among the leaders in the world in production and application of bioagents per unit area, not a single operating biofactory has remained.

### **History of bioagent production in Bulgaria**

Bioagents, as natural enemies of pests on many crops, have a rich history in our country. In-depth studies on issues of biological control began in the 1950s at the Institute of Plant Protection (IPP) and in 1956 at the Forest Research Institute. In 1961, a section was established at the IPP, which later grew into a Problem Laboratory for Biological and Integrated Control, where intensive research work was carried out.

In 1968–1969 the first production biolaboratories were created in Petrich (for biocontrol of certain quarantine pests) and in Veliko Tarnovo, Plovdiv and Pleven for the production of *Trichogramma*. At the beginning of the 1970s, biolaboratories started operating in the village of Kovachitsa, Montana region, as well as in Vratsa, Stara Zagora, Vidin, Razgrad, Shumen, the village of Vetrino, Varna region, and Pazardzhik, mainly for the production of *Trichogramma* and some bioagents for greenhouses.

In the period 1974–1990, 21 biolaboratories and biofactories were established for industrial production of the larval parasitoid *Encarsia formosa*, the predatory mites *Phytoseilus persimilis* and *Amblyseius cucumeris*, of the predatory bug *Macrolophus caliginosus*, of the predatory gall midge *Aphidoletes aphidimyza* and of the parasitoid *Prospaltela (Encarsia) berlezei*. The annual production of 900 to 1010 kg of the egg parasitoid *Trichogramma spp.*, ranked our country third in the world after Russia, Mexico and Brazil. *Trichogramma* was applied on about 300,000 ha of maize, sugar beet, cabbage, cauliflower and pepper against European corn borer, cutworms and others.

In smaller laboratories, lacewings (*Chrysopa spp.*), syrphid flies (*Episyrphus balteatus*) and ladybirds were produced, and a biolaboratory for the production of the predatory bug *Podisus maculiventris* as a bioagent for control of the Colorado potato beetle was established at the Agricultural University. For the control of the gypsy moth in forests, the egg parasitoid *Ooencyrtus kuvanae* was produced in Sofia.

After 1990, for various reasons – the dismantling of existing regional structures, which were the main consumers of bioagents, as well as a number of others – it became necessary to close down the biolaboratories.

At the same time, globally the trend has been towards expanding the production and application of bioagents. New products appear on the market every year: predatory and parasitic insects and mites, microbial preparations, pheromones and numerous other alternative plant protection means, which make possible the full control of pests not only in greenhouses, but also in the open field for most crops.

Following Directive No. 2092/91 of the European Commission on the Environment, Directive 128/2009 on the sustainable use of pesticides, the Green Deal and, more specifically, the “Farm to Fork” strategy, the approach to agricultural production and plant protection has fundamentally changed. Alternative means and methods will replace the until recently most widely applied chemical method. The demand for such alternative means in our country is constantly increasing, while the supply is insufficient.

Precisely for these reasons, the emergence of a producer of bioagents in our country is long-awaited news. The first 3 bioagents (Trichogramma, Habrobracon and lacewing) will be on the market as early as this year.

For the release of the listed bioagents, modern unmanned and manned aircraft of the latest generation will be used.

*Expect more information on the bioagents produced in the next issues of the journal and on the website.*