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DEVELOPMENT, EPISOTOLGY, TREATMENT AND PREVENTIVE  
MEASURES OF EMERIOSIS IN RABBITS

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**Annotatsiya** – ushbu maqolada quyonchilik xo‘jaliklarida keng tarqalgan invazion kasalliklardan biri eymerioz haqida keng ma‘lumotlar keltirilgan, hususan kasallik chaqiruvchi eymeriyalar ularning oosistalari, quzg‘atuvchining rivojlanishi sog‘lom organizimga tushish yo‘llari va kasallikning klinik belgilari hamda davolash va oldini olish choralari batafsil keltirilgan.

**Калит сўзлар:** Қуён, Coccidiida, Eimeriinae, эймериоз, эймерия, ооциста, спора.

**Abstract** - this article provides extensive information about Eimeria, one of the most common invasive diseases in rabbit farms, in particular Eimeria, the causative agent of the disease, their hosts, the development of the causative agent, the way it enters a healthy organism, and the clinical symptoms of the disease, as well as treatment and prevention measures.

**Key words:** Rabbit, Coccidiida, Eimeriinae, eimeriosis, eimeria, oocyst, spore.

**INTRODUCTION.** Animal husbandry plays an important role in the development of Uzbekistan's economy. Supplying the people of our independent republic with livestock products (meat, milk, oil) and raw materials for industry is one of the urgent problems facing our government.

The development of agriculture, which is an integral part of the national economy of the Republic of Uzbekistan, plays a special role in ensuring the well-being of our people. In this regard, the policy of the President of our country, Sh.M. Mirziyoev, who is steadily conducting fundamental reforms in agriculture, is the main factor in increasing the production of agricultural products.

One of the reforms implemented in livestock breeding in recent years is the development of private agrofarms. But in addition to all the opportunities created to increase the number of livestock and increase their productivity, there are also factors that prevent them. Among them are various parasitic diseases that are common among farm animals in all regions. These diseases cause some economic damage to farms. A decrease in the quantity and quality of meat, milk, fat, wool products in animals affected by the disease, damaged organs (liver, lungs, stomach, intestines, etc.) for meat products or in animals that are forced to be slaughtered, even the entire meat product becomes unusable, exposed to the disease. The costs of treatment for infected animals and the death of those that cannot be treated indicate the great economic damage caused by parasitic diseases to farms.

All of the above require agrofarm managers and veterinary specialists to thoroughly study parasitic diseases, to be able to protect all types of animals in livestock farms from parasitic diseases.

Eimeria is an invasive disease caused by Eimeria, a single-celled simple parasite of the Eimeriinae family of the Coccidiidae family observed in rabbits, mainly in young rabbits. It is clinically characterized by weakness, lethargy, severe, in some cases, diarrhoea.

Eimeriosis causes great economic damage to rabbit farms. In these farms, rabbits can be completely exterminated overnight.

**LITERATURE ANALYSIS AND METHODOLOGY.** The stage of development of the pathogen in the rabbit organism is called the endogenous stage. The endogenous stage of representatives of the subfamily Eimeriinae is unique and develops in one type of animal organism and is called monoxenous development.

The exogenous stage of development takes place when there is sufficient temperature, moisture and oxygen in the external environment. As a result of the sporogony or sporulation stages, sporocysts and sporozoites are formed in oocysts. Diseases caused by representatives of the subfamily Eimeriinae are called eimeriosis or coccidiosis.

Each type of animal contains 4-5, even 15-20 species of eimeria, which are parasitic mainly in the intestines and liver. Their oocysts (eggs) are oval, round, elliptical, yellowish or brown in color and of various sizes.

Rabbits are infected with Eimeria oocysts through water or food. Oocysts are very small. Eimeria oocysts parasitizing rabbits are 12 to 35  $\mu\text{m}$  long. Each oocyst contains 4 sporoblasts (sporocysts). Each sporocyst contains 2 small worm-like motile sporozoites. The shells of oocysts and sporocysts that enter the intestine with food or water are destroyed, and sporozoites are released into the intestinal cavity. Sporozoites actively move, enter the cells of the intestine, liver, pancreas and feed and turn into the growing stage - trophozoites. Trophozoites grow rapidly. Their nucleus divides many

times in a row, forming multinucleate schizonts. After that, the schizonts divide and form a large number (up to 32) of merozoites. Asexual reproduction by multiple divisions is called schizogony. The merozoites formed as a result of schizogony leave the intestinal cavity and invade neighboring cells, and asexual reproduction is repeated again. As a result of schizogony, the number of parasites increases dramatically. After 4-5 repetitions of asexual reproduction, merozoites begin to form gametes.

This happens as follows. The merozoites that enter the cells turn into gamonts that form gametes. Some of the gamonts (macrogamons) grow without division and form a macrogamete (egg). After the growth of the second part (microgametes), the nucleus and cytoplasm divide many times, forming a large number of small microgametes. They have an elongated body and actively move with the help of two long claws. Fertilization occurs when one of the microgametes enters the egg cell and fuses with its nucleus.

The zygote develops into an oocyst by forming a strong double-layered shell. Further development of the oocyst takes place outside the body. In the external environment, the nucleus of the oocyst divides twice, each nuclear fragment is surrounded by cytoplasm, and four sporoblasts are formed. Sporoblasts surrounded by a hard shell are called spores or sporocysts. The nucleus of each spore divides again to form two sporozoites. The oocyst acquires the ability to invade during this period. Thus, each invasion oocyst contains 4 spores and each spore contains 2 sporozoites. When the invasive oocyst enters the animal's gut, the spores and oocysts release sporozoites and development begins again.

**CLINICAL SIGNS.** Eimeria can affect the intestines, liver or both organs of rabbits at once. The disease is acute or chronic depending on the level of infestation of the rabbits. Its signs are not always obvious. At the beginning of the disease, the animal's appetite decreases, it becomes debilitated, it has diarrhea. Diarrhea can alternate with constipation. Gas accumulates in the intestines of rabbits, the intestinal membranes thicken, the bladder fills with urine, the abdomen increases, because the rabbit often urinates, its back and hind legs get dirty, the visible mucous membranes turn white, the rabbit loses weight, and eventually dies. In severe cases, the symptoms of the disease are obvious and last for three to six days (less often two to three weeks). In chronic form, the disease can last up to three months. 70% of rabbits die because they are very scared. Eimeriosis is mildly contagious in older rabbits, which become additional parasite carriers. Young rabbits lose their appetite, their growth and development slow down.

**PATHOLOGOANATOMIC CHANGES.** It will not be very characteristic. The rabbit's intestines, especially the duodenum, are dilated, its wall is thickened, the intestine is full of gas, the mucous membrane is pale and filled with mucus, and it is seen that there is bleeding in the point. When the disease is chronic, the intestinal

mucosa is gray, and it is found that there are many nodules the size of millet grains. The liver is greatly enlarged, there are gray or white nodular lesions on its upper side, and the bile ducts are enlarged.

**DIAGNOSIS.** Infected rabbits are identified by abdominal swelling, frequent urination, diarrhea, and pathologoanatomical changes. A definitive diagnosis is based on the detection of oocysts by examining samples of feces from an infected rabbit by Fülleborn's method or by examining a sample taken from an inflamed part of the intestine by Darling's method. Information on the epizootic condition of the farm, the age of the animals, and the season of the year are also taken into account.

**TREATMENT AND PREVENTION.** When the disease occurs, the following methods and tools are used: in the treatment of eimeria, 1 ml of Interkoks oral preparation is mixed with 1 l of water for 2-3 days, or infected rabbits are treated with toltrox 2.5% in two stages, each lasting 5 days, with a break of 3 days between them. The effectiveness of treatment increases when premixes containing coccidiostat are added to feed.

"Concentrate" and "supplements" are recommended for the treatment and prevention of Eymeriosis. In order to prevent the disease, it is necessary to keep the rabbit house clean and dry, to ensure that the breeding grounds are also dry and free from dust, and to regularly use preventive measures in unhealthy farms. Rabbits with Eimeria can recover faster if they are fed a diet rich in carbohydrates.

**PREVENTION AND CONTROL MEASURES.** In order to prevent eimeria, rabbit farms should abandon old methods, it is appropriate to use the experience of industrialized farms today, that is, modern wire mesh cages, food containers with a centralized water system should be installed in such a way that rabbits cannot enter.

The waste of rabbits should be removed in special rooms, and the rooms should be cleaned daily. Rooms should be disinfected with a special flame or boiling water once every two weeks. Eimeria oocysts die quickly when exposed to sunlight. Therefore, it should be used as much as possible. It is advisable to leave the specially enriched food in the sun for a few days before giving it to the rabbits. Baby rabbits are kept separately from adults. Rabbits newly brought to the farm are kept in quarantine and checked for Eimeria oocysts. Rabbits that are old and secrete large numbers of oocysts are lost.

Rabbit carcasses should mostly be eaten or cooked for dogs. Mother rabbits should be cleaned and washed once every 3-5 days. Rabbits are more resistant to disease when they are fed with foods rich in nutrients, cervitamin and certuse.

**CONCLUSION.** in order to prevent disease, rabbits should be kept in mesh cages

- sick rabbits are separated from healthy ones and kept under optimal conditions and must be fed on a diet rich in carbohydrates

- it is advisable to change the sheets every day and to wash the water bottles in boiling water
- literature data shows that eimeriosis is widespread among the invasive diseases of rabbits, taking into account the fact that the field is developing, it is of great importance for the study, practice and production of modern chemoprophylaxis and diagnosis of its spread.

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