

Technological Indicators of Cocoons When Kill the Sponge in the Cocoon Using the Universal Dryer (Usk-2e)

Normatov Ro'zibek Jo'raqul o'g'li ¹, Sharipov Hakimbek Asror o'g'li ²,

Odilova Nilufar Bahodir qizi ³, Soatova Farida Choriyevna ⁴

¹ PhD student of Samarkand State Veterinary, Animal Husbandry and Biotechnology University, Tashkent branch

^{2,3,4} Student of Termiz Institute of Agrotechnologies and Innovative Development

Abstract:

This article describes the technical characteristics of the Universal dryer (USK-2E) created by scientists of the Tashkent State Agrarian University. the effect has been studied scientifically and theoretically. The results of these scientific-research works are analyzed in depth, and practical recommendations are given to cocoon receiving factories, farms and cocooning clusters.

Keywords: silkworm, live cocoon, dry cocoon, mushroom, breed, count, hybrid, graduated cocoon, unchangeable cocoon, black cocoon, temperature, humidity, silkiness, metric number, molting.

Enter. Currently, the raw material of cocoon produced does not meet the requirements of the time with its quality indicators. Apart from that, there is no scientific research on drying live cocoons in nontraditional ways. In terms of carrying out such scientific research and producing methods of preliminary processing of cocoons, we are behind a number of skills from countries with well-developed sericulture, such as China, India, Brazil, Thailand, and Japan.

As a result of the long-term operation of existing cocoon drying units in production today, it has become clear that it is necessary to carry out extensive repair work, and for this, a sufficient number of repair parts. In addition, the possibilities of sufficient use of existing aggregates are limited. We can take as an example that the purchase prices of the gas and diesel fuel that we use are increasing year by year. We can see the difficulty of the problem from the fact that the use of various

chemicals for drying cocoons is increasing in most cocoon processing enterprises. During the preliminary processing of cocoons in cocoon drying enterprises, sorting of cocoons, correct and accurate assessment of their quality, as well as preparation of high-quality dry cocoons with economic and effective implementation of cocoons drying, quantity and quality of cocoons wrapped in silkworms. It is desirable to increase the quantity of high-quality cocoons and prepare cocoons that can meet the requirements of the world market using a new technological methodology.

Improvement of the food base of silkworms, feeding of silkworms with fertile mulberry leaves, raising cocoons based on high agrotechnics are being carried out, but the improvement of the preliminary processing technology is considered to be one of the most important factors.

Research methods and materials; During the experiments, 4 options were created using the hybrid "Chofun" X "Bayye" of the Iraqi mulberry worm, which is available in production at the Agro pilla LLC enterprise in Zharkorgan district, Surkhondarya region, each option has 4 returns, 2.0 in each return -2.5 kg. live cocoons are measured.

The following options are available for research:

Option 1: After 7-8 days after the silkworm emerges from the cocoon, it is put into the selected aggregate, and the temperature is 70-80 C in the 2nd and 4th hours to determine the effect of the condition of the dome inside the cocoon.

Option 2: 7-8 days after the silkworm emerges from the cocoon, it is placed in the selected aggregate at a temperature of 80-85 C and the state of the cocoon inside the cocoon is determined at 2 and 4 hours.

Option 3: 7-8 days after the silkworm emerges from the cocoon, it is placed in the selected aggregate at a temperature of 90-95 C and the state of the cocoon inside the cocoon is determined in 2 and 4 hours.

Option 4: 7-8 days after the silkworm emerges from the cocoon, it is placed in the selected aggregate at a temperature of 95-100 C and the condition of the cocoon inside the cocoon is determined in 2 and 4 hours.

The effect of temperature on silkworm cocoon was studied using the new technological equipment of cocoons grown on farms, the technological parameters of dried cocoons were analyzed, and the possibilities of using this method in sericulture were studied. As a result, it helped to solve the requirements for cocoon drying units in the current cocoon drying enterprises.

Research results and their discussion; We used USK-2E to process the cultivated cocoon product, which is very relevant for scientific research today. In order to dry live cocoons in this device, it started with feeding silkworms at the Agro Coir LLC enterprise in Zharqorgan district of Surkhondarya region. A total of 1 box of silkworms was fed to obtain the same material as an experiment. Silkworm feeding began on April 15, and related preparations, including disinfection of worm houses, preparation of silkworms for feeding silkworms, were carried out based on agrotechnical requirements. For the experiment, the high-yielding "Chofun" x "Baye" hybrid, which is being introduced into production at the Agro-cocoon LLC enterprise in Zharqorgan district of Surkhondarya province, was taken and fed in the hygrothermal regime recommended by the rules of agrotechnics. In order to maintain the quality indicators of cultivated living cocoons at a high level, it is important not only to feed them at the level of agrotechnical requirements, to pick them in time, but also to pre-process them in time. In order to increase the efficiency of the drying of universal agricultural products, it is necessary to use the method of planning the rate of arrival of live cocoons to the cocoon. The theoretical distribution of live cocoon arrival is given in table 1.

Table 1. Schedule of arrival of live cocoons to the Agro-Pilla LLC enterprise (2023)

Cocoon preparation days	Daily cocoon preparation % during the season			
	11 days	13 days	15 days	17 days
1	0,6	0,4	0,4	0,3
2	2,0	1,2	0,9	0,7
3	5,7	3,3	2,2	1,5
4	12,0	7,1	4,4	3,0
5	18,8	12,2	7,8	5,2
6	21,8 ^x	16,6	11,6	8,0
7		18,4 ^x	14,7	11,0
8			16,0 ^x	13,3
9				14,0

The peak day of symmetrical distribution of living cocoons. According to ten years of data, placing silkworm eggs in the incubator at the optimal time has a direct effect on the quantity and quality of the obtained cocoons. It also affects the fertility of mulberry leaves. When reviving worms and taking care of them on mulberry branches, aiming at the appearance of 5-6 leaves, the average yield is high, and quality cocoons are obtained in practice.

Taking this into account, when the silkworm seeds are fed by the differential (zynopoia) method, it is possible to avoid cancer heat and to finish the season before the mulberry leaves harden, using the fast worm feeding method. In the conducted experiments, when the revival of seeds by the ladder method was extended for 10-11 days, compared to the actual 2-3 days, the arrival of cocoons was much longer. When this experiment was re-examined in most districts, the emergence of cocoons was extended to 17-18 days compared to the current 11-12 days, but 75-80% of the cocoons arrived in 4 days with the previous method, when the ladder method was used. It was found that it lasted for 8 days.

Therefore, in order to increase the efficiency of the universal agricultural products drying facility (due to the low volume of re-production), following this agrotechnical measure creates the possibility of timely and high-quality preliminary processing of the cocoons delivered to the cocoons.

Cultivated cocoons were harvested on May 20-21 and handed over to the cocoons of Angor district, Surkhandarya region. The initial processing of the cocoon was carried out in the area where the Universal device is located. The parameters of the cultivated cocoon are given in 2 tables.

Table 2. Biological indicators of cocoons grown at Agro cocoon LLC enterprise (2023)

A bred hybrid	The cocoon is heavy g.	Shell weight g.	kg from 1 box	Unseeded cocoons kg	Carapachak cocoon kg.
“Chofun” x “Baye”	1,85	0,480	69,0	15,0	3,0

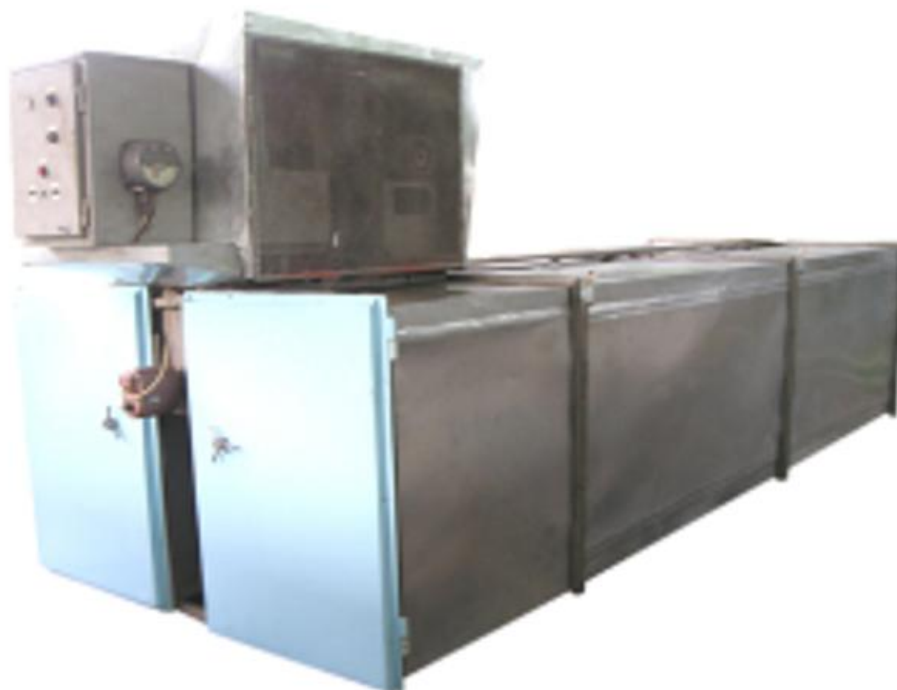
Total grown cocoons were sorted once again before pretreatment and experimental returns were formed for pretreatment studies in a universal drying setup. 2.5 kg for return if research program is followed. and 10.0 kg of cocoons were prepared for the option from

Information on the condition of the cone depending on the time of initial processing is presented in Table 3.

Table 3. Effects of hot air flow on living cocoons in a universal dryer (2023)

Options	Temperature	2 hours	4 hours
First	70-80°S	The mushroom is dead	The cocoon is half dry
Second	80-85°S	The mushroom is dead	The cocoon is half dry
Third	90-95°S	The mushroom is dead	The cocoon is half dry
Fourth	95-100°S	The mushroom is dead	The cocoon is half dry

The obtained data show that there is a possibility of preliminary processing of cocoons grown on farms in the universal agricultural products drying device. With this device, it is possible to semi-dry the sponge in the cocoon. Semi-dried cocoons can be further processed in shade dryers. We can consider that the possibilities of using this dryer for complete drying of cocoons are limited.

**Figure 1. Universal dryer (USK-2E)**

After preliminary processing in this device, the cocoons were sent to the laboratory of the Surkhan silk cocoon spinning factory located in Termiz, Surkhandarya region for technological evaluation. The obtained data are presented in 4 tables.

Table 4. Technological indicators of cocoons killed in a universal dryer (2023)

№	Cocoon pretreatment options	Cocoon silkiness, %.	The length of the fiber being fed to the first break, m.	Worm of the cocoon, %.
1.	First 70-80 C	45-47	1050-1100	75-77
2.	The second is 80-85 C	46-47	1100-1200	75-77
3.	Third 90-95 C	44-46	1150-1200	78-77
4.	The fourth is 95-100 C	44-46	1100-1050	78- 80

The analysis of the data presented in this table shows that we can carry out the process of preliminary processing of agricultural products drying device for cocoons. In the comparison of the experimental options, the fourth option gives the best results at a temperature of 95-100oC. In general, this device can be used to kill cocoons and semi-dry cocoons.



Figure 3. The process of drying cocoons

Summary; Timely processing of live cocoons grown in sericulture is of great importance, using an agricultural product drying device in the process of processing live cocoons in cocooning, processing in the device does not have a negative effect on the technological performance of cocoons and the quality of processed cocoons indicators fully meet State Standards. As a result of the conducted scientific research, it is recommended to use the device at a temperature of 95-100oC during the initial processing of cocoons.

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