Economic Efficiency of Using Electrotechnological Device During Revitalization and Care of Mulberry Silkworm Seed

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ABSTRACT

Abstract: In this article, experiments were conducted on the practical method of revitalizing and maintaining mulberry silkworm seeds and the electro technological method. Also, by using an electro technological method for the revitalization and maintenance of mulberry silkworm seeds by saturating the air of the incubator and worm house with negative ions using an aero ionization device during the cultivation of mulberry silkworm cocoons, the process of revitalizing the mulberry silkworm seeds was shortened, the percentage of revival increased and In the process of caring for mulberry silkworms, various diseases can be prevented and thus the possibilities of increasing cocoon productivity are presented. In addition, the calculation results of the economic efficiency achieved by using a new electro technological device for the process of incubation and care of silkworms are presented.

Keywords: Ionic; aerotonizer; silkworm; electric field; electron; corona discharge; air ion

Silk production is practiced in more than 60 countries around the world, and the main share of the pillow raw materials produced corresponds to the People's Republic of China. (Matthew 24:14; 28:19, 20) Jehovah's Witnesses would be pleased to answers with you. (Matthew 24:14; 28:19, 20) Jehovah's Witnesses would be pleased to discuss these problems. In the silk industry, quality silk depends primarily on the quality and characteristics of the pillow. (D.A.Ismatorov, 2021[1]) Jehovah's Witnesses would be pleased to discuss these answers with you.

It is well-known that lightweight negative ions in the atmosphere are known to have a positive effect on humans and livestock in certain doses, that lightweight and heavy ions do not have such an effect, that certain doses of aeroionization can strengthen oxidation-recovery and mode conversion processes in the body of livestock and parrots, the exchange of gas in the lungs, and the activity of enzymes increase protective function.

In fact, how is air aeroionization carried out? The air around us contains neutral atoms, molecules and ions of the gases that are part of it. Ions or aeroions are formed when neutral atoms and molecules of gases in the air give their electrons or add alien electrons to themselves. The resulting embryo was placed in nutrients and then inserted into her womb, where it implanted [4].

Natural ionization of air occurs under the influence of radioactive substances and cosmic rays in the soil and air. 1 cm^3 in the air outside

700... There will be less than 100 aeroions in 1 cm 3 air of 1000, solid rooms[2,3].

It is known that the ionic composition of air in closed buildings, where silkworms are fed, differs sharply from the ionic composition of air in the environment. Some of the lightweight ions coming with air settle on elements of the ventilation system, while the remaining light ions inside the building disappear into heavy ions. As a result, silkworms are commonly observed to become infected and to decrease nutrition. Theoretical and experimental research was carried out to study the impact of artificial electrical ionization on the quality of the air in the living rooms of silkworm seeds under the aus of T.Butaev and D.I.Abdunabiev (2020-2022). Scientific research is also under way to apply artificial ionization to the environment in the process of caring for silkworms. The resulting embryo was allowed to develop in nutrients and then inserted into her womb, where it implanted [4,5].

The electrotechnological device, which stimulates the air in the life and maintenance of silkworm seeds, was tested between 2020-2022 in the process of animate and maintenance of silkworm seeds in the incibator, located in Newfoundland MFY of the "AGRO Pillow" MCHJ in Bogotá, Fergana region. Based on experiments conducted in testing, economic efficiency was calculated based on the results obtained by stimulating and caring for the seeds of silkworms, both artificial aerospace and artificial ventilation in the life and maintenance of the silkworm seeds. Table 1 The resulting embryo was allowed to develop in nutrients and then inserted into her womb, where it implanted.

1-Table

Effect of electrotechnological device on the revival of silkworm seeds

Variantlar	Zot and hybrid-lar name	Qaytarish	Put into practice seeds sound, woman	Number of non-inanimate seeds, grain	Percentage of Life, %	Inkubatsiya davrini davomiyligi, when
1-inkubatoriya (experience)	Liniya 27 x K-108	1	620	11	98,2	6
		2	630	14	97,8	6
		3	637	9	98,6	6
		O'rtachasi	629	16	98,2	6
	Ipakchi 2	1	702	13	98,2	7
		2	697	25	98,3	7
		3	691	22	96,8	7
		O'rtachasi	697	26	97,8	7
2-inkubatoriya (qiyoslovchi)	Liniya 27 x K-108	1	600	44	92,5	8
		2	710	28	96,1	8
		3	680	31	95,4	8
		O'rtachasi	663	36	94,6	8
	Ipakchi 2	1	710	31	95,6	9
		2	730	31	95.7	9
		3	680	24	96,4	9
		O'rtachasi	706	30	95,7	9

In the test, it took an average of 50 minutes to re-heat the room after opening windows every120 minutesfrom 40 minutes. The life cycle lasted for 8 days, and the maintenance period lasted 7 days (from the age of 1-3). In this way, we calculate the cost of energy resources to revive silkworm seeds by means of the following expression (500 kg of coal was used for heating):

$$W_i = T_k\, P_i;\ kg$$

Here: -the duration of the life and maintenance of silkworm seeds (day), -daily spent energy resources for heating (black coal, kg);$T_k T_i$

$$W_{i1} = 15 \cdot 33{,}3 = 500\ kg$$

In the current way: -the duration of the life and maintenance of silkworm seeds (15 days), -daily spent energy resources for heating (black coal, 33.3 kg);$T_k T_i$

The proposed air aerospace was also enriched with /yes vo ions by using an electrotechnological device with an artificial ventilation (at the same time as natural ventilation) with a capacity of 0.020 kVtsoat. The resulting embryo was allowed to develop in nutrients and theninsureed into her womb, where it implanted. During the season, the electrotechnological device consumed 1.04 kVt/h of electricity. And 200 kg of coal were used. Therefore, the cost of energy resources in the field of electrotechnology is as follows:

$$W_{i2} = 13 \cdot 15{,}38 = 200\ \text{kg}$$

The biological indicators collected in the process of caring for silkworms are listed in Table 2.

2-Table
Tut still qurtining biologic ko'rsatkichlari

№	Variantlar	Qaytarish	Xorij duragayi Jingsong Haoyue		Local hybrid Ipakchi 1 x Ipakchi 2	
			Death of worms, %	Qurtlarni hayotchanligi, %	Death of worms, %	Qurtlarni hayotchanligi, %
1	The worm where the device is laid (tajriba variants)	1	0,2	94,5	0,9	90,0
		2	0,6	92,5	0,3	93,5
		3	0,1	95,0	0,2	94,0
		O'rtacha	**0,3±0,21**	**94,0±0,78***	**0,5±0,05**	**92,5±1,5****
2	Worms where the device has not been put (nazorat variants)	1	1,9	84,0	4,0	80,5
		2	2,8	87,0	4,2	83,0
		3	3,2	81,0	4,4	82,5
		O'rtacha	**3,0±0,13**	**84,0±0,94**	**4,2±0,21**	**82,0±0,89**

According to table 2, the death of worms (on average in three rotations) in experimental variants of foreign hybrid silkworms was 0.3%. The control option (in the room where the device was not inserted) was found to be 3.0%. It was confirmed that the study's results were confined to 2.7% compared to the control option.

It is noteworthy that no cases were observed in the worm house where the device studied was placed. However, in a small amount of worms cared for in a simple room (control), bacterial and yellow (nuclear poledrosis) diseases were found.

The life expectancy of silkworms was 94.0% in the experimental room and 84.0% in the control room. At this rate, it turned out that worms are 10.0% higher in life expectancy, resulting in the possibility of each box of silkworms getting an additional 4 kg of pillows.

Today, in the District of Bogotá, 2,762 boxes of silkworms are revived. The number of incoutoria in the district is 12, distributed from an average of 230 boxes. We determine the difference in energy resource costs in i n cutoria, which is designed to revive 230 boxes of silkworm seeds in goods and under the proposed technology:

$\Delta E_e = (W_{i1} - W_{i2}) \cdot \text{N} \cdot \text{Q}$; so‘m.

Here:- The number of N-inccubatoria Q-black kcoal price:

$\Delta E_e = (500 - 200) \cdot 12 \cdot 1450 = 5\ \ 220\ 000$ so‘m.

If in one season the introduction of electrotechnological methods of renastructal and maintenance of smoke silkworm seeds in the district will result in the receipt of an

additional 4 kg of pillows from each silkwormseed:

$\Delta E_{q.p} = n_q \cdot \text{M} \cdot k_n$,

Here: -the number of silkworm seed boxes, -additionally taken pillow, -pillow price together with additional kn_qM$_q k_n$ompensation (1 kg of pillow price 29,500 soums):

$\Delta E_{q.p} = 2762 \cdot 4{,}04 \cdot 29\,500$ =329 175 160so‘m.

Economic efficiency on a total received district scale per season:

$$\Delta E = \Delta E_e + \Delta E_{q.p}$$

$\Delta E = \Delta E_e + \Delta E_{q.p}$=329 175 160+5 220 000 =334 395 160 so‘m.

In one inccubatoria per season, an additional efficiency of 334,395,160 gallons [334,395,160 L] will be achieved.

From this profit, the cost of an electrotechnological device that both air-conditiones and artificial ventilators is 3,455,000 gallons [3,455,000 L] and the cost of electricity consumed by an electrotechnological device is 306.8 gallons [306.8 L] of electricity in a seasonal circuit expected to be 334,395,853.2 gallons [334,395,853.2 L].

This electrotechnological device , along with cleaning the air in the worm from all kinds of microorganisms and bacteria, was not observed to spread diseases in the process of caring for silkworms because of an increase in the amount of negative ions in the air, and it was assessed for having a profound effect on the development of silkworms, passing them from age to age, climbing, and wrapping quality pillows.

This electrotechnological device is intended to be used in the process of stimulating and caring for silkworm seeds— breeding facilities, breeding stations, special worms, and worm-feeding households in the Republic— and will be able to successfully conduct the silkworm maintenance season and obtain quality pillow yields.

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