

**Preliminary results on development of larvae *Galleria Mellonella* cultivation technology and on extraction of biologically active components from them**  
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Today there is a need of rise of functional food production aimed to support people with serious problems with health.

A functional food acts as an alternative of medicamentous therapy. Functional food products are foodstuffs with added useful and effective ingredients. *Galleria Mellonella* extract can be one of such ingredients as its larvae possesses unique ability to destroy some chemically resistant compounds as wax and chitin by means of digestive enzymes.

This research studies cultivation of *Galleria Mellonella* larvae on various nutrient mixtures. Addition of herbs makes larvae to product a specific fermental compound which has individual properties and has a subtle effect on a human organism.

The goal of the research is elaboration of method to receive biologically active component from *Galleria Mellonella* larvae that can be used in functional nutrition production.

Process of receiving of the product of a functional nutrition consists of the several stages.

The first stage is *Galleria Mellonella* larvae cultivation processed on various nutrient mixtures: was residue, old honeycombs, wax with addition of medicinal herbs and synthetical food. The diagram reflects comparative growth of *Galleria Mellonella* larvae depending on the main nutrition on which they were grown up.

The research revealed that *Galleria Mellonella* larvae grew better on old honeycombs and was residue because these nutrient mixtures include not only wax components, but also remainders of bee chrysalis and other products of honeybees. We chose was residue as the main nutrition mixture to decrease expenses, because 1 kg of was residue is 4 times cheaper than old honeycombs.

Having revealed the best basis for nutriment of *Galleria Mellonella* larvae, we tested herbs that change fermental structure of larvae for the purpose of profile impact of the product on a human organism. The results show that residue with addition of medicinal herbs was consumed by larvae well. The most willingly they consumed *Urtica dioica* or *Leonurus quinquelobatus*. Intensity of the larvae growth on these nutrition mixtures was 10.5%. We chose these plants because they improve adaptation properties, and they (especially *Leonurus quinquelobatus*) also protect from stress.

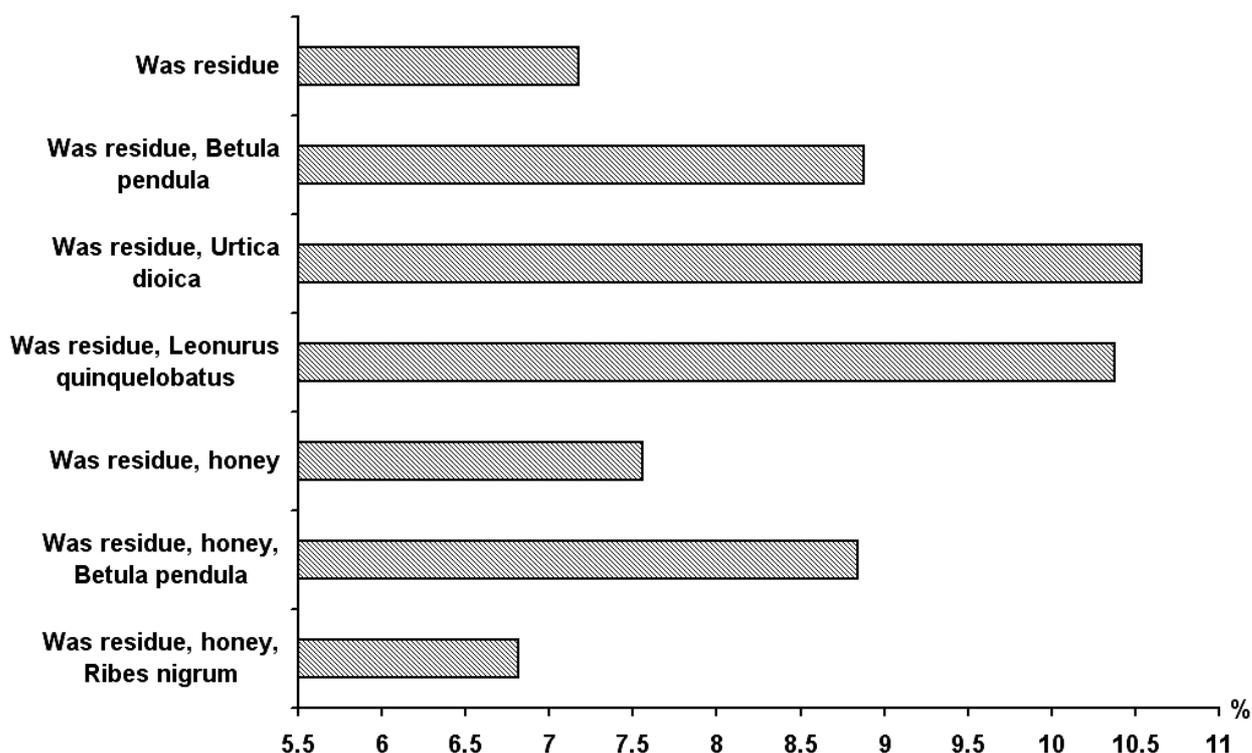


Diagram 1. *Galleria Mellonella* larvae growth rate on the various nutrient mixtures.

The second stage of the technology is contactless activation of a ready-made product that allows to make reduction-oxidation reaction in a negative side, that considerably strengthens antioxidant properties of the product.

These data are confirmed by the comparative analysis of influence of the activated and non-activated extract on blood indicators of experimental animals in the conditions of immobilization stress (carried out in laboratories of the Izhevsk medical academy under the leadership of the doctor of medical sciences, professor Egorkina S.).

Changes of biochemical indicators of blood, namely decrease in concentration of glucocorticoids and thiobarbituric acid testify the reduction of level of stress hormones, that confirms the efficiency of contactless activation in receiving stronger stress-protection effect.

Today this research continues and aims to improve the cultivation method of *Galleria Mellonella* larvae on various nurtures.