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DETERMINATION OF THE REVIVABILITY OF THE MULBERRY SILKWORM EGGS IN THE SPRING PERIOD BY AUTOMATED AND TRADITIONAL METHODS

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ABSTRACT

This article presents the results of a study on the process of reviving the eggs of a foreign hybrid of the silkworm "HUATONG", which was revived in the spring period in two ways, one of which is simple, widely used by specialists, and the other is used in automated hatcheries with optimal temperature and humidity. For these studies, the hatchery of the farm "Shukhrat bogi Baraka" of the Qorakhitoy region of the Akhangaran district of the Tashkent region was selected. The experiments were carried out with the first batch of eggs in 4 variants and 12 replications; in each replication was 1000 eggs. The number of revived caterpillars and non-revived eggs were analyzed, and the percentage of revivability by replication was comparatively analyzed.

KEYWORDS: *Spring, Summer, Season, Breed, Hybrid, Silkworm Eggs, Silkworms, Party, Resuscitation Methods, Incubator, Temperature, Environmental Factors, Light, Food,Incubation.*

INTRODUCTION

The growing demand for natural fabrics in the world market from year to year has led to the production of natural silk and silk products, as well asrequires mulberry silkworm eggs, their revitalization, cocoon preparation, pre-processing, cocoon spinning and finished products on the basis of new intensive technologies

Based on the above, scientific and practical research on the production of quality superelite, elite and industrial mulberry silkworms is currently being conducted in more than 20 countries around the world.

Presently, 75-80% of mulberry silkworm eggs are produced in the Peoples Republic of China, 11-12.5% in India, 1.3% in Uzbekistan and the rest in other countries where silkworm breeding is developing.

Creation of a new generation of silkworm breeds and hybrids in scientific research institutions of developed countries, which are resistant to changing environmental conditions of spring and summer, meet all the requirements of biological and all productivity indicators worm farms, along with the development of excellent methods and intensive technologies for the revival of silkworm eggs, bringing their cocoon productivity and technological properties to a level that meets the requirements of industrial enterprises, certain results have been achieved in their production testing on farms and in specially organized incubators.

In order to further develop the silk industry in Uzbekistan, make full use of existing opportunities, increase the material interests of the rural population by providing them with permanent jobs, re-equip silk enterprises with new equipment and technologies and attract foreign investment and production of new scientific developments through the introduction of intensive technologies, particular attention is paid to increasing the quantity and quality of products.

Especially by the President of the Republic of Uzbekistan in 2018, Resolution No PQ-3616 of March 20 "On additional measures for the further development of the silk industry" defines the strategic directions and prospects of research in the silk industry, extensive testing of scientific and selection achievements through the rapid development of the industry, further development of mulberry silkworm breeds and hybrids, primary breeding of mulberry varieties, the widespread introduction of advanced scientific developments and intensive agro-technologies, taking into account the natural climatic conditions of the regions.

Research materials and methods

Our research was conducted in the incubator of the farm "Shukhrat Bagi Baraka" in the Karahitay region of Ahangaron district of Tashkent region.We know that the sharp changes in natural climatic conditions in recent years have created a number of difficulties in the process of timely implementation of agro-technical measures.It is especially important to keep the temperature and humidity in the incubator at a constant level in the process of revitalization of mulberry silkworm eggs in the spring in different regions of the country.Otherwise, the

embryonic development and revitalization of mulberry silkworm eggs leads to a decrease in the biological and, in turn, the productivity of the larvae of the cocoon.

It has been proved that positive results can be achieved by reducing the impact of the above adverse consequences as well as scientific research has been conducted to increase the economic value traits of silkworms.

The main purpose of the study was to develop a modern innovative new agrotechnology to increase the percentage of mulberry silkworm eggs revitalization in the spring and summer seasons for silk clusters, farms and home-grown worms, as a result, the research showed that the percentage of revitalization of eggs revived by the automated method was higher and more positive than the percentage of revival of eggs revived by the simple (comparative) method.

As a starting material in the spring from the eggs of the 1st batch of silkworms "HUATONG" hybrids imported from abroad 3000 pieces of samples were taken in four variants of three replications.

The number of eggs in each variant and replication, eggyolk weight, one egg weight, arithmetic mean, number of physiologically defective eggs, and number of eggs laid for resuscitation (gr) were calculated, and each replication and variants were placed in two different ways.

The first method: In the method used by ordinary (comparative) local experts, the incubator temperature was heated with room-mounted heating equipment and the humidity level was adjusted using a damp sheet, the room floor was wetted every 2-3 hours and a bucket of water was placed in different parts of the room.

The temperature and humidity in the room was measured for 2-3 hours using psychrometer, and the results of the study were recorded in a special workbook.

The second method (experiment) the temperature and humidity in the automated incubator were kept constant and controlled by an ultrasonic device with an automatic control system to ensure that it did rise or fall sharply above the norm.

The temperature and humidity in the incubator room were measured every 2-3 hours using an ultrasonic device and psychrometers, thermometers, and the results of the study were recorded in a special workbook.

Today, a group of leading scientists in Uzbekistan are working in order to create strains and hybrids of mulberry silkworms that are resistant to extreme natural climates and various environmental factors in the spring and summer seasons, as well as to improve their biological and cocoon productivity [1], creation of high-yielding hybrids, which are manifested during the breeding season of the breed in order to produce purebred hybrids at breeding seed stations and seed enterprises[2], changes in reproductive traits in the population of pure breeds of silkworms under adverse environmental conditions[3], manifestation of cocoon productivity indicators of F_2generation breeds under adverse stress conditions[4], methods of obtaining interspecific and interspecific hybrid combinations of silkworms [5], the effect of differential resuscitation of mulberry silkworm breeds and hybrids, the correct timing of revival, the quality of cocoons collected, delivered and stored in rearing house [6], the effect silkworm feed on the biological cocoon productivity and technological properties of silkworm larvae of mulberry leaf varieties and the level of nutrients [7-11], extensive scientific research has been carried out and positive results have been achieved.

However, insufficient attention has been paid to scientific research on improving the viability, cocoon productivity and technological properties of mulberry silkworm eggs by reviving them at the same temperature and humidity, based on new technologies and mechanized electronic control, in the rapidly changing, unfavorable natural climate of spring and summer.

RESEARCH RESULTS

In our experiments, the goal is to grow fine-grained cocoons that meet the requirements of cocoon processing enterprises in the spring and summer cocoon clusters, farms and home-grown worms with a high recovery rate, healthy, in general, the biological, cocoon productivity and technological characteristics of larvae, we conducted experiments on the imported HUATONG hybrid.

When we compare our experience with the arithmetic mean differences in the percentage of seed revival of HUATONG hybrids in an automated incubator and a simple (comparative) incubator in the spring of 2021, the samples obtained are shown in Table 1.

TABLE 1 REVIVAL RATE OF MULBERRY SILKWORM EGGS (SPRING 2021) HUATONG №1 BATCH IN AUTOMATED HYGROTHERMAL MODE

№	Breeds and hybrids	Number of batches	Number of samples	Total number of eggs, pieces	Number of live worms, pcs	Number of non-live worms, pcs	Revived worms,per centage
1.var.	“HUATONG”	1-batch	replication 1	1000	986	14	98,6
2. rep.	"HUATONG"		replication2	1000	985	15	98,5
3. rep.	"HUATONG"		replication3	1000	982	18	98,2
Average:				**1000**	**984**	**16**	**98,4**
2.var.	“HUATONG”	1- batch	replication 1	1000	984	16	98,4
2. rep.	“HUATONG”		replication2	1000	983	17	98,3
3. rep.	"HUATONG"		replication3	1000	984	16	98,4
Average:				**1000**	**984**	**16**	**98,3**
3.ver.	“HUATONG”	1- batch	replication 1	1000	983	17	98,3
2. rep.	"HUATONG"		replication2	1000	985	15	98,5
3. rep.	"HUATONG"		replication3	1000	986	14	98,6
Average:				**1000**	**985**	**15**	**98,4**
4.var.	“HUATONG”	1- batch	replication 1	1000	984	16	98,4
2. rep.	"HUATONG"		replication2	1000	988	12	98,8
3. rep.	"HUATONG"		replication3	1000	985	15	98,5
Average:				**1000**	**986**	**14**	**98,5**
Total:				**1000**	**985**	**15**	**98,4**

According to the analysis of the data presented in Table 1, the arithmetic mean between the various options and replications was determined by the percentage of silkworm eggs revival in spring by an automatic method.

In addition, the total number of silkworm eggs in each variant was 1,000 with 3,000 replications. At the same time the average number of live worms in our experimental variant was 985 eggs. It can be seen that the number of non-live eggs was 15 and the arithmetic mean of live worms was 98.4%.

TABLE 2 REVIVAL RATE OF MULBERRY SILKWORM EGGS (SPRING 2021) HUATONG №1 BATCH IN SIMPLE (COMPARATIVE) WAY

№	Breeds and hybrids	Number of batches	Number of samples	Total number of eggs, pieces	Number of revived worms, pcs	Number of non-revived worms, pcs	Revived worms,per centage
1.var.	“HUATONG”	1-batch	replication 1	1000	965	35	96,5
2.rep.	“HUATONG”		replication 2	1000	961	39	96,1
3. rep.	“HUATONG”		replication 3	1000	957	43	95,7
Average:				**1000**	**961**	**39**	**96,1**
2.var.	“HUATONG”	1-batch	replication 1	1000	955	45	95,5
2.rep.	“HUATONG”		replication 2	1000	947	53	94,7
3. rep.	“HUATONG”		replication 3	1000	950	50	95
Average:				**1000**	**951**	**49**	**95**
3.var.	“HUATONG”	1-batch	replication 1	1000	943	57	94,3
2. rep.	“HUATONG”		replication 2	1000	945	55	94,5
3. rep.	“HUATONG”		replication 3	1000	951	49	95,1
Average:				**1000**	**946**	**54**	**94,6**
4.var.	“HUATONG”	1-batch	replication 1	1000	948	52	94,8
2. rep.	“HUATONG”		replication 2	1000	956	44	95,6
3. rep.	“HUATONG”		replication 3	1000	952	48	95,2
Average:				**1000**	**952**	**48**	**95,2**
Total :				**1000**	**952**	**48**	**95,2**

Analyzing the data presented in Table 2, the percentage of revitalization of mulberry silkworm eggs in the comparative spring season was as follows in terms of different options and reductions.

In simultaneous comparative variants, where the total number of silkworm eggs in each variant was 3000, the number of replications was 1000, the average number of live worms in each variant was 952, the average number of non-live worms was 48, and the arithmetic mean of live worms was 95.2%.

Experiments show that the eggs of HUATONG hybrids were 3.2% higher when revived in an automated incubator than in a normal (comparative) incubator.

This, in turn, has led to a positive increase in other economic values.

CONCLUSION

Based on the results of the above analytical studies, maintain room temperature and humidity at the same level in accordance with agrotechnical rules when reviving mulberry silkworm eggs for spring resuscitation improves survival rate of silkworm, cocoon yield and fiber technology.

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