



RELATIONSHIP OF POLLINATION CHARACTERISTICS OF MOTHER BUTTERFLIES TO THEIR LIFE EXPANSION

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Abstract

In this article, the importance of the role of cocooning in the agricultural sector of the republic in the national economy, the strategy for the development of agriculture in the Republic of Uzbekistan for 2020-2030, the role of selection and breeding in the development of cocooning, and the role of seed production, in 2018-2020, to study the extent to which the life span of butterflies depends on their offspring at the Scientific Research Institute of Sericulture in 2018-2020 the results, their use in science and production practice, as well as the expected results, such as increasing the quantity of seed preparation, improving its quality and increasing its competitiveness, are highlighted by the authors.

Keywords: selection, breeding, seed production, cocoon, cocoon shell, silkworm seed, seed laying, egg weight, butterfly, butterfly body size, butterfly life span, group, physiological brood, silkiness, survival rate, worm viability, disease rate, correlation, system, breed, fertility.

Today, silkworm seeds are grown in a number of countries around the world. At the same time, the global demand for high-fertility and productivity indicators and elite seeds that produce high-quality silk fiber is increasing every year. In order to meet the demand of the leading countries producing silk products, such as the PRC, India, Italy, France and Japan, as well as the cocoon processing enterprises of our Republic, seed enterprises are required to grow high-quality and healthy seeds. As the country's economy gradually diversifies, this means that the agriculture and food sector also needs radical reform, which encourages it to look for opportunities to be competitive in the domestic and foreign markets and for sustainable development. A, 4A, 5A types of silk kalavas are used for the production of necessary products for various branches of the national economy. By developing and introducing advanced





new effective methods of selection and breeding work, the cultivation of hybrid seeds with high cocoon productivity, capable of meeting the requirements of the domestic and foreign markets and suitable for different climatic conditions, is one of the most urgent scientific and practical problems. In the years of independence in our country, the productivity of cocoons obtained from one box of silkworms is being increased by creating and introducing new breeds and hybrids of mulberry silkworms into production and breeding elite seeds.

In the new Uzbekistan, which is developing in every way, providing industrial enterprises with cocoon raw materials, especially in the process of rapidly changing world market conjuncture and increasing consumer demands, taking into account the increasing demand for Uzbek products in the world market, extremely important tasks are being carried out in the production of exportable silk products. .
"..increasing the effectiveness of directing innovative ideas, scientific developments, modern technologies and scientific achievements to the cocoon cultivation and processing network", as well as improving the system based on science - science and innovation in agriculture in the development strategy of the Republic of Uzbekistan for 2022-2026 are defined as the main directions.

State adviser to the President of the Republic of Uzbekistan on agricultural issues Sh. According to the minutes of the meeting held by Ganiev on September 2-3 this year in the Andijan region on the issue of cocooning, it is necessary to issue an order to grow 80,700 tons of cocoon raw material in cotton-textile clusters and to implement the tasks specified in other regulatory and legal documents related to this sector.

Much progress has been made in genetics, selection and breeding of mulberry silkworm by the scientists of the field. This object, which is a specific poikilotherm and monophagous insect, was one of the first to solve the problems of artificial control of sex, to create and put into practice great innovations in the directions of the specific interpretation of heterosis in science and quantitative signs of genetics. Most of the characters with economic value belong to the category of quantitative characters, and their manifestation depends on the genetic factor. Mulberry silkworm pollination symptoms are also among such symptoms. Researching the laws of the manifestation of egg productivity signs and developing effective methods of bringing them to a higher level is an urgent direction, because at the present time, the main task of our government is to provide cocoon breeding farms of our Republic with 100% local breed and hybrid eggs.

In the selection and breeding of agricultural animals, including the mulberry silkworm, variability, heredity of reproductive traits and their correlation with other quantitative traits are of particular importance.





The genotypes of the animals are sufficiently different from each other in terms of oviposition characteristics. It should be noted that during the evolutionary development, mainly the offspring of the female sex with high reproductive characteristics lived and developed as multi-breeding creatures.

S.N. Navruzov (1999) developed a methodology for selecting butterflies based on their appearance and constitution, which determines egg productivity. Female butterflies without external defects and of large size have been found to breed quickly and lay healthy and abundant eggs.

Experimental butterflies were kept in a special room until the aestivation period was over, and microanalysis work was carried out in order to check the absence of infectious diseases. According to the results of microanalysis, each egg laying was found to be healthy and stored in a cold room at a temperature of +3-4 Co.

Table 1 shows the life span of female butterflies and the coefficient of variation of this trait.

Table 1

Life expectancy of female butterflies of Pearl and Line 27 breeds (2020)

Species and system names	The life span of female butterflies $\bar{X} \pm S_{\bar{x}}$, day	Variability of life span of female butterflies Cv, %
Marvarid	10,9 ± 1,95	56,65
Line 27	12,8 ± 0,99	33,9
Average	11,9	42,3

Before analyzing the numbers in Table 1, it should be emphasized. According to some literature, female butterflies can live from 2-3 days to 20 days, and this character was considered to be of little importance in terms of selection. However, S.Navruzov's extensive scientific research revealed the existence of a correlative relationship between the body size of female butterflies and the traits of leading economic value. Among the economically valuable traits of mulberry silkworm, pollinating characteristics are of special importance and determine the efficiency of breeding and seed breeding enterprises.

The work of many of our scientists devoted to the study of variability of reproductive signs and their heredity has been carried out. In such studies, the influence of female butterflies' pollination on other selective traits and their interrelationship were scientifically studied. The fact that the trait we are studying is almost reproductively important prompted us to study the fertility characteristics of these breeds.



The degree to which the life span of female butterflies affects their fertility is of great importance for breeding practice and theory.

We separately studied the reproductive characteristics of the experimental butterflies along with the lifespan of the Pearl and Line 27 systems. For this purpose, the number of eggs in each egg laid by female butterflies was counted individually, and the number of dry and unfertilized eggs was determined. After that, the eggs in the nest were weighed on a torsion scale, and the weight of the eggs in the nest was determined.

Table 2 shows the fertility indicators of Marvarid and Line 27 breeds.

Table 2 Reproductive performance of Pearl and Line 27 breeds

Species and system names	The number of eggs in the lay $\bar{X} \pm S\bar{x}$, pc	Weight of eggs in a cage $\bar{X} \pm S\bar{x}$, mg	Physiological failure $\bar{X} \pm S\bar{x}$, %
Marvarid	726± 3,69	459± 2,30	1,6± 0,66
Line 27	549,9± 8,08	305,5± 5,10	1,8± 0,26

Based on fertility indicators in Table 2, we can be sure that the Marvarid breed is more fertile than the Line 27 system. The number of eggs in the barn was 766, the weight of eggs was 459 mg, and the indicator of physiological failure was 1.6%. The same figures are 549.9 units, 305.5 mg and 1.8% in the Line 27 system, respectively. Physiological fertility rate is almost the same in both breeds.

One of the main tasks of our research work is to study the influence of the life span of female butterflies on the signs of fertility. Therefore, the life span and main reproductive characteristics were determined for each female butterfly (Table 3).

Table 3 Lifespan and fecundity of Marvarid and Line 27 female butterflies

No	Female of butterflies life expectancy, a day	The number of eggs in the nest, pcs	Weight of eggs in the laying, mg	The number of dried eggs, pcs	Physiological failure, %
Marvarid					
1	9	809	525	5	0,6
2	6	450	301	31	6,9
3	6	774	522	6	0,8
4	9	685	438	3	0,43
5	11	800	530	6	0,6
Line 27					
6	24	774	450	11	1,4
7	5	804	510	8	1,0
8	17	778	440	8	1,0
9	6	715	476	16	2,2
10	16	774	456	7	0,9



It is more difficult to determine a clear pattern based on the comparative analysis of the indicators of pollination and the life span of female butterflies presented in Table 3. But it can be seen that the less female butterflies live, the higher the percentage of physiological brackish in the eggs they lay. For example, the number 2.9 butterflies lived for 6 days and the physiological rate in their egg deposits was 6.9% and 2.2%, respectively. In long-lived butterflies, this indicator was only 0.6% to 1.4%. From this it can be concluded that the seeds dropped by long-lived butterflies are of higher quality than those of short-lived butterflies, and the percentage of survival is higher, and the vitality of the larvae that emerged from them is higher. As a result, high quality seripak cocoon products are obtained from such silkworms.

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