

ANALYSIS OF COCOON SPINNING PROGRESSES

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Abstract

The cocoon silk that separates silkworms is made up of two fibers that are evenly and very tightly connected to each other. Each silk fiber is made of true silk - fibroin and the adhesive that wraps the fibroin in a thin layer - sericin. Due to the presence of sericin, the cocoon shell not only mechanically protects the silkworm, but also regulates the temperature and humidity inside the cocoon. In cocoon factories, the cocoon is melted by evaporating and boiling it in water before spinning the silk. Otherwise it will be difficult to find the single end of the cocoon and spin the raw silk.

In the experiment, the use of ordinary water and calcium carbonate solution when using 50 mg/l solution of "pepsin" in the dissolution of Sericin in the shell of the cocoon in the process of flaking silk from the cocoonganga the relative flaking of silk from the cocoon, the output of raw silk, the total length of the cocoon from one cocoon to

Keywords: silk fiber, fibroin, Sericin, pepsin ,siysium bicarbonate, breed and hybrid, cocoon shell, steamer, dry cocoon, Los floor, continuous length of fiber, linear density of fiber.

Introduction

The dashing experience of Economic Development shows that the growth of the agrarian sector is one of the main factors in the development of Agriculture. Therefore, in the near future, special attention is paid to agriculture in the balance of macroeconomic indicators for the sustainable and continuous development of the country's economy.

The most important task in raising the economy of Uzbekistan in a short period of time is the efficient use of raw materials, its full processing and delivery to the level of finished products. In the conditions of the market economy, it is required to prepare the raw materials of the cocoon grown in our country and the quality of the raw silk obtained from it in accordance with the world standards, to produce products that are in demand from natural silk and meet the modern requirements and to increase their range.

Despite the fact that the price of fabrics made of natural silk is expensive in the world market, the demand for them is increasing.

One of the main issues for us is that as a result of the storage of the pillars, the enormous environmental conditions, Metrological conditions and various other factors impair the structure of the pillani layer under the influence of various other factorslishi, the wardrobe of the layers of yarn, prevent the wear of the series and improve the characteristics of the Because more and more of the steps that come to the factories make up such steps. This ensures a

significant increase in the amount of raw silk output in the solution of the problem and a greater efficiency is achieved.

One of the main rational research methods of pillani to maintain the indicators characteristic of silk worm breeds and hybrids is to improve its preparation for worm. Also the pill is characterized by the correct implementation of boiling and steaming. Under these conditions, the cocoon shell bursts, the mutual molecules between the cocoon and serine for otgesia are weakened.

Spinning the stairs is similar to the reverse process of winding the stairs, but the process of wrapping the fiber on the bunda stairs goes from the outer floor to the inner side. In addition, the spinning of the pillars will be associated with the defeat of the adhesive property of silk fibers, adhesion resistance in the shell of the cocoon. Because the worm has left its Eighties, which they threw when wrapping the shell of the cocoon, that is, the liquid in the form of silk fibers, not all lengthwise, but in the form of separate bundles. Since the composition of the silk liquid contains its glue — Sericin, the silk fiber in the shell of the cocoon is glued. Such adhesion of fiber in the spinning of the plank gives a specific resistance. Therefore, even during the hissing, it is necessary to overcome this resistance.

In industrial conditions, the batteries are spinning at a speed of 1,67-2,5 m/sec. In other words, the spinning of the stairs is done 260-400 times faster than its winding. This can be done only by slightly reducing the viscosity of the silk fiber adhesive Sericin evazi. In practice, by treating the batteries with steam and high-temperature water, the blowing and softening of the Sericin is achieved. Not only will it be enough to soften the Sericin for spinning the plinches, but also it will also be necessary to reduce the output power of silk fiber from the shell of the plinches. Again, some kind of force should keep it in the water. This means that the stairs can be rotated at such a time that only during the process the excess force is affected when holding the stairs in the water. To form this power, the inside of the batteries is filled with water, as a result of which the batteries begin to germinate, giving an easy three. In order to determine the substances that have a positive effect on the solubility of Sericin in the cocoon shell and, as a result, create the possibility of more silk germination, we conducted the following experiment. According to the plan for conducting the experiment, 3 options were created. In our district for a Har variant, the caretaker-1 silk worm plumage was separated from the sample plumage by 10 kilograms.

Option 1 was a control in which ordinary water was used to dissolve the sericin in the cocoon shell.

In option 2, water mixed with 100 mg / l of calcium bicarbonate solution was used.

In option 3, 50mg / l Pepsin solution mixed with water was used.

Absorption of water by dry cocoons is due to the water permeability of the cocoon shell. It depends on the thickness, softness of the cocoon shell and the method of processing them.

In the experiment, KMS-10 mechanical cocoon spinning machine was used to spin silk from cocoon samples of all variants.

The temperature of the water in the cocoon was the same in all three variants: + 95-96 °C in the steam boiler, + 65-70 °C in the oval boiler, and + 42-45 °C in the washing powder. As a

result, the solubility of sericin in the cocoon shell was 68% in variant 1, 76% in variant 2, 84% in variant 3, and 8-16% higher in variant 2 and 3 than in variant 1, ie the cocoons evaporated in ordinary water. high solubility of sericin was observed when evaporated in an alkaline medium.

The number of cocoons found in these evaporated cocoons was 62% in Option 1, 76% in Option 2, and 82% in Option 3, which was 14-20% more than in Option 1. The speed of cocooning on the machine in the 1st variant is 1.74 m / sec. , In variant 2, 1.86 m / sec. was 1.88 m / s in variant 3, 0.12 m / s in variant 2 and 0.14 m / s in variant 3 compared to variant 1. In the experimental variants, we found that the raw silk yielded relative to the weight of the dry cocoon after the silk was spun from the cocoons.

In this case, the average weight of one dry cocoon (male and female worm cocoons) in the sample obtained for all three variants was 0.860 grams.

The yield of raw silk in terms of dry cocoon weight was 38.4% in variant 1 cocoons, 41.9% in variant 2 cocoons and 42.1% in variant 3 cocoons, 3.5% in variant 2 compared to variant 1. In option 3, 3.7% more silk was spun.

Output from the sample cocoons was 7.36% in variant 1, 6.03% in variant 2, 5.92% in variant 3, and 1.33% in variant 2 and 3 in variant 3, respectively. Which was less than 1.40%. The non-spinning layer inside the cocoon, ie the output of the cocoon in the 1st variant cocoons was 6.45%, in the 2nd variant - 5.24%, in the 3rd variant - 5.12%, in the 3rd variant - 1.21% compared to the 1st variant. , In option 3, it was 1.33% lower. The silkworm cocoon was 52.4% in variant 1, 53.6% in variant 2, 54.1% in variant 3, and 1.2-1.7% higher in variant 2-3 than in variant 1. .

Due to the fact that raw silk is made of thin and light fabrics, the flaws in it are obvious. Therefore, high demands are placed on the quality of raw silk. The yarn should be long and smooth, strong to break, flexible, free of knots, bundles of yarn, mustache and other defects, while the linear density should meet the given requirement.

The quality of raw silk is controlled during the cocooning process in the control collection department, in accordance with the state standard on the appearance of yarns. All quality indicators of raw silk are important in spinning and weaving enterprises. If the density of the raw silk line is less or more than given, the product will have a non-standard mass. To prevent this, it is necessary to carefully select the raw material of the cocoon, properly sort it, to ensure that the spinning process is normal.

Defects that occur during the process of germination occur as a result of tumors and nodules coming out of the shell without correcting the bundles, the formation of which is caused by improper evaporation, the characteristics of the cocoons are not the same.

In the experimental variants, we can see the quality, ie technological parameters of the spun silk fiber from Table 1 below.

Table-1 Technological parameters of spun silk fiber

Indicators	B1 (Normal water)	B2 Ca(HCO ₃) ₂	B3 Pepsin
Cocooning, %	81,4	83,5	84,7
Continuous length of silk fiber, m.	865	910	922
Total length of silk fiber, m..	1090	1136	1152
Linear density of silk fiber, tex	3,21	3,35	3,46
Cleanliness on major defects, %	91,7	94,5	96,2
Cleanliness for minor defects, (%)	88,7	90,6	92,4

Improving the overall quality of products is one of the main tasks today. Regardless of the direction in which the products are produced, its quality must meet the requirements of customers, as well as meet international standards. Therefore, one of the main tasks of industrial enterprises today is to constantly adapt the quality of products to modern requirements and world standards.

The results of the experiment showed that the use of Pepsin 50 mg / l solution in the dissolution of sericin in the cocoon shell in the process of silkworm cocooning was higher than in ordinary water and calcium bicarbonate solution. achieved to obtain fine quality silk raw material.

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