

The Effect of Poisoning Level of Feed Given to Mulberry Silkworm on Larvae Survival and Colon Productivity

Bekkamov Chorshanbi Ismailovich

Candidate of Agricultural Sciences, Professor, Department of sericulture and mulberry industry

bekkamovchorshanbi@gmail.com

Tashkent State Agrarian University (Uzbekistan, Tashkent)

Mirzayeva Yorkinoy Yarkulovna

Senior lecturer, Doctor of Philosophy in Agricultural Sciences (PhD), Department of sericulture and mulberry industry

mirzayevayorqinoy@mail.com

Tashkent State Agrarian University (Uzbekistan, Tashkent)

Annotation: The causes, symptoms, diagnosis and prevention of diseases caused by the poisoning of the leaves of mulberry trees, which give special nutrients to different agricultural crops during the agrotechnics of mulberry silkworm care during the agrotechnics of mulberry silkworm care by farms, clusters and homesteaders in our republic. It is intended to achieve high-quality cocoon cultivation by saving larvae by applying measures.

Key words: egg, larva, hatchery, worm feeding, worm house, worm feeding units, agrotechnics, temperature, relative humidity, feed, microorganisms, chemical preparations, disease, special traps, cell, molt, cocoon.

Research object. The poisoned silkworms brought from the worm-feeding units of Birlik Ok-ovul garden eram Raimqul f\х, Saksan osha ota Umid-bog' Ruzimetov house Agrotterra f\х, Birlik zamon sardi Baraka f\х in Ohangaron district of Tashkent region and Ukureni Chirchik district were studied.

The purpose and task of the research. Monitoring and study processes were carried out in several districts of Tashkent region in order to determine the causes of diseases observed due to silkworm poisoning. Bestseller 20% k.e. it was determined that it was treated with a chemical preparation. In order to study the effect of the Bestseller 20% k.e. drug, "0.05 - 0.075 in the amount recommended in the list of chemical and biological protection agents, defoliants and plant growth regulators approved for use against plant pests, diseases and weeds in the agriculture of the Republic of Uzbekistan; and 0.015 and 0.0075% solution, (reduced by 5 and 10 times) and 0.01 and 0.005% solution were tested in laboratory conditions.

The analysis of the obtained results shows that from the 2nd day of the experiment, cases of vomiting were observed in the worms, and the treated larvae began to die. It was observed that 87-95% died when exposed to a 0.05-0.075% solution of the drug, and 57-79% when the amount of the drug was reduced by 5 times, that is, when exposed to 0.015 and 0.0075% solutions. In addition, 50-53% death was observed when exposed to 0.01 and 0.005% solution with a 10-fold reduction in the amount of the drug. It was found that all the worms that were cared for during the spring worm feeding season were 100% dead. Тут ипак қуртида касалликларни текшириш натижалари.

All living organisms, as well as insects, are constantly affected by external environmental factors - temperature, humidity, nutrients, air exchange, light and microorganisms. Sometimes external environmental factors affect the digestive system, respiratory system, nervous system, blood circulation system and other internal organs in the internal body cavity, resulting in a life-threatening disease. Silkworms, like other insects, are affected by various diseases, resulting in a decrease in the quantity and quality of cocoons produced. Parasitic microorganisms that cause mass disease in these problematic situations include bacteria, fungi, viruses, and protozoa.

Bacteria are single-celled microorganisms that belong to the category of small microscopic plants, and their appearance is divided into round, rod-shaped, comma-shaped and spiral-like twisted forms. Round bacteria include cocci, diplococcus, streptococcus, tetracocci, etc. All of them differ in their variability during

reproduction. This disease appears when the rules of feeding worms are not fully followed. Bacteria often cause diseases in the third, fourth, and especially the fifth instar larvae, and when the following symptoms are observed, the worms become emaciated, have diarrhea, eat less leaves, the body hangs loosely in a sack-like appearance, they lose weight without developing well, and they secrete liquid from the anal hole, and the skin looks wrinkled, shrivel and turn brown.

Fungi are microorganisms that belong to the category of chlorophyll-free plants with a more complex structure than bacteria. Most true fungi are divided into higher and lower fungi. In benthic fungi, the mycelium is not well developed or at all not divided into separate cells in the form of hyphae. A fungal cell consists of a membrane, protoplasm, and one or more nuclei. There are several types in nature: molds, yeasts, and advanced fungi. Boveriosis or white muscardine disease is a parasite of the mulberry silkworm. Coming out of the fungus, the body of the larva forms a spot or fluffiness on the substrate, like a dense powder, white or pink, with a red border. Aerial hyphae have bands of conidia, which form conidia (spores) at their tips. Hyphae serve to grow through bands of conidia of growing mycelia that are attached to each other without color. Spores can be stored in the silkworm body for several hours or days when the humidity of the wormholes is high (90%) when there is an opportunity for the development of spores (conidia). As soon as favorable conditions (cyst) are met, it becomes larger in 5-8 hours, and after 12 hours it begins to grow in the body of the worm.

In general, the infectious hyphae of fungi depend on the hemolymph of the larva, which begins its development and reproduces by budding. After 36-48 hours of this process, the hemolymph of the larva is filled with hyphae of the fungus, and the infected worm stops moving. In this, the hyphae branch and form a rapidly growing mycelium. The appearance of the disease (if it has a mass appearance) is observed in the 3rd year of the larva, the appetite of the infected worms is disturbed, as a result of which the movement gradually decreases due to the occurrence of tiredness and fatigue. The body of the larva becomes pale and the weight of the worm decreases due to the imbalance of water in the body. A hole is formed in the pressed area of the body, and dark spots of various sizes are formed on the body. Such spots are more common around the breathing holes, at the base of the false legs. In some cases, the tips of the false legs darken, and between the larva's head and the first joint of the thorax, distinctive spots are formed. If the fungal disease coincides with the shedding period, it becomes more difficult to shed the skin, and as a result, it is not possible to completely shed the skin.

If this condition is in the last age of the larva, it can wrap around the cocoon and turn into a cocoon, but the death of the cocoon is observed, the cocoon is 3 times lighter than the living cocoon, and the cocoon inside the cocoon hardens to form a kind of deaf cocoon. In order to prevent this negative situation, it is necessary to pay attention to the age of the worms, the density of their placement, the feeding area and the thickness of the gana under them, in which case, due to the increase in air humidity and the thickening of the gana, when rapid mold occurs, the spread of the disease increases.

A virus is a microorganism that causes infectious diseases in animals and plants. When viruses multiply, they form bodies, which are called polyhedra. Most viruses damage the nucleus of hemolymph (living blood cells - hemocytes), they are called nuclear polyhedrosis and form six-sided crystalline bodies - polyhedra in the damaged nucleus of the cell. Silkworm nuclear polyhedrosis is common, and yellow disease is caused by viruses. Silkworms are infected with this disease during the egg-laying and, in most cases, larval stages, and the viruses mainly enter the digestive organs with food. Viruses cannot develop in dead cells, because they start their life activity from the cell nucleus, damage it, and as a result form polyhedra 5-15 mm in size. Observations and investigations have shown that silkworms have six-sided polyhedra. Therefore, the nucleus of the cells in the body of a worm infected with yellow disease is infected, and then it completely disables their activity, as a result, the cell rots and when it forms a multifaceted body, it infects the blood cells.

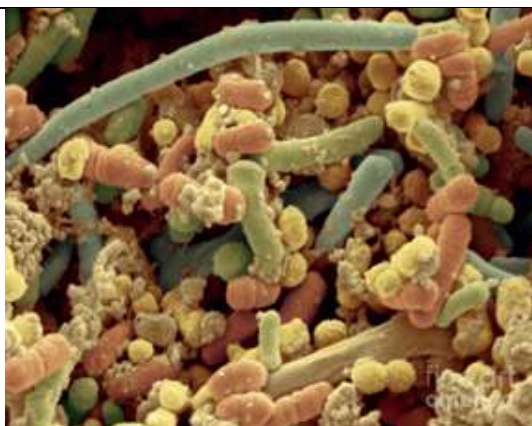
Symptoms of the disease - death of silkworms from yellow disease is often observed in their last years, sometimes even young worms are infected with yellow disease, and the latent development period lasts 6-8 days. In the initial period of the disease, worms lose their appetite, they are restless, and then spots similar to oil stains on paper appear on the body of worms. These spots coalesce, the skin becomes shiny, swelling appears between the joints, and the body shrinks. A diseased silkworm's body becomes excessively swollen, lies motionless on branches or branches, and often falls from the suckers.

Nozematous disease - Nozematous disease is one of the most dangerous diseases of mulberry silkworm, and it is caused by Nozema spore, which is a protozoan parasite. In addition, among those found to contain parasitic infusoria, entomoebae, coccidia, trypanosomes from chives, and nozema spores from spores, the most dangerous is nozema spore, which causes pebrina disease in mulberry silkworms.

Disease symptoms: Pebrina disease is the most dangerous and widespread disease of silkworms, it is infected in all stages of development (egg, larva, pupa, and butterfly) and is transmitted from generation to generation. The order of egg-laying of female butterflies infected with pebrina is disturbed, as a result, the eggs do not stick together in sticky egg-laying breeds and hybrids, and due to poor embryo development in infected eggs, the percentage of survival in the hatchery is low.

Sometimes the hatched worms die in their first and second instar. However, when this disease begins in the larval stage, the disease progresses very slowly, causing loss of appetite, weakness and stunted growth, and as a result, the larva has difficulty molting or cannot emerge from the old cocoon. Infected worms do not begin to cocoon, and sometimes cocoon before cocooning. Therefore, the cocoons wrapped by diseased worms are usually small, thin-skinned, and low-silk cocoons. Severely infected mushrooms die and dry up inside the cocoon, resulting in dark blue spots on the body. Butterflies infected with pebrina have a shortened life span and die without laying eggs, dark blue spots form on their wings.

The results of the research: in infected silkworms brought from the worm-feeding units of Birlik Ok-ovul garden eram Raimqul f\X, Saksan osha ota Umid-bog' Ruzimetov house Agroterra f\X, Birlik zamon sari Baraka f\X in Ohangaron district and Ukureni Chirchik district of Tashkent region upon examination, it was found that most of them were infected with nuclear polyhedrosis virus and bacteria and fungi belonging to the Fusarium bacillus family. The occurrence and spread of diseases such as any fungal diseases are caused by an excessive increase in external environmental factors. Therefore, it is necessary to strictly control the rapidly changing temperature, relative humidity, air exchange and thickening of the gana in the worm houses. The symptoms of worms infected with nuclear polyhedrosis virus, as we have mentioned above, are swelling of the body, secretion of liquid in worms, changes in their color



Pic. 1. Appearance of bacteria in the gut of a mulberry silkworm



Pic. 2. Appearance of silkworms killed by poisoning and infection of larvae feeding on treated mulberry leaves.

Based on the analysis of the above-mentioned data and pictures, measures to prevent mulberry leaf poisoning in the protection of silkworms from infectious and non-infectious diseases are carried out on the basis of measures:

1. The most correct way to diagnose the disease is to prepare micropreparations from infected eggs (seeds), worms, mushrooms and butterflies, and observe the sample under a microscope with a magnification of 600-800 times;

2. Bringing the sanitary-hygienic situation to the required level by cleaning the surroundings of farms, modern clusters and homesteaders' incubators, special worm houses, temporary buildings, yards, corridors, surroundings and buildings where worms are fed from waste, burning or burying waste. ;

3. Disinfection of incubators, special worm houses and buildings intended for worm rearing with a 6% solution of the uniform of unity with the surrounding area during the period when they are equipped with the necessary inventory;

In this case, it is necessary to close the doors and windows of the rooms for 3-4 days after spraying formalin, and to ensure that the moderate temperature inside is not lower than 25-27°C, after starting to feed the worms, do not allow outsiders except the authorized leaders and experts to enter the worm houses;

4. In order to change the external environmental conditions in silkworm nurseries and make them more resistant to diseases, it is necessary to create a moderate hydrothermal regime in the existing silkworm nurseries, and to take measures to eliminate the source of infection in cases where yellow and pebrina diseases are detected during monitoring of the health of the silkworms according to their young;

In a word, if the solutions to the problems analyzed above are solved in time, one of the most important factors in the production of industrial cocoons of competitive quality is providing the fed larvae in the specified amount in the agrotechnical feeding, moderate temperature (24-27°C) and relative positive efficiency is achieved by maintaining humidity at 65-75%, maintaining sanitary and hygienic conditions during the young age of the mulberry leaf being fed, and feeding each box of worms in a feeding area unit of at least 60 m².

List of used literature

1. K.Sengupta Govindaiah Pradip Kumar. Diseases and pests of mulberry and their control, India, 1991.
2. Н.Ахмедов. “Ипак қурти экологияси ва боқиш агротехникаси”. дарслик.“Ўлпон” нашриёти Тошкент, 2014.
3. У.Абдуллаев. – «Тутчилик». Т.: «Меҳнат» дарслик, 1991, 399 бет.
4. А.Шералиев, Н.Ахмедов, С.Собиров “Тут касалликлари ва зараркундалари.” Ўқув қуланма, Тошкент, 2009, 157 бет.