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THE EFFECT OF SUMMER NATURAL-CLIMATIC CONDITIONS ON BREEDING COCOONS

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Annotatsiya
Yozda ozuqa sifatini o’zgarishi eng asosiy omillardan hisoblanadi. Ma’lumki, tut bargida ipak qurti normal o’sib-rivojlanishi, sifatli pilla o’rashi va keyinchalik sog’lom nasldor avlod qoldirishi uchun zarur bo’lgan xom protein, erkin azot, uglevodlar, mineral moddalar hamda kul moddasi kabi bir qator organik va noorganik birikmalar mavjud. Agar bahorgi mavsumda yuqoridagi moddalar tut navi yoki duragayidan kelib chiqib o’z me’yorida bo’lsa, yozda esa barglarning suvsizlanishi va dag’allashishi oqibatida eng zarur bo’lgan oqsil, uglevod va erkin azot miqdori pasayadi, bargning kullanishi esa ko’paya boradi.

Абстрактный
Изменение качества кормов летом является одним из основных факторов. Известно, что тутовый лист содержит ряд органических веществ, таких как сырой протеин, свободный азот, углеводы, минеральные вещества и золу, которые необходимы для нормального развития тутового шелкопряда, для наматывания качественного кокона и последующего производства здоровое потомство и неорганические соединения присутствуют. Если в весенний сезон вышеперечисленные вещества находятся в пределах нормы в зависимости от сорта или гибрида шелковицы, то летом из-за обезвоживания и огрубения листьев снижается количество самого необходимого белка, углеводов и свободного азота, а усиливается поседение листьев.

Abstract
The change in feed quality in summer is one of the main factors. It is known that the mulberry leaf contains a number of organic substances such as crude protein, free nitrogen, carbohydrates, minerals and ash, which are necessary for the normal development of the silkworm, for wrapping a quality cocoon, and for the subsequent production of healthy offspring. and inorganic compounds are present. If in the spring season the above substances are in their normal range depending on the mulberry variety or hybrid, then in the summer due to the dehydration and coarsening of the leaves, the amount of the most necessary protein, carbohydrates and free nitrogen decreases, and the graying of the leaves increases goes.

While researching the effect of external environmental factors on the organism of the mulberry silkworm during the summer period, it is necessary to emphasize the extremely dry and hot

summer temperature and the sharp decrease in moisture and nutrients in the mulberry leaves, which are the only food for silkworms. Many scientists have noted many times that these unfavorable factors cause changes in economic characteristics of breeds and hybrids.

High air temperature during the summer feeding season, that is, an increase in the temperature outside to 40-420 C, certainly leads to an intensive loss of moisture in the body of the silkworm, biochemical processes accelerate, and due to the lack of thermoregulation of the organism, o as a result of abnormal development, the worms become very small. Naturally, such worms wrap very small and thin-shelled cocoons. If offspring are taken from breeding worms, their fertility will decrease sharply and the amount of dried or unfertilized seeds will also increase.

At the same time, worms can get sick more in the summer than in the spring worm feeding season. Because hot air temperature serves as a favorable environment for the growth of bacteria and other harmful microorganisms. As a result of this, in many cases, there is a high probability of jaundice, blood rot and pestilence. In addition to the above-mentioned negative factors, if the worms are fed too densely or if they are not fully supplied with food, the unpleasant situations that occur during repeated feeding of worms are even more evident.

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Based on the above considerations, in this section of our research work, we decided to conduct a comparative study of the influence of the main summer and spring factors in the breeding process of worms in the population of breeds and systems. During the years 2008-2010, we compared the parameters of the breeds determined by three years of spring maintenance with the numbers obtained during the summer repeated worming period. The goal is to determine to what extent the potential of breeding breeds in the summer season is reduced or preserved compared to the spring period. The indicators of the viability of worms obtained during the spring and summer worm feeding season of regionalized breeds are given.

Table 1 Spring and summer viability of worms of zoned breeds

The name of the breed	The viability of worms,%							
	2020y.		2021 y.		2022y.		$\bar{X} \pm S_{\bar{x}}$, %	
	summer	spring	summer	spring	summer	spring	summer	spring
Orzu	83,8	93,7	84,9	87,3	83,8	90,5	84,2±0,70	90,5±1,86
Yulduz	87,9	90,4	90,8	89,3	84,8	91,1	87,8±1,73	90,3±0,53
Go'zal	88,6	94,1	87,5	88,4	89,1	89,6	88,4±0,47	90,7±1,74
Marvarid	90,4	93,9	86,8	87,4	87,6	92,7	88,3±1,09	91,3±2,00
Asaka	83,3	90,0	84,8	91,3	82,9	93,1	83,7±0,58	91,5±0,90

In the average values of the obtained data, we can see that the viability of silkworms reared in the spring season is significantly higher than the viability of silkworms reared in the summer season almost every year for all breeds. One of the main reasons for this is that the temperature in the summer season is very high and the relative humidity is very low. This is also proven in the given data. In all breeds, according to the three-year average indicators, the viability of worms in the spring season was 2.3% to 7.8% higher than the viability of summer worms. Worm viability is considered one of the most important biological traits in determining cocoon productivity. Because the worms that have come alive from the eggs are fed until they cocoon, and during their growth they are exposed to various external environments. As a result, some of the worms die, while others, due to their resistance to various effects, reach the cocoon and play an important role in increasing productivity. In addition, cocoon productivity traits are also very important in increasing productivity. The reason is that no matter how high the viability of worms is, that is, despite the large number of worms that have reached the cocoon, if the cocoons are small, it will have a negative effect on productivity. Therefore, high cocoon productivity is closely related to these signs.

Table 2 below shows the cocoon and silk sheath weight and silkiness indicators of silkworms reared in the spring and summer seasons.

Table 2 Spring and summer cocoon production of worms of zoned breeds

The name of the breed	Average weight of the cocoon $\overline{X} \pm S_{\overline{x}}$, g		The silk shell is of average weight $\overline{X} \pm S_{\overline{x}}$, mg		Silk industry $\overline{X} \pm S_{\overline{x}}$, %	
	summer	spring	summer	spring	summer	spring
Orzu	1,96±0,11	2,48±0,09	418±35,1	555±17,6	21,3±0,73	22,4±0,3
Yulduz	1,89±0,09	2,48±0,03	403±31,8	545±9,0	21,2±0,72	22,0±0,2
Go'zal	1,88±0,12	2,39±0,04	405±35,5	548±6,0	21,5±0,53	22,9±0,2
Marvarid	1,89±0,12	2,44±0,11	399±33,8	539±19,0	21,1±0,31	22,1±0,3
Asaka	1,69±0,01	1,83±0,08	338±1,5	410±15,0	20,0±0,14	22,4±0,2

Analyzing the cocoon productivity characteristics of silkworms reared in the spring and summer seasons over the years, it is worth noting that each breed of silkworms has unique characteristics and features, that is, genetic potential.

These signs and characteristics may not fully show their potential under the influence of various external environmental factors, including the nutritional content and quality of food, changes in air temperature and humidity. The information in the above table clearly proves the correctness of our opinion. In particular, the average weight of the cocoon was 1.83-2.48 g in the spring season, and 1.69-1.96 g in the summer season. The cocoon silk content was 410-555

mg in spring, 338-418 mg in summer, and 22.0-22.9% in spring and 20.0-21.5% in summer. Information on reproductive symptoms is presented in

Table 3 below. Table 3 Regionalized breeds in the spring and summer season reproductive indicators

The name of the breed	Normal number of eggs in a clutch $\overline{X} \pm S\overline{x}$, piece		Egg laying weight $\overline{X} \pm S\overline{x}$, mg		Weight of one egg $\overline{X} \pm S\overline{x}$, mg	
	yozgi	bahorgi	yozgi	bahorgi	yozgi	bahorgi
Orzu	540±8,9	889±15,0	311±5,5	591±20,0	0,585±0,038	0,665±0,011
Yulduz	626±4,4	864±17,0	363±4,9	546±18,0	0,581±0,001	0,628±0,007
Go'zal	679±2,3	878±9,0	413±3,8	562±6,0	0,608±0,001	0,641±0,008
Marvarid	667±17,8	880±7,0	387±10,9	561±5,0	0,577±0,027	0,638±0,007
Asaka	396±14,9	640±24,0	208±14,0	373±9,0	0,529±0,013	0,583±0,008

Pd = 0.999-0.999 according to the number of eggs in the nest;
Pd = 0.485-0.999 according to the weight of eggs in the barn;
Pd = 0.294-0.999 per egg weight.

We can conclude that the high temperature in the summer season, the decrease in humidity, and at the same time dehydration and coarsening of the leaves had different effects on the genetic potential of the breeds in the summer season. The number of healthy eggs in the laying of Yulduz, Gozal and Marvarid breeds in the spring and summer shows that the indicators are not very large. In Orzu and Asaka breeds, on the contrary, we can see a big difference in this sign. In terms of egg laying weight, Gozal and Asaka breeds had a small difference. The difference between the indicators obtained in the spring and summer seasons was significantly higher in Orzu, Yulduz, and Marvarid breeds. There was no big difference in the weight of one egg in all breeds in spring and summer.

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