WATER BASED DISINFECTION OF BIOFACTORY ROOMS IN ELECTROCHEMICALLY ACTIVATED ACIDIC ENVIRONMENT (pH = 3-4)

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Annotation. This article examines the electrochemically activated acidic environment of biofactory rooms and ways of water-based decontamination.

Keywords. rN = 3-4, Cytotroga cerealella Olive, MELESTA, chlorides, sulfates ...

Introduction. At present, in the field of cotton growing in the Republic of Uzbekistan in the fight against pests, especially root and caterpillars, biologically used trichogramma mosquitoes. Trichogramma is propagated in cereal moth (Citotroga cerealella Oliv) butterfly eggs (citatroga) in biofactory and biolaboratories. The process of breeding moth eggs mainly involves the preparation of barley grain for citrate larvae infestation, barley grain mating with citrate larvae, care of caterpillar larvae, and collection of eggs from moth moths [1].

The main part. The quality of the trichogram propagated by this method, ie the preservation of its natural biological properties, depends on the technology of reproduction of the bioproduct and the existing conditions in the laboratory (room temperature, relative humidity, cleaning the room from harmful microorganisms, etc.). In this regard, we base the process of breeding barley moth eggs in biofactories on the use of an acidic part of electrochemically activated water (anolyte, pH = 3-4) to clean the room air composition and barley grain from harmful microorganisms used in the production of barley grain with citrate larvae. conducted experiments.

The experiments consisted of 3 variants and were performed in 3 laboratory rooms in three repetitions. In this case, option 1 (control) is the method used in room 1, the use of tap water in the cleaning of room air by ventilation (ventilation) and grain moisture regulation, option 2 in room 2 with electrochemically activated water in an acidic environment (pH = 3 ± 0.5). disinfection with part and use in grain

moisture normalization, option 3 was based on disinfection and grain moisture normalization in room 3 with electrochemically activated water having an acidic environment (pH = 4 ± 0.5).

We used the Scarlet variety of barley to propagate citatroga eggs from barley grains. The temperature and relative humidity in the rooms were maintained at the applicable norms (24-250S and 80-85%). Electrochemical activation of water used for the study was carried out on the device MELESTA (TU 5156-002-32064511-07, certificate № ROSS RU.AYa36.V29156) manufactured in the Russian Federation.

The device is designed to operate at a temperature of +5 to +400 C and a humidity of not more than 80%. It consists of 4 parts, which consist of a main vessel, an electric current regulator, a diaphragm cup, and a lid on which the electrodes are mounted. The cathode part of the device is made of stainless steel and the anode is made of titanium coated with ruthenium oxide.

When water is electrochemically activated, one of the two electrolysis products is acidic (liquid at the anode part of the anolyte source) and the other is alkaline (liquid at the cathode part of the catolite source). it is also different from natural water.

Results. Physicochemical parameters of tap and electrochemically activated water used for the experiments were determined in the laboratory "Water Analysis" of the Namangan Regional Center for Sanitary Epidemiology and Public Health before the start of the experiment. According to the results of the analysis, the hydrogen index of tap water obtained for use in option 1 was pH = 7 ± 0.5, the total hardness was 5.8 mg / dm3, the amount of Cl- ion was 53.2 mg / dm3, and the amount of SO4-2 was 158.5 mg. / dm3. Hydrogen indicator of activated water, planned to be used in option 2 (activated on the device for 10 minutes and determined by hydrogen indicator using litmus paper) rN = 3 ± 0.5, total hardness 4.3 mg / dm3, chlorides 46.4 mg / dm3 and sulfates 132.96 mg / dm3 and is planned to be used in 3 variants (activated in the device for 8 minutes and hydrogen indicator using litmus paper) determined) of the activated water with a hydrogen index of pH = 4 ± 0.5, the

total hardness of the activated water was 3.6 mg / dm3, the amount of chlorides was 42.3 mg / dm3 and the amount of sulfates was 130.9 mg / dm3.

Table 1

Some physicochemical parameters of ordinary and electrochemically activated water obtained for experimental use

(February 11, 2021)

S/n	Options	pH	Total hardness, mg.eq / dm3	Chlorides Cl-, mg / dm3	Sulfates SO4, mg / dm3
1	Simple tap water (for current use in 1 room)	7±0,5	5,8	53,2	158,5
2	EFS activated on the device for 10 minutes (for practical use in 2 rooms)	3±0,5	4,3	46,4	132,96
3	EFS activated on the device for 8 minutes (for practical use in 3 rooms)	4±0,5	3,6	42,3	130,9

On the first day of the experiment, a Petri dish containing 25 grams of endogenous nutrients in each of the four corners of each room where the experiments were performed to detect harmful microorganisms in the air of the laboratory rooms was opened on February 9, 2021 at 8:30 am. The samples were then sealed and taken to the Bacteriology Laboratory of the State Center for Diagnosis of Animal Diseases and Food Safety in Namangan Province, where they were kept at a temperature of 37 degrees Celsius for 24 hours to ensure the emergence of microorganisms. After germination of the microorganism in the nutrient, the type was determined by Gram's method. 25% of positive and 7% of negative cocci in the air of 1 laboratory selected for control of the result, up to 24% of positive and 6% of negative cocci in the air of 2 laboratories selected for the experiment and up to 25% of positive in 6% of the air of

3 laboratories and 7% grams of negative cocci. In turn, the microorganism in the air of the room is conditionally present in the grain of barley in the laboratory.

In this regard, a total of 100 grams of samples were taken to determine the amount of harmful microorganisms in barley grain, which was divided into quartets for contamination during the production process, but not contaminated with citrate seeds. The sample was taken directly to the Bacteriology Laboratory and immersed in distilled water in a 200-gram beaker for 24 hours. Then, with the help of a Pasteur pipette, 0.5 ml of the extract from the beaker was sampled and inoculated into an endo nutrient medium over an alcohol lamp in the boxing room of the bacteriology laboratory. The sample was grown in endo nutrient medium TS-80 at 37 ° C for 24 hours, and the growing colonies were examined under a microscope and described. According to him, in the endo nutrient medium in the petri dish, a large number of small round spherical moss-like margins were formed, the edges of which were pale and airy. As a result, it was found that about 26% of barley grains in the process of production contained about 1 gram of positive and up to 8% of grams of negative cocci. At the same time, 300 ml of EFS was injected from one place every two days. On 21.02.2021, samples were taken to detect harmful microorganisms in the air. The results were obtained for control of 20% positive and 5% negative cocci in 1 laboratory room air, 14% positive and 4% negative cocci in 2 laboratory air samples selected for experiment and 16% gram positive and 3% in 3 laboratory air samples. 4% showed the presence of negative cocci. It can be seen that the 2 laboratory rooms treated with a part of the EFS with pH = 3 ± 0.5 ha were better cleaned and more efficient than the variants other than gold microorganisms (Table 2).

Table 2

The amount of harmful microorganisms in the air of laboratory rooms during the experiment (February 21, 2021)

S/n	Experimental rooms	Spent for Purkash EFS volume, l	Amount of harmful microorganisms,%	
			Gram positive coke	Gram negative coke

1	Ventilation of the room and the use of tap water (pH = 7 ± 0.5) to regulate grain humidity (current method, 1 room)	-	20	7
2	Purification of room air with the acidic part of EFS (pH = 3 ± 0.5) and use in the regulation of grain moisture (experiment, room 2)	4,5	14	4
3	Purification of room air with acidic part of EFS (pH = 4 ± 0.5) and use in grain moisture regulation (experiment, 3 rooms)	4,5	16	5

For the production of barley grains used to control microorganisms in it and to regulate the moisture content of barley, 10 days after the date of contamination of barley, ie from 21.02.22021, after the onset of barley grain, 200-300 ml of water in each cuvette. and in the experimental variants, the anolyte part of the EFS was treated. In this case, barley grain in 2 laboratories was moistened with the part with EFS pH = 3 ± 0.5 ha, and barley grain in 3 laboratories with the part with EFS pH = 4 ± 0.5 ha. Processing was carried out once a day until the first flight of butterflies from the frost. On 30.02.2021, samples were taken to determine the amount of harmful microorganisms in barley grain.

The results of the study are as follows:

- Effective use of electrochemically activated water in the acidic part (pH = 3-4) in the cleaning of laboratory rooms from harmful microorganisms, in the process of direct production, as opposed to chemical treatment;

- The part of electrochemically activated water with an acidic environment (pH = 3-4) is different from the part in the alkaline environment and can be used for up to 15 days from the date of extraction;

- 10-12 days from the date of contamination of barley grain to the day when the first flight of butterflies can be observed;

- Electrochemically activated water from barley grain in the process of multiplication of caterpillar eggs (citatroga) in the process of multiplication of seeds on average of 250-300 ml per 10 kg of grain is the best option.

- In the breeding of barley moth eggs with barley grain increases the efficiency of production by 15-20% and reduces the working day by working with the acidic part of the room air and electrochemically activated water of barley grain.

- Increased production efficiency of barley grain with the acidic part of the electrochemically activated water (pH = 3-4) in the process of increasing the grain moth moth. may be associated with an increase in grain nutrition of glucose formed as a result of hydrolysis.

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