



## Effect of the Method of Feeding Silkworm under the Film on the Development of Larvae

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### Abstract

The article presents data on feeding caterpillars under a film, which makes it possible not to wither the leaf and reduce feed consumption three times compared to the usual method of rearing caterpillars.

**Keywords:** Seed, larva, silkworm, air humidity, temperature, worm house, feed, mulberry leaf, cocoon, silkworm vitality, fertility, productivity.

**Introduction:** PP-4817 dated September 2, 2020 of the President of the Republic of Uzbekistan "On the organization of the activities of the Committee for the Development of the Silk Industry and Wool Industry of the Republic of Uzbekistan", PP-3910 dated August 20, 2018 No. and PP-3616 of March 2018, one of the main promising tasks for the silk industry was issued: "Creation and introduction of high-yielding breeds of mulberry silkworm eggs, increase their production volume to reduce imports and fully supply the Republic in the future."

In these decrees and decisions, the breeding and breeding of mulberry silkworm breeds and hybrids created by the breeders of our Republic, full provision of the republic's need for pure and industrial mulberry silkworm seeds in the future, and the establishment of new intensive mulberry orchards, scientists and experts of the field in the cultivation of productive mulberry seedlings great tasks have been set before him.

The better we understand the interaction between the organism and the environment, the better we can control the organism by using the opportunity to regulate and create the environment. Therefore, the interaction between the organism and the environment is of special importance for agriculture, and good breeds of animals are created only as a result of using good agrotechnics and good zootechnics.

High humidity in the worm house affects worms in the same way as high temperature. If the air humidity increases a lot, the worm has a hard time expelling excess moisture from its body, and the temperature in its body starts to rise. As a result, the growth of the worm accelerates, its demand for leaves increases, but it becomes more resistant to hunger. Worms in a worm house with increased air humidity become susceptible to disease.

In recent years, we have conducted research on feeding silkworms under film and achieved good results. In particular, when worms aged 1-4 were fed in this way, it gave positive results. Because when cut leaves are given to worms, they dry quickly due to the heat of the worm house, and 75-85% of the given leaf turns into gana. If the worms are fed under the film, the leaf cut at 6 in the morning does not wither until 1400 in the afternoon, the leaf given in the afternoon until the



evening and the leaves given in the late afternoon at 2200 do not wilt until the morning and the worms eat well. As a result, instead of giving leaves 9-10 times in one day, it is enough to give leaves three times.

Based on these, we made 5 variants of hybrid silkworms Ipakchi-1xSipakchi-2, feeding the worms under a film to prevent the leaves from withering quickly, and instead of giving leaves 10-12 times in a day in the usual way, 3 times (600 hours in the morning, 600 hours in the afternoon 1400 and 2200 at night) we arranged to give.

**1-table. Indicators of temperature and air humidity under the film and in the worm house.**

B	The young of the silkworm									
	At the age of 1		At the age of 2		At the age of 3		At the age of 4		At the age of 5	
	Temperature <sup>0</sup> C	Humidity	Temperature	Humidity	Temperature	Humidity	Temperature	Humidity	Temperature	Humidity
1	26	82	26,4	85	26,8	90	26,6	92	25	65
2	25	78	26,2	84	26,6	88	26,2	91	25	65
3	25,8	78	26,2	83	26,5	86	26,1	91	25	65
4	25,7	76	26,0	80	26,5	84	26,0	90	25	65
5к	25,6	70	25,8	72	26,0	70	26,6	66	25	65

Before starting scientific research on the topic, we conducted experiments in production conditions and collected the necessary information in order to properly organize the options.

The obtained data show that the temperature and humidity indicators under the film also depend on how high the film is closed above the worms. In particular, it was found that if the film is closed at a height of 3-5 cm above the worm, the temperature inside it is two degrees higher than the temperature in the room, and the relative humidity of the air is 25-30% higher. When monitoring the condition of the worms in the experiment and the condition of the given leaves, it was found that when the film is closed directly on the worms, the worms sweat inside the film due to the water vapor released from the leaves and worms. But it is important to note that in this option, the long period given to the worms will not fade. But the amount of carbon dioxide in the film decreases to a certain extent, and the amount of carbon dioxide gas increases. Therefore, worms cannot develop well and quickly compared to worms in other options (even if the leaves are always kept in good condition). On the contrary, the growth slows down a little, and the worms go to sleep and wake up from sleep (shedding) more unevenly. Taking this into account, we planned and carried out an experiment by closing the film on the research worms at a height of 10, 20, 30, 40 cm. (Table 1).

The data presented in the table show that when the worms in the experiment were fed by covering the film at a height of 10 cm, it was found that the temperature under the film was 1.5 degrees higher than the room temperature, and the relative humidity of the air was 13-15% higher. When the development of the worms in this variant was observed, they were able to feed evenly, fall asleep and wake up completely. When comparing them with control worms fed in room conditions, it was found that the development of worms in the experimental variant was one day earlier. The worms in all experimental variants were given leaves 3 times a day during the 1-4 years of age, while the worms in the control variant were fed 9-10 times daily in the 1st year, 8-9 times in the 2nd year, 7-8 times in the 3rd year, 6 times in the 4th year. - 7 times and 5-6 times at the age of 5 years.

In the experimental version, since the air humidity under the film is always equal to 82-90%, the given leaves do not wither quickly, and conditions are created for worms to feed on it for a long time, that is, up to 8 hours. The air under the film is replaced at the time of feeding the worms.



The agrotechnical processes of this first variant of feeding worms under the film are also observed in the 2nd experiment variant. Only in this option, the distance between the film and the worms was 20 cm. Worms in this variant have been shown to develop well and flatly, like worms in other variants. The temperature under the film was 1.2-1.3 degrees higher than the room temperature, and the relative humidity of the air was 12% higher than in the room. This situation, i.e. high humidity, creates conditions for the water content of the leaves given to the worms not to decrease quickly, that is, not to wither quickly, and for the worms to be fed normally for 7-8 hours. We believe that this situation will lead to 2-3 times less consumption of the total amount of leaf given to the worms, as well as a decrease in the amount of food, labor spent on feeding the worms and preparation of leaves, i.e. saving labor and increasing economic efficiency.

These data also apply to options 3-4, the average temperature under the film is 26.9-27.0 degrees, and the humidity is 76-83% at 1-2 years old, 84-91% at 3-4 years old, 1.1 times higher than the temperature in the worm house. It was found that it will be -1.2 degrees, and humidity will be 16-25% higher.

Table 2 below shows the effects of silkworms on their larval stage when reared under film.

**2-table. Effects of silkworm rearing methods on silkworm rearing period.**

Options	Larval period			
	Worm feeding has begun	He began to wrap a cocoon around him	Prolongation of worm life (day) $X \pm Sx$	Compared to the comparative option, %
1	16.04.2022 y.	10.05.2022 y.	25 $\pm$ 0,26	92,6
2	16.04.2022 y.	10.05.2022 y.	25 $\pm$ 0,25	92,6
3	16.04.2022 y.	10.05.2022 y.	25 $\pm$ 0,25	92,6
4	16.04.2022 y.	11.05.2022 y.	26 $\pm$ 0,28	96,3
5(comparative)	16.04.2022 y.	12.05.2022 y.	27 $\pm$ 0,30	100,0

In short, when silkworms are fed under a film, the feed consumption is saved (3 times instead of 9-10 times in 1 day), the larvae develop evenly and the larval period is shortened by 1-2 days.

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