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INFLUENCE OF ELECTROCHEMICALLY ACTIVATED WATER-BASED FOOD PRODUCTS ON THE QUALITY OF WAX WORMS

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Annotation. *The article presents the results of experiments on feeding waxworms on the basis of electrochemically activated water in different nutrient media.*

Keywords: *fruit peel, bee nectar, biological method, poacher, large wax moth, electrochemically activated water, pH, artificial nutrient medium.*

One of the urgent tasks today is to introduce advanced technologies in industry, people and agriculture, and on this basis to increase the share of the country in economic indicators. One of the factors that reduces the yield of agricultural crops is pests. Today, there are more than 80,000 species of pests worldwide, of which 10,000 species cause enormous damage to plants. It is estimated that more than 30 percent of the world's agricultural crops are destroyed each year by pests. Therefore, protection of plants from them is one of the urgent issues. In particular, the widespread use of biological methods in the protection of plants from pests, scientific research to improve the efficiency of bioproducts used is important. At present, more than 900 biofactories and biolaboratories in the country breed large waxworms, which are used to produce environmentally safe and highly effective biological agent for agricultural pest control - poaching [1]. A number of scientific studies have been conducted on the feeding and reproduction of large wax moth larvae in biolaboratory conditions. Artificial food medium has been prepared by foreign and domestic scientists on more than 20 recipes. First, the American scientist M.H. He raised a large wax moth in an artificial feeding environment by Haydak. [2]. D. Beck and R.G.Young found an increase in larval growth with a small amount of beeswax [3, 4]. American researcher A. Balazs proposed bee wax and water to modify the food prepared by M.H. Haydak [5]. R.H. Dadd studied bee wax and its composition in detail and proved that beeswax

promotes larval growth and serves as a metabolic source of water in artificial nutrient media. In 2014-2020, we used electrochemically activated water to propagate large waxworms in biofabricated environments in a variety of artificial nutrient media, based on experiments with food recipes recommended by H.R. Mirzalieva and UHQITI scientists used in Uzbekistan [9, 10, 11, 12, 13.].

Table 1

Feed species for the reproduction of large wax moths

№	Kh.R.Mirzalieva recipe	№	“O’HQITI” recipe
1	100 g pasta 200 g sugar 480 g corn flour 20 g of margarine 180 ml. sut 20 g of milk yeast	**2**	900 g of corn flour 250 g. sugar 150 g. merva 70 g. margarine 327. ml. water 300 g. apple peel 3 g. yeast

Experiments on the study of normative conditions and feeding of large wax moth worms on the basis of electrochemically activated water consisted of 3 options and were conducted in 4 repetitions. In this case, option 1 was the current method, and the feed was treated with ordinary tap water. In option 2, the food prepared on the basis of the recipe of OHQITI was treated with electrochemically activated tap water (pH = 10□0.5), and in option 3 the food prepared according to the recipe of H.R. Mirzalieva was treated with electrochemically activated tap water (pH = 10□0.5). To determine the emergence of worms in the experiment, 3 samples (a total of 300 out of 100 in each sample) were taken from the total number of eggs laid by the butterflies in one batch. The eggs were first placed flat on a filter paper placed on a Petri dish. The development and viability of the worms, as well as the condition of the fungi and butterflies, also served as successors to the first worms to emerge. For their development, the required air temperature (30-330S) and relative humidity of 75-80% are created in the

laboratory.

Qualitative indicators of worms fed in two different nutrient media were studied. According to the results of the experiment, the number of worms in 100 eggs in 1 control variant was 86.75 (86.75%), the number of fungi was 70.5 (81.2%), the number of butterflies was 60.25 (85.5%), the development of insects stage was 58.1 days (eggs - 9 days, worms - 26.4 days, fungi -9.9 days, imago 13.1 days). In 2 variants, the number of worms per 100 eggs according to the recipe of OHQITI was 88.25 (88.25%), the number of fungi was 73.25 (83%), the number of butterflies was 64.5 (88.05%), the stage of development of the insect was 57, 8 days (eggs - 9 days, worms - 26 days, mushrooms - 9.8 days, imago - 13 days). In 3 variants, according to the recipe of H.R. Mirzalieva, the number of worms per 100 eggs is 89.25 (89.25%), the number of mushrooms is 72.75 (81.51%), the number of butterflies is 63.25 (86.94%).), the developmental stage of the insect was 57.8 days (eggs - 9 days, worms - 26.3 days, fungi - 9.8 days, imago 12.7 days).

Table 2

Effect of electrochemically activated water-based foods on the quality of waxworms

№	Experiment options	Number of eggs obtained (pieces)	Number of worms hatched from eggs (pieces)		Number of mushrooms (pieces)		Number of butterflies, (pieces)		Insect development stage, day			
		Pieces	Pieces	%	Pieces	%	Pieces	%	egg	larva	mushroom	imago
1.	The current method of control (pH=7±0,5)	100	86,75	86,75	70,5	81,2	60,25	85,5	9	26	9,8	13,0
2.	Electrochemically activated tap water “O’HQITI” recipe (pH=10±0,5)	100	88,25	88,25	73,25	83,00	64,5	88,05	9,0	26,0	9,8	13,0
3.	Recipe for electrochemically activated tap water H.R. Mirzalieva (pH=10±0,5)	100	89,25	89,25	72,75	81,51	63,25	86,94	9,0	26,3	9,8	12,7

“O’HQITI” recipe The output of worms from 100 eggs (option 2) was 1.5% higher than the control option, the number of fungi was 2.8%, the number of butterflies was 2.45% higher. The survival rate of worms was found to be 1.5% higher and that of fungi 1.11% higher. Mirzalieva's prescription also showed that the results were higher than the control option.

On the basis of electrochemically activated tap water in the reproduction of large wax soot ЎҲҚИТИ ва and The recipes recommended by X.R.Mirzalieva were more effective than the control option. This can be explained by the fact that the alkalinity of the medium in electrochemically activated tap water (pH = 10 ± 0.5), low overall hardness and low content of chloride and sulfate ions in it led to an increase in nutrient content.

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