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INFLUENCE OF FEED QUANTITY AND QUALITY ON SILKWORM PRODUCTIVITY.

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INTRODUCTION. According to the Resolution of the President of the Republic of Uzbekistan No. 4047 of December 4, 2018, on additional measures to support the accelerated development of the silk industry in the Republic. On the development of the silk industry in the country, the introduction of modern and innovative technologies in the process of cocoon cultivation and processing, increasing the volume of production and export of silk products and attracting foreign direct investment in the industry consistent measures are being taken.

KEYWORDS*. Silkworms, cocoon breeds, hybrids, kinsyu, syova, high productivity, young and old, live cocoons.*

Feed plays an important role in achieving the high productivity traits inherited from farm animals .Silkworm food consists of the following chemical

elements: carbohydrates, oxygen, hydrogen and nitrogen, which are divided into two groups: inorganic and organic.

All plant and animal tissues are made up of water and dry matter. Dry matter consists of organic matter and ash. Organic matter includes various nitrogenous and nitrogen-free compounds. Nitrogenous compounds are composed of proteins and nitrogen-free compounds of a non-protein nature. Nitrogen-free compounds include carbohydrates and fats.

Mulberry leaf is an element of the external environment that is completely reproduced in the body of the silkworm. At the same time, due to the mulberry leaf, the worm's organism adapts to the external environment. Silkworms feed only on mulberry leaves during the worm season. Mulberry leaves contain substances necessary for all young silkworms.

Because the chemical composition of mulberry leaves varies so much, its worm-feeding properties are not always the same. In addition to changes in climate and soil conditions, as well as its age and type, the mulberry tree also changes under the influence of various man-made agro-technical measures. These activities include tree planting, care, selection and hybridization, and selection.

The silkworm replenishes some of the deficiencies in the leaf by eating large amounts of the leaf.

Mulberry leaves are not only an energy source for the worm's body, but also regulate its growth and development. The growth rate of the worm also depends on the degree to which the leaf is fed. As a result, the silkworm tries to grow to a certain size, depending on its breed. However, regardless of the breed of the worm and the chemical composition of the mulberry leaf, the

amount of nutrients required to produce 1 kg of live cocoons is about the same. This thing was determined by the results of a special inspection.

Since the mulberry leaf is one of the necessary means for the worm to adapt to its living conditions, there is a certain degree of difference between the amount of nutrients used in its metabolism and the nutrients used in the production of energy material. does not correspond to one. The exchange of water in the body of the worm also depends on it.

Although humans have domesticated silkworms and changed their living conditions, they have not yet been able to fully meet their ever-changing requirements for leaf quality. For example, in summer and autumn, when the temperature and relative humidity in the larvae are the same, the feeding period is slower than in spring. This is due to the slowing down of the adaptation of various processes in the body of the worm as a result of the reduction of leaf satiety and digestion.

The nut-feeding properties of the leaves of mulberry trees, which are intended for worm feeding in summer and autumn, allow to get a sufficient cocoon yield. However, the fact that the quality of this leaf is much lower than that of spring leaves makes it difficult to obtain a cocoon yield equal to the spring harvest in terms of quantity and quality.

Leaf quality also varies depending on the feeding technique and conditions. Both of these affect leaf quality and the degree to which the leaf is eaten and digested by worms.

Silkworms feed naturally on the leaves that grow on mulberry branches. In domesticated conditions, they are fed on leaves collected from the tree.

The leaf wears out to varying degrees, depending on the humidity in the worm, its ability to evaporate, and the time it takes for the leaf to collect and feed to the worm. Worms eat less of the withered leaf, but the worm eats the leaf until it has 10-20 percent water in it, and then the consumption of such a leaf decreases.

If the worm's regulatory function is insufficient, the humidity in the worm's air should be reduced or increased. Sometimes dehydration of a leaf reduces its quality. Due to the increased demand of the worms for water during the re-feeding of worms in the summer, slightly moistening the leaves and increasing the humidity of the wormhole are of great benefit to the worms.

The nutritional value of a leaf is determined in 3 different ways: biologically, by feeding on worms, by determining the chemical-leaf elements, and by determining the physical properties of the leaf. Of these, the biological method is the most important, and the other two methods provide additional information for the first.

The nutritional value of a leaf is understood to be the nutrient unit of the silk product given to the worm. Nutritional value is the amount of silk obtained from 1 kg of eaten leaves. Leaf ingestion is the percentage of leaves eaten by a worm.

The coefficient of leaf erosion is determined by the AG Kafian method as follows:$h=\frac{g}{f}$ where h is the bending coefficient, g is the bending leaf and f is the amount of leaves given.

Table 1

To the level of construction of a new leaf given to the worm

depending on consumption (in percent)

Decrease in water in the leaf, depending on the degree of construction, in percent	The new amount given to the leaf worm, in%		
	III	IV	V
0	100	100	100
10	90	91	93
20	58	59	82
30	39	44	62
40	21	23	53
50	-	13	32

According to Bahoviddinov, in some cases the worms can be fed by wetting a slightly withered leaf. When some species of worms are given a new leaf, they first gnaw on the leaf blade and eat its flesh when the leaf begins to wither, which is one of the measures to regulate the worm's water needs.

The task of the cocoon is not only to renew and slightly moisten the leaf, which is necessary for the worm, but also to change the degree to which the leaf feeds on the worms. These modifications include feeding the worms with mulberry leaves, leaves enriched with carbohydrates and several other biological additives. As for the amount of leaves given, this is decided by the number of leaves given and the size of the worm-feeding surface.

Silkworms eat up to 20 g of leaves at the age of five. Eats fewer leaves in the first days of life, mostly in the middle of age. The worms are fed by pulling the leaf without a band to determine the amount of leaf eating. The weight of the dried leaf is determined from the leaf samples taken. Uneaten leaves are also detected by drying. The amount of leaves eaten is determined by taking the weight of the leaves left uneaten from the weight of the leaves given. For the experiment, the leaves were taken in 20 repetitions of 3 grams,

the leaf samples and the inedible residue in the ghana were taken and dried in a drying cabinet. This removes worm droppings from Ghana.

The amount of leaves given to the worm and the part eaten is determined by the coefficient of leaf consumption, ie the percentage of leaves eaten relative to the amount of leaves given.

At present, in our country, the old breeds of silkworms are being replaced by new and high-yielding breeds. Experiments are being carried out to determine the amount of leaves required for 1 box 19g worm for these new breeds. The results of an experiment on the amount of leaves eaten by 100 worms are as follows.

According to the rules of agrotechnics, a box of silkworms consumes a total of 1000-1200 kg of leaves.

The nutritional value of mulberry leaves depends on the amount and proportion of nutrients in the leaves that are digested and absorbed by the worm. This figure varies in different varieties of mulberries, and the age of the mulberry tree depends on the growing conditions.

The nutritional value of a leaf is determined by the weight of the cocoon or the amount of silk obtained from 1 kg of eaten leaf.

Table 2

Feed intake and the amount of leaves consumed by box 1 worms.

№	Age	Given leaf	At the expense of the crushed leaf g	Leaf consumption coefficient %	1 box of leaves consumed by worms kg	Leaves consumed per 1 g of egg, kg
1.	1- young	14,2	1,3	9,7	6,6	0,24

	worms					
2.	2- young worms	45,6	11,9	26,0	20,1	0,75
3.	3- young worms	147,6	56,0	31,7	70,3	2,58
4.	4- young worms	455,5	227,5	50,9	20,5	7,56
5.	5- young worms	2288,3	1236,1	54,8	910	33,43
	Total:	2962,2	1532,8	52,1	1212	44,56

The body does not digest all the food it eats. In the intestine, the leaf is digested by intestinal juice enzymes as well as the inner epithelial cells of the midgut. In this case, the nutrients of the leaf are broken down into simpler parts and absorbed into the body. For example, starch is absorbed into the bloodstream by cells. Fats are broken down in the intestines into fatty acids and glycerin, which are absorbed into intestinal cells.

Undigested nitrogenous substances are excreted in the feces in the form of feces.To determine the absorption of food, the amount of food that the worm enters the intestine at each age is determined by the ratio of the amount of feces excreted during this period.

At the age of four, silkworms absorb two-thirds of the food they eat, and by the age of five, they digest half of it. As the worms age, their digestion decreases, as the larger worms cut off the leaves and do not break down well in the intestines.

An average of 62% of protein, 59% of fats and 40% of carbohydrates are absorbed by the body. Female silkworms eat and digest 20% more food than male worms.

The nutritional value of mulberry depends on the navigation of the mulberry, the nutritional composition and condition of the leaves, age, / age. The leaves of mulberry varieties differ in their chemical composition. For example, Table 3 shows that the highest nitrogen content in Tajikistan is 3.66% in the seedless variety and the lowest is 3.20% in the Uzbek variety.

Table 3

Nutritional composition of mulberry leaves of the variety

№	Mulberry varieties	The amount of water%	Total nitrogen, %	Protein nitrogen, %	Carbon waters%	Gray,%
1.	Tajikistan is seedless	70,1	3,96	3,36	16,2	9,15
2.	Folding	71,6	3,90	3,60	16,1	10,3
3.	Welded	71,4	3,70	3,40	15,0	12,4
4.	Uzbekistan	68,8	3,20	2,70	14,2	12,7
5.	Duragay mulberry leaves	69,7	3,42	3,14	13,8	12,9

The nutritional value of mulberry leaves also depends on the location of the mulberry leaves. The young leaves on the upper part of the stem are rich in protein and nitrogen. When worms feed on young leaves, they speed up the process of eating, digestion and absorption.

High yields from mulberry silkworms are guaranteed by feeding on the leaves of mulberry trees.

The results of research on feeding silkworms with mulberry leaves show that quality and nutritious food reduces the feeding period of worms, increases the viability of worms, cocoon yield and its breeding properties.

Table 4

Silkworms with navdar mulberry leavesthe effect of nutrition on productivity traits.

№	Mulberry varieties	Lichinka period, day	worm viability, %	Average weight of cocoon, g	Quantity of cocoons,%
1.	Tajikistan is seedless	21,5	90,5	2,23	88,5
2.	Folding	21,5	91,0	2,21	89,0
3.	Welded	21,6	89,5	2,19	87,0
4.	Uzbekistan	22,0	89,0	2,13	86,0
5.	A mixture of hybrids	22,0	88,0	2,10	85,0

It is known that the level of productivity of farm animals depends on their food supply. High-yielding animals also reduce their productivity due to malnutrition. In animal husbandry, rations and feed standards have been developed for each farm animal.

Leaf standards have been set for a box of worms in silkworm breeding. However, in production conditions, ie in the conditions of feeding worms in rural households, these norms are ignored, and in many cases there is a shortage of leaves, which adversely affects the yield. The impact of industrial

hybrid worms on productivity in the event of malnutrition has been studied by N.Akhmedov. The experiments were carried out on Tetraduragay 3 worms in two variants, the worms of the first variant were fully supplied with leaves at the rate of 1200 kg per box, and the worms of the second variant were given half of the norm or 600 kg of leaves. The effect of silkworm diets on worm feeding time, viability, weight, and productivity is given in

Table 5.

Changes in the feeding period and cocoon rates depending on the level of feeding of the worms.

№	Worm feeding options	Worm period, day	Vitality %	Number of cocoons, %	Average weight of cocoon, g	Cocoon shell weight, mg	Silk, %
1.	100% normal feeding of worms	24,0	87,4	92,1	1,88	446	23,7
2.	50% of worm rate	27,0	65,2	83,0	1,33	294	22,1
3.	% Compared to the second option	88,9	134,0	110,9	141,3	151,7	107, 2

When the worms were fed at 50%, the duration of the feeding period was 3 days, the viability was 22.2%, the number of cocoons was 8.9%, the average weight of the cocoons was 0.55 g, and the weight of the cocoon shell. 152 mg and cocoon silk decreased by 1.6%.

The nutritional quality of mulberry leaves varies depending on the type, sex, age, growth conditions, operation, etc. of the tree. depending on the characteristics of

The nutritional quality of the leaf is determined by the degree to which it is eaten and digested by the silkworm, and ultimately the amount of silk mass formed. Consequently, there is an intrinsic relationship between the nutritional quality of the leaf and the silkworm mass and silk content of the worm that consumes it.

Leaf quality is a complex concept that depends in many ways not only on the physical properties of the leaf and the amount of chemical elements in it, but also on its quality and their ratio. Therefore, along with the amount of protein and sugar in the leaves, its quality is currently being tested using biochemical methods.

The nutritional value of the leaves is higher in male trees than in female leaves.

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