REPRODUCTIVE PROPERTIES OF MULBERY SILKWORM

Khudjamatov Safarali Khasanboy ugli –
PhD student of Research Institute of the Silk farming (DSc), Doctor of Philosophy in Agricultural Sciences (PhD)

Olimjonov Salokhiddin Abdumalik ugli –
1st course master of Institute of Andijan agriculture and agrotechnologies.

Annotation. This article analyzes the new reproductive properties of breeding systems of mulberry silkworm. In the study, the eggs laid by the mother butterflies during the first 24 hours were obtained in order to increase the fertility and productivity of the new systems.

Key words: Mulberry silkworm, egg, butterfly, line, reproduction, silkworm.

Today, industrial seeds of mulberry silkworm are produced in 6 countries around the world. The leading country in the cultivation of hybrid and elite seeds is the People's Republic of China, whose seed enterprises export seeds to more than 10 cocoon-growing countries. 150,000 boxes of industrial seeds have been prepared in the Republic of Uzbekistan for the 2020 season. The cocoon yield per box of worms is 80,0-85,0 kg in the PRC, 78,0-80,0 kg in India and 59,0 kg in Uzbekistan. In addition, while the level of uniformity in the caliber of cocoons is 90,0% in the leading countries, this figure is 60,0% in our country.

Research is being conducted around the world to create a scientific basis for increasing the embryonic and postembryonic viability and cocoon productivity of mulberry silkworm elite and F1 hybrid offspring. Researchers in this regard [1]; [4]; [5] reported that the father females make eggs for 61 hours. These eggs were 64,9-65,6% on day 1, 26,7-28,6% on day 2, and 8,3-5,6% on day 3.

Indian silkworm breeders have identified a trait that is important for mulberry silkworm breeding, i.e., there is a very close correlation between the weight of female butterflies and their egg productivity. Based on this feature in the breeding process, it has been suggested that the silkworm eggs productivity can be increased by the weight of the female butterflies. [2]

The degree of interdependence between the color of the egg and its reproductive, productivity traits in the selection and breeding of mulberry silkworms has not escaped the attention of foreign scientists. According to [3], the pigments of the silkworm, which belong to the Lepideoptera family, changed during evolutionary development and came to their present appearance as a result of natural selection. Homochromes form a large group of silkworm pigments that determine the color of eggs, eyes, and body.

Based on the above studies, it is necessary to obtain different interspecific hybrid combinations on alternative traits, select the strongest genotypes in different breed populations, increase susceptibility to various adverse stress factors, study the heredity of reproductive traits in the family nursery, super elite and elite.

The effective use of the ability is an important task to have eggs per day in the selection process in the genetics and selection of mulberry silkworms.

The effectiveness and advantages of mulberry silkworms in new breeds and hybrids are assessed mainly on the criteria of cocoon productivity. However, in addition to cocoon fertility traits, their egg productivity traits are no less important. It is known that under production conditions, full-breed and inter-system hybrid worms are fed up. Due to the strength of heterosis, F_1 hybrids are characterized by resistance to adverse environmental conditions, extreme viability and high productivity. The characteristics of cocoon productivity and the technological characteristics of the cocoon depend on the ability of selected breeds for crossbreeding to adapt to each other. Obtained breeds and lines for hybridization are some of which have high cocoon productivity, while others have advantages in terms of technological properties.

The economic situation of mulberry silkworm seed factories is greatly influenced by the amount of eggs obtained from the cocoons placed on the papillonas. This is determined by the amount of eggs produced per 1 kg of live cocoons of seed. The reproductive traits of industrial hybrids depend mainly on the fertility of the maternal breeds that make them up. The larger the cocoon, the larger the butterfly that hatches from it and

lays a large number of large eggs. In our study, we mainly applied the reproductive performance of small-scale systems. This in turn has led to an increase in the quality and size of the eggs laid by hybrid combinations. Indicators such as the number of eggs in the hatchery that laid the selection systems on day 1, the laying weight, and the weight of one egg are shown in Table 1.

Table 1

Reproductive performance of new lines of mulberry silkworm
(Spring of 2021)

Lines	Number of eggs $\overline{X} \pm S_{\overline{x}}$, quantity	Weight of eggs $\overline{X} \pm S_{\overline{x}}$, %	The weight of one egg $\overline{X} \pm S_{\overline{x}}$, r
Line 100	424±7,5	231±5,3	0,551±0,008
Line 101	524±10,6	303±6,3	0,578±0,005
Line 102	308±8,9	181±4,3	0,476±0,003
Line 103	346±14,8	175±7,1	0,506±0,005

When we are analyzing the data in table 1, we can see that the newly high reproductive rates that is created lines. Among the 4 tested systems , the number of eggs in the stock and the weight of the stock showed the highest rates in terms of Line 100 and Line 101. These systems are characterized by medium germination. As It can be seen on the 1st table , the number of eggs was 524 in the Line 101 sines and weight of the egg was 303 mg. These values was 424 units and 231 mg in the Line 100 system respectively. The fact that the number of eggs is in the range of 308-346 in Line 102 and Line 103 lines, and the fact that the egg weight is equal 171-181 mg that indicates these systems fine-grained.

The weight of one egg is equal in almost all systems at the same level but some systems had lower rates. In conclusion, mulberry silkworm systems are fully positively compatible with each other and are suitable for the creation of egg industrial hybrids. Of course, the signs of egg productivity must also be at the level of demand. It should be noted that the analysis of reproductive traits leads to the conclusion that not all hybrids can show heterosis in terms of fertility traits. The higher this figure, the higher the number of worms that come out of a box of seeds

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