GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)
ISSN (E): 2347-6915
Vol. 11, Issue 11, November (2023)

BIOLOGICAL INDICATORS OF SHELPOVICH HYBRIDS ON FEEDING WITH PROMISING SHULBERRY SORADS IN SPRING IN KARAKALPAKSTAN

Mamatov Khurshid Abdurafievich
Associate Professor, Head of the Department of Animal Science, Nukus branch of Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology

Jumanazarov Timur Tanirbergenovich
Agriculture and Agrotechnologies of Karakalpakstan Doctoral Student at the Institute

ANNOTATION

In this article, promising mulberry cultivars and silkworm hybrids were cultivated and their biological indicators were studied. From the obtained results, it can be seen that among the biological indicators of the variants, among the silkworm hybrids fed with the Jarariq-5 mulberry variety, Gozal x Marvarid (Oltin vodiy-2) 96,0 % was observed in option 3 of table 1. Table 1 option 3, which has the lowest incidence rate, is 2.63%. Among the hybrids of silkworm fed with Saniish-33 mulberry variety, the highest viability was observed in Ipakchi-2 x Ipakchi-1 hybrid, 95.6% in variant 2 of table 2. The lowest indicator of the percentage of disease 2.73% was observed in option 1 of table 2. In the conducted experiments, positive results were obtained and it was proved that the biological indicators of mulberry silkworm hybrids fed with promising mulberry varieties have better indicators compared to hybrids fed with Khasaki mulberry variety.

Key words. Biological, hybrid, prospective, comparable, viable.

ANNOTATSIYA

Ushbu maqolada, istiqbolli tutnavlari bilan ipak qurti duragaylari parvarishlanib, ularning biologik ko'rsatkichlari o'rganilgan. Olingan natijalardan shuni ko'rish mumkinki variantlarning biologik ko'rsatgichlari ichida Jarariq-5 tut navi bilan boqilgan ipak qurti duragaylari orasida eng yuqori hayotchanlikka ega bolgani Go'zal x Marvarid (Oltin vodiy-2) 1-jadval 3-variantida kuzatilgan yaniy 96,0 % ni tashkil qilgan. Eng kam kasallanish foiziga ega bolgani 1-jadval 3-variantda 2,63 % kuzatilgan. Saniish-33 tut navi bilan boqilgan ipak qurti duragaylari orasida eng yuqori hayotchanlikka ega bolgani Ipakchi-2 x Ipakchi-1 duragayida 2-jadval 2-variantda 95,6 % kuzatilgan. Kasallanish foizi bo'yicha eng kam ko'rsatkich 2,73 % 2-jadval 1-variantda kuzatilgan. Olib borilgan tajribalarda ijobiy natijalar olindi va istiqbolli tut navlari bilan boqilgan tut ipak qurti duragaylarining biologik ko'rsatgichlari xasaki tut navi bilan boqilgan duragaylarga nisbatan yaxshi ko'rsatgichga ega bo'lishi isbotlandi.

Kalit so'zlar. Biologik, duragay, istiqbolli, qiyoslovchi, hayotchanlik .

АННОТАЦИЯ

В данной статье выведены перспективные сорта шелковицы и гибриды тутового шелкопряда и изучены их биологические показатели. Из полученных результатов видно, что среди биологических показателей вариантов, среди гибридов тутового шелкопряда,

откормленных сортом шелковицы Жарарик-5, наибольшую жизнеспособность имели Гозал х Марварид (Олтин водий-2), наблюдались в варианте 3 таблицы 1, составила 96,0%. Вариант 3 таблицы 1, имеющий самый низкий уровень заболеваемости, составляет 2,63%. Среди гибридов тутового шелкопряда, откормленных сортом шелковицы Санииш-33, наибольшая жизнеспособность наблюдалась у гибрида Ипакчи-2 х Ипакчи-1 - 95,6% в варианте 2 табл. 2. Самый низкий показатель процента заболеваемости 2,73% наблюдался в варианте 1 табл. 2. В проведенных опытах получены положительные результаты и доказано, что биологические показатели гибридов тутового шелкопряда, скармливаемых перспективными сортами шелковицы, имеют лучшие показатели по сравнению с гибридами, скармливаемыми сортом шелковицы Хасаки.

Ключевые слова. Биологический, гибридный, перспективный, сравнительный, жизнеспособный.

INTRODUCTION

Today, silkworms are grown in more than 20 countries around the world and 800-850 thousand tons of cocoon raw materials are harvested. “In the People's Republic of China, 600-650 thousand tons are grown, in India 122-130 thousand tons, in Uzbekistan 20-22 thousand tons of live silkworm cocoons are grown. Increasing attention to natural fibers in the world market, further improvement of the quality indicators of cocoon products requires the effective use of scientific achievements and innovative innovations in its cultivation. It is especially important to use new promising varieties that have high resistance to various external stress factors, valuable economic characteristics, chemical composition and nutritional value, especially when breeding mulberry varieties and hybrids as food for silkworms.

In recent years, world breeders have been developing new innovative technologies for growing mulberry varieties that are suitable for harsh continental natural climatic conditions, have a high level of water-retaining properties and a rich chemical composition, based on global climate change. Scientific research is especially important in ensuring a high level of productivity and quality indicators of mulberry leaves obtained from 1 mulberry plant, especially now, with the rational use of modern methods of molecular genetics and vegetative selection.

LITERARY ANALYSIS AND METHODOLOGY

Scientists of the People's Republic of China in the formation of biological and economically valuable traits of the silkworm [1] To gain insight into the effect of different diets on the growth and development of domestic silkworms at the protein level, the growth of cultivated silkworms in fresh mulberries used a comparative proteomic approach to study proteomic differences small intestine, hemolymph, fat body and posterior silk gland. Leaves and artificial diet. The scientists identified 76 differentially expressed proteins, of which 41 proteins had increased expression and 35 proteins had decreased expression. Combined with database search, Go analysis and Kegg pathway analysis, some hemolymph proteins such as Nuecin, gloverin-like proteins, PGRP, P50 and beta/-N-acetylglucosamidase were identified in the innate immunity of silkworm and silkworm, which found that it is associated with certain proteins.

Uzbek University [2] and a new complex drug developed in 2021-2022. The main goal of creating this complex drug is aimed at preventing cases of non-cocooning and damage to cocoon harvests in silkworms, which have been returned to the Republic of Uzbekistan in recent years. As a result of studies verified by scientists, there were no problems that the silkworm did not coagulate under the influence of the newly created complex preparation. The complex preparation used in the experiments can be used in areas where there is a problem of unwrapped cocoons, as well as in farms where the disease is widespread, and is recommended for the production and treatment of worms.

In scientific studies verified by Uzbek scientists [3-4], in some steppes it is explained how external environmental factors affect the important biological traits and characteristics of the silkworm during the larval and reproductive periods. Factors such as air temperature, humidity, food area, weight, and air exchange in the room directly affected the development and reproduction of the silkworm and caused a change in the productivity of the worms. Opinions were expressed about the difficulty of finding solutions to theoretical and practical problems in the field of beneficial insects, including the silkworm

Scientists at the Scientific Research Institute of Sericulture of Uzbekistan [5] emphasized the importance of mulberry varieties and hybrids that have high economic value in preserving and improving the genetic and biological characteristics of silkworm breeds and hybrids.

MATERIAL AND METHODOLOGY OF THE RESEARCH

The study was conducted on the basis of the Karakalpak Institute of Agriculture and Agricultural Technologies and the Gulsara Pillachi farm in the village of Naimankul, Takhiatas district. As a research material, a simple method of feeding worms with leaves of mulberry varieties Zhararik-5 and SANISH-33.x Chinese hybrids was used.

RESEARCH RESULTS

Changes in the chemical composition of mulberry leaves have a direct impact on the survival and incidence of silkworm hybrids. It is very important to remove worms as much as possible during breeding and seed production, as well as during the production of a number of technical cocoons. We tried to systematize the effect of silkworm hybrids on the viability and morbidity of promising mulberry varieties. In Table 1, we analyzed the effect of silkworm hybrids on the viability and incidence of silkworms when grown with the promising mulberry variety Jararik-5.

1st Table Biological Indicators of Silkworm (Duragayla) Cultivated with Jarariq-5 Resistant Mulberry Variety in the Conditions of Karakalpakstan (Spring 2022-2023)

Variant	Worms Combination	Years	Worms Livability (%)
1-variant Silk 1 x Silk 2 2-variant	2022	90,40±0,83	3,83±0.50
	2023	92,1±0,9	2.32±0,6
	O'rtacha	91,25±0,86	3,07±1,1
	relative ratio %	**106,03**	**114,9**
Silk 2 x Silk 1 3-variant Go'zal x Marvarid (Golden Valley 2)	2022	90,0±0,40	2,96±0,38
	2023	89,7±1,1	3,14±0,8
	O'rtacha	89,8±1,5	3,05±1,18
	relative ratio%	**103,6**	**115,7**

4-Inspection variant 1-variant	2022	95,7±0,87	2,66±0,62
	2023	96,3±1,16	2,6±0,4
	O'rtacha	96,0±2,03	2,63±1,02
	relative ratio%	**111,5**	**134,2**
Silk 1 x Silk 2	**2022**	86,0±0,53	3,49±0,35
	2023	86,13±1,67	3,57±0,42
	O'rtacha	**86,06±1,1**	**3,53±0,38**
	relative ratio%	**100,0**	**100,0**

When comparing the data obtained from the first table, it was determined that the stable varieties of mulberry trees had a significant impact on the biological indicators of silkworms. The highest indicator in terms of worm livability was observed in the 3rd variant, specifically in the Go'zal x Marvarid (Golden Valley 2) with a value of 96.0%. This showed a 11.5% improvement compared to the control variant. In terms of disease rate, the same variant exhibited the lowest rate at 2.63%. This indicates a 34.2% advantage over the control variant.

2nd Table Biological Indicators of Silkworms (Duragayla) Cultivated with SANIISH-33 Resistant Mulberry Variety in the Conditions of Karakalpakstan (Spring 2022-2023)

Name of silkworm varieties	Years	Silkworm survival rate $\bar{X}$ ±S$\bar{x}$, %	Disease rate $\bar{X}$ ±S$\bar{x}$, %
1-variant: Silk 1 x Silk 2	2022	93,2±1,01	2,44±0,40
	2023	93,0±1,70	3,03±0,55
	average	93,1±1,35	2,73±0,47
	relative ratio%	**99,2**	**114,2**
2-variant: Silk 2 x Silk 1	2022	95,20±1,06	3,64±0,38
	2023	96,0±1,20	3,88±0,32
	average	95,6±1,13	3,76±0,35
	relative ratio%	**101,9**	**82,9**
3-variant: Go'zal x Marvarid (Golden Valley 2)	2022	95,47±0,96	3,21±0,11
	2023	95,2±1,40	3,78±0,39
	average	95,3±1,18	3,39±0,25
	relative ratio%	**101,5**	**92,03**
4-Control variant: Japan x China (foreign silkworm)	2022	95,47±0,96	3,21±0,11
	2023	92,3±0,88	3,04±0,27
	average	93,8±0,92	3,12±0,19
	relative ratio%	**100,0**	**100,0**

2nd Table analysis revealed the degree of influence of the "SANIISH-33" resistant mulberry variety on the livability and disease rate of silkworms. The highest livability indicator was observed in the 2nd variant, specifically in the "Silk 2 x Silk 1," with a value of 95.6%. This indicates a 1.9% improvement compared to the control variant. In terms of disease rate, the 1st variant, "Silk 1 x Silk 2," exhibited the lowest rate at 2.73%. This shows a 14.2% advantage over the control variant.

SUMMARY

In summary, it can be confirmed that the cultivation of silkworms with mulberry varieties that have high productivity and nutritional value positively affects the livability of silkworms. Specifically, the "Go'zal x Marvarid" (Golden Valley 2) silkworms cultivated with the "Jarariq-5" mulberry variety demonstrated a livability average of 96.0% over two years, while the "Silk 2 x Silk 1" silkworms cultivated with the "SANIISH-33" mulberry variety showed a livability average of 95.6% over two years. Additionally, the "Go'zal x Marvarid" (Golden Valley 2) silkworms exhibited the lowest disease rate at 2.63%.

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