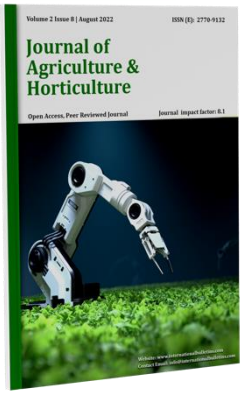

MULBERRY SILKWORM IN HIGH HUMIDITY CONDITIONS CARE METHOD

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Аннатация

Ушбу мақолада тут ипак қуртини намланган чойшаб остида боқиш усули ҳамда оддий қурт боқиш усули ўрганилиб, юқори намликда чойшаб остида ипак қурти боқилганда ипак қурти озуқаси ҳисобланган тут барглари сарфи камайганлиги ва қурт боқиш кунлари қисқаргани хақида тажриба натижалари келтирилган.

Аннатация

В данной статье изложены результаты исследований по определения эффективности выкормки гусениц тутового шёлкопряда под влажным покровом относительно существующего способа выкормки. В частности, уменьшаются расход корма и количества дней выкормки гусениц.

Annotation

This article examines the method of rearing mulberry silkworms under a damp sheet and the method of ordinary worm rearing, and presents experimental results showing that when silkworms are reared under a sheet at high humidity, the consumption of mulberry leaves, which are considered silkworm food, is reduced and the number of days of rearing the worms is shortened.

Калит сўзлари: ипак қурти, қурт боқиш усули, тут барги, чойшаб, намлик, харорат, нажриба вариант, технология.

Ключевые слова: гусеница, метод выкормки, влажный пакров, температура, вариант, технология, лист шелковицы.

Keywords: silkworm, worm feeding method, mulberry leaf, sheet, humidity, temperature, nice option, technology.

Introduction

A number of scientific institutions around the world engaged in sericulture are conducting research aimed at developing new innovative agrotechnologies for cultivating mulberry silkworms in various ways, producing cocoon raw materials, and extracting raw silk on an industrial scale, processing it deeply, and producing finished silk products. In this regard, the development of intensive new technologies that allow for the production of high-quality and high-yield cocoons and constantly provide the optimal temperature and relative humidity necessary for the silkworm is of significant scientific and practical importance.

As is known, one of the advanced methods is to raise silkworms under moistened sheets until they reach the age of 1-4, where the humidity under the sheets is high (80-90%) and the temperature is low (22-24°C). As a result, the mulberry leaves retain moisture, do not wilt, and silkworms eat the leaves well. To further increase the efficiency of silkworm rearing under sheets, one of the most important tasks is to increase the efficiency of the most labor-

intensive and labor-intensive technological processes in silkworm rearing: distributing mulberry leaves to silkworms, thinning silkworms, and rearing silkworms in high humidity (under sheets). Accordingly, to determine the effectiveness of the proposed method compared to the existing method and to improve the feeding of silkworms in high humidity (under bed) and to create a suitable technology is the main goal of our research.

The expected result of feeding at high humidity (under the bed) is, firstly, to keep the mulberry leaves moist longer, and secondly, to reduce the amount of leaves used.

To do this, two types of experiments are conducted on the new hilltop:

The first option is under the bedclothes, the second option is a simple open method. During the experiments, the amount of leaves consumed in both options for feeding, the number of feedings, and the weight of young worms are determined. The results of the experiment are presented in Tables 1, 2.

Worms were given at a young age when they were fed under sheets amount of leaves (on the basis of 600 pieces)

Table -1

The day of the worms and the time of leafing	**A leaf given according to age, g**			**The day of the worms and the time of leafing**	**A leaf given according to age, g**		
	experience				**comparative**		
	I	**II**	**III**		**I**	**III**	**III**
1	2	3	4	5	6	7	8
1 day:				**1 day:**			
Hour: 7:30	1,8	7,5	18	Hour: 7:30	0,8	3,1	8,0
				9:00	0,8	3,1	8,0
12:00	1,8	7,5	18	10:30	0,8	3,1	8,0
				12:00	0,8	3,1	8,0
16:30	1,8	7,5	18	13:30	0,8	3,1	8,0
				15:00	0,8	3,1	8,0
21:00	1,6	7,0	17,5	16:30	0,8	3,1	8,0
				18:00	0,8	3,1	8,0
				19:30	0,8	3,1	8,0
				21:00	0,8	3,1	8,0
Total	7,0	29,5	71,5	Total	8	31	80
2 day:				**2 day:**			
Hour: 7:30	3,6	15	39	Hour: 7:30	1,5	6,8	16,4
				9:00	1,5	6,8	16,4
12:00	3,6	15	39	10:30	1,5	6,8	16,4
				12:00	1,5	6,8	16,4
16:30	3,6	15	39	13:30	1,5	6,8	16,4
				15:00	1,5	6,8	16,4
21:00	3,2	13	32	16:30	1,5	6,8	16,4
				18:00	1,5	6,8	16,4
				19:30	1,5	6,8	16,4
				21:00	1,5	6,8	16,4
Total	14,0	58	149	Total	15	68	164
3 day:				**3 day:**			

Hour: 7:30	7,7	22,5	72	Hour: 7:30	3,4	10,0	32,0
				9:00	3,4	10,0	32,0
12:00	7,7	22,5	72	10:30	3,4	10,0	32,0
				12:00	3,4	10,0	32,0
16:30	7,7	22,5	72	13:30	3,4	10,0	32,0
				15:00	3,4	10,0	32,0
21:00	7,0	20	72	16:30	3,4	10,0	32,0
				18:00	3,4	10,0	32,0
				19:30	3,4	10,0	32,0
				21:00	3,4	10,0	32,0
Total	30,1	87,5	288	Total	34	100	320
4 day:				**4 day:**			
Hour: 7:30	4,6	10,2	46	Hour: 7:30	2,0	4,6	20,5
				9:00	2,0	4,6	20,5
12:00	4,6	10,2	46	10:30	2,0	4,6	20,5
				12:00	2,0	4,6	20,5
16:30	4,6	10,2	46	13:30	2,0	4,6	20,5
				15:00	2,0	4,6	20,5
21:00	4,2	10,2	46	16:30	2,0	4,6	20,5
				18:00	2,0	4,6	20,5
				19:30	2,0	4,6	20,5
				21:00	2,0	4,6	20,5
Total	18,0	40,8	184	Total	20	46	205
All	**71,6**	**203,6**	**708**	**All**	**77**	**245**	**769**

The amount of leaves given to the worms as adults when they were raised under a bed (based on 600 pieces)

Table -2

The day of the worms and the time of leafing	**A leaf given according to age, g**				
	experience		**comparative**		
	IV	**V**	**IV**		**V**
1	2	3	4	5	6
1 day:			**1 day:**		
Hour: 7:30	51	114	Hour:7:30	37,9	85,2
12:00	51	114	10:00	37,9	85,2
16:30	51	114	12:30	37,9	85,2
			15:00	37,9	85,2
21:00	47	110	17:30	37,9	85,2
			20:00	37,9	85,2
Total	200	452	Total	227,4	511,2
2 day:			**2 day:**		
Hour: 7:30	91,8	229	Hour: 7:30	68,2	170,5
12:00	91,8	229	10:00	68,2	170,5
16:30	91,8	229	12:30	68,2	170,5
			15:00	68,2	170,5
21:00	90,0	229	17:30	68,2	170,5

			20:00	68,2	170,5
Total	365,4	916,0	Total	409,2	1023,0
3 day:			**3 day:**		
Соат: 7:30	128	307	Hour: 7:30	94,7	227,3
12:00	128	307	10:00	94,7	227,3
16:30	128	307	12:30	94,7	227,3
			15:00	94,7	227,3
21:00	120	307	17:30	94,7	227,3
			20:00	94,7	227,3
Total	504	1228	Total	568,2	1363,8
4 day:			**4 day:**		
Соат: 7:30	153,4	332	Hour: 7:30	113,6	246,2
12:00	153,4	332	10:00	113,6	246,2
			12:30	113,6	246,2
16:30	153,4	332	15:00	113,6	246,2
			17:30	113,6	246,2
21:00	153,4	332	20:00	113,6	246,2
Total	610,2	1328	Total	681,6	1477,2
5 day:			**5 day:**		
Соат: 7:30	97,2	358	Hour: 7:30	72	265
12:00	97,2	358	10:00	72	265
			12:30	72	265
16:30	97,2	358	15:00	72	265
			17:30	72	265
21:00	90,0	358	20:00	72	265
Total	381,6	1432	Total	432	1590
6 day:			**6 day:**		
Соат: 7:30	-	320	Hour: 7:30	-	238,6
12:00	-	320	10:00	-	238,6
			12:30	-	238,6
16:30	-	320	15:00	-	238,6
			17:30	-	238,6
21:00	-	300	20:00	-	238,6
Total	-	1260	Total	-	1431,6
7 day:			**7 day:**		
Соат: 7:30	-	320	Hour: 7:30	-	238,6
12:00	-	320	10:00	-	238,6
			12:30	-	238,6
16:30	-	320	15:00	-	238,6
			17:30	-	238,6
21:00	-	300	20:00	-	238,6
Total	-	1260	Total	-	1431,6
8 day:			**8 day:**		
Соат: 7:30	-	230	Hour: 7:30	-	170,5
12:00	-	230	10:00	-	170,5
			12:30	-	170,5

16:30	-	230	15:00	-	170,5
			17:30	-	170,5
21:00	-	230	20:00	-	170,5
Total	-	920	Total	-	1023
All	**2061,2**	**8796,0**	**All**	**2318,0**	**9851,4**

In each variant, 800 worms were reared. According to the data provided, a total of 64 leafings were performed during the 4th-5th years. 10 times in I age; 10 times in II-age; 10 times in III age; 11 times in IV age; worms were fed 23 times at age V. Each leaf was weighed on a leaf scale. During the experiments, the weight of larvae and leaf consumption were determined in the third, fourth, and fifth instars.

During the experiment, it can be seen that the consumption of mulberry leaves was 30-35% more than that of the experimental variant when the silkworm was cared for in a simple way. Silkworms were given mulberry leaves 10 times a day when they were young, and mulberry leaves were given 3 times a day in the experiment.

From the results of the experiment presented above, the following conclusion can be drawn: in order to maintain natural moisture in the mulberry leaf, which is the food of the mulberry silkworm, keeping the worms under a moistened cloth gives a positive result.

Retention of moisture in mulberry leaves is more important in summer repeated worm feeding than in spring. Therefore, the level of moisture transpiration from leaves was measured for three years in June, July, and August. As is known, although the majority of silkworms are reared in the spring months, in recent years, the practice of cocoon production has been practiced in our republic during the summer and autumn seasons. In repeated worm feeding, the condition of the mulberry leaf, especially the amount of moisture and its maximum preservation during the worm feeding process, is of great importance. Because leaf hardening and dehydration during repeated worm feeding has a negative effect on the growth and development of silkworms and the viability of worms. As a result, cocoon productivity and its quality decrease sharply.

Conclusion

Based on the results of research conducted to develop a new method for cultivating mulberry silkworm hybrids under conditions of high humidity and optimal temperature, the following conclusions can be drawn:

- According to the results of a three-year trial of the method of keeping industrial worms under wet bedding, the duration of the worming period was 26.0; 26.0; 28.5 days, respectively, with an average of 26.8 days. Every day of savings in industrial worm farming can yield significant economic benefits.

- In comparison, it was found that leaf consumption significantly increased in the simple open method. In addition, the number of leaves given to the caterpillars over the five-year period was also observed to be very high, that is, a total of 166 leaves were given in 2022, 172 times in 2023, and 136 times in 2024, with an average of 158 leaves. If compared to the under-bed feeding method, it can be seen that 82-90 times more leaves were given.

When comparing the results of leaf consumption over a five-year period with worm feeding under a sheet, it was proven that worm feeding in the open method can lead to an additional consumption of 2036.0-2621.8 g or 2.0-2.6 kg of leaves for every 600 worms.

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