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RESULTS OF EXAMINATION OF PATHOLOGICAL MATERIALS SUSPECTED OF ENTEROBACTERIOSIS FROM SHEEP FARMS OF THE REGIONS DURING 2017-2022

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Abstract. During 2017-2022, as a result of laboratory (bacteriological and serological) examination of pathological materials obtained from small horned cattle brought from the regions, the causative agents of Escherichia and Salmonella genera, which are the main enterobacteriosis, made up 9.44%.

Keywords: Enterobacteriosis, Colibacteriosis, Salmonellosis, Yersiniosis, Proteus, S.abortusovis, E.coli, bacteriological, serological, laboratory tests.

Introduction. Today, one of the urgent issues is the development of cattle breeding, which is an important branch of animal husbandry in the countries of the world, ensuring food safety, meeting the demand for livestock products (meat, milk, eggs). Infectious diseases, especially opportunistic enterobacterial diseases, which are common in sheep, are a big obstacle to the development of animal husbandry. Etiology of opportunistic infections (opportunistic gram-negative and gram-positive bacteria) The spectrum of opportunistic infections is very broad, including bacteria, viruses, fungi, and protozoa.

According to recent data, the family Enterobacteriaceae includes the following genera: Arsenophonus (described 1991)-Budvicia (described 1983)-Buttiauxella (described 1981)-Cedecea-Citrobacter-Edwardsiella-Enterobacter-Ervinia-Escherichia (described 1885)-Evingella-Hafnia- Klebsiella-Kluysera-Leclercia (described in 1985) - leminorella (described in 1985) - Moerella (described in 1984) - Morganella-pragia (described in 1988) - Proteus-Providentia-rahnella-salmonella-Serratia-Shigella-Tatumella-Xenorhabdus-Yersinia-Wokenella Current taxonomy of Enterobacteriaceae and nomenclature is changing, new generations are expanding.

Some bacteria belonging to this family belong to usually non-pathogenic and conditionally pathogenic microorganisms. They develop and multiply in mucous membranes, but they can persist for a long time in external objects. Conditionally pathogenic microorganisms cause the origin and development of the infection process when the integrity of the membranes of organs and tissues is broken and the resistance of the macroorganism decreases.

Conditionally pathogenic enterobacteria are representatives of the facultative microflora of the large intestine and are often found in large numbers in studies of samples taken from

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clinically healthy people and animals [11, 17]. The micro-ecological system of the gastrointestinal tract of animals is affected by various unfavorable exogenous (food, water, soil and air pollution) and endogenous factors (immune deficiency caused by diseases of viral and bacterial etiology, rational use of antibacterial drugs) [10-16].

When studying the microbiological spectrum of pathogens of gastrointestinal pathology in animals, bacteria of the Enterobacteriaceae family are distinguished, some of which cause colibacteriosis, salmonellosis, yersiniosis, Proteus infection and other diseases.

Representatives of this family are very diverse in terms of pathogenicity. For example, non-pathogenic types of E.coli usually live in the large intestine and are representatives of the normal microflora. However, with a change in the antigenic structure (OCN antigen), this microorganism can become conditionally pathogenic and invasive. Today, one of the most common diseases of young farm animals is colibacteriosis [19, 20].

Escherichia (Latin, English - Escherichiosis; Russian - escherichiosis, colienteritis, colibacteriosis) is an acute infectious disease characterized by severe diarrhea (enteritis), severe enterotoxemia and septicemia.

Caustic agent of the disease is the enteropathogenic bacterium Escherichia coli. In 1885, the causative agent was isolated from intestinal feces of young children by T. Escherich and named it Bacterium coli commune. Later, in honor of this scientist, this bacterium was named Escherichia coli, and the disease was named Escherichia. Some scientists mistakenly believe that the causative agent of colibacteriosis is Escherichia coli. According to the modern classification, the group of Escherichia coli consists of 3 independent genera of bacteria: Escherichia, Citrobacter and Enterobacter. The next 2 generations of Escherichia are not causative agents of colibacteriosis. All three genera belong to the Enterobacteriaceae family. The antigenic structure of Escherichia is very complex. This bacterium has somatic O antigen, K-antigen in its capsule and shell, and H-antigen in its coat. In general, it is known from the literature that there are about 170 serogroups of Escherichia coli that differ by O-antigen, 100 by K-antigen, and 60 by H-antigen in all species of young animals and birds. Many researchers distinguish the following strains of enteropathogenic Escherichia 08, 09, 015, 026, 041, 055, 078, 0101, 0115 in calves and goats in Uzbek farms, 026, 041, 055, 078, 0111 in chickens and chicks.

Epizootiology data. All species of young animals are susceptible to Escherichia. The disease begins from the 1st day of life to 5-7 months, usually at the end of summer and the beginning of autumn, when the baby is weaned from its mother (especially in the old regions) and put on rough feed. The disease is transmitted mainly by alimentary route, and in some cases aerogenously. Pigs, goats, calves, piglets can get sick in the mother's womb in an unhealthy farm due to colibacteriosis for a long time [21].

Conditions leading to a decrease in the body's resistance have a great influence on the origin of Escherichia. The keeping of young animals in poor, dark, old buildings, the lack of balanced feeding of animals with the necessary nutrients, the lack of sanitation and hygiene on the farm make it possible for diseases to appear among young animals. The specific physiological and immunobiological condition of newborn calves, piglets, piglets, and other young animals is the main factor in the emergence of Escherichia. Firstly, their blood serum does not contain gamma-globulin, which protects them from microorganisms, and secondly, the mucous membranes of the small intestines absorb the proteins in their native state, undigested, and release them into the blood. Thirdly, during this period, the barrier function of the liver has not yet started, fourthly, the immune system is not fully formed and its activity is very low, and

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finally, fifthly, the young organism is not yet able to synthesize its own gamma globulin. Therefore, a young newborn animal has to receive protective proteins with mother's colostrum. If a newborn calf, goat, piglet, piglet does not receive colostrum within 2 hours, microorganisms, including Escherichia, that enter the gastrointestinal system from the external environment, begin to grow there and cause disease.

Escherichia is manifested in septic, enteric and enterotoxemic forms in young animals. If the disease is in a septic form, the sherichia enters the blood immediately after entering the body, infects all internal organs and tissues with it, and brings the young animal to the scientist in a few hours to 1-2 days. This form is characterized by short-term fever (0.5-10°C), diarrhea, dehydration of the body, rapid breathing and pulse, and strong depression. causes toxicosis as a result of absorption of toxins from the intestine. Toxins are distributed throughout the body through the lymph and blood. As a result, the sick animal suffers from toxicosis and collapse.

Diagnosis. Initial diagnosis is made on the basis of epizootological data, clinical signs and pathologoanatomical changes. All these indicators are confirmed by the results of bacteriological tests. If it is not possible to take the whole body to the laboratory, the brain, tubular bone, spleen, kidney, liver, mesenteric lymph nodes and the injured intestine are carefully packed on both sides and sent by a private letter. The pathogenicity of Escherichia is determined by inoculation into white mice and chicks. The serological group of the causative agents is determined by checking the total of immune coli serum. If Escherichia is isolated from the spleen, tubular bone, and brain of farm animals or from at least 2 azos of white mice and chicks subjected to biotests, or the causative agent is found to be enteropathogenic during serological examination, a final diagnosis of Escherichia is made without determining its serogroup and pathogenicity. If pathogenic beta-hemolytic Escherichia for white mice is isolated from the stomach or the anterior part of the small intestine of pigs or its serogroup is determined by an immune O-coli serum aggregate in the agglutination reaction, the final diagnosis of coli enterotoxemic Escherichia (tumor disease) is made.

Salmonellosis (Lat., English Salmonellosis; Russian - salmonellosis) is an infectious disease of various farm animals and poultry, which is characterized by fever and diarrhea in acute cases, and inflammation of the liver and arthritis in chronic cases.

Caustic agent belonging to Salmonella enterobacteria family - Salmonella abortus ovis, in rare cases, Salmonella typhimurium, in goats are infected from the age of 1 day, the level of morbidity decreases with age.

Salmonellosis of young animals is present in all countries of the world, regardless of climate and geographical location. Stationary in this disease is associated with latent bacterial transport between animals. Unfavorable conditions (unsanitary conditions, lack of proteins, vitamins and minerals) allow it to develop. The source of the disease is the carriers of sick and recovered bacteria. Diseased animals contaminate feed, water, roofs, walls, and all objects on the farm with their milk, feces, urine, nasal secretions, and saliva, and they serve as a causative transmission factor. Milk and skim milk are especially important in this area. Young animals are affected mainly by alimentary, less respiratory route. Slaves and ghazis infected through the uterus are born sick and soon get sick. In an unsanitary farm, disease can spread from one species to another, involving mice, flies, and rodents. A lack of protein, vitamins, minerals, especially calcium and phosphorus in food, increased humidity in the building, lower temperature, and increased heat in the building in the summer play an important role in the occurrence of the disease.

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In dogs, the disease occurs in the 1st days of life with very severe weakness, mainly in the case of acute septicemia. They do not suck their mother, they just lie down, their temperature rises to 41-42°C, they breathe hard, their pulse quickens, diarrhea, blood in their feces is observed and they take it in 2-5 days. Salmonellosis manifests itself in the form of pneumonia and arthritis in 2-3 week old dogs. Lying pain, mucous-purulent fluid flows from the nose. Repaired judges do not hang well. When the disease is semi-acute, all symptoms are the same as in the acute form, but appear a little more slowly.

Diagnosis. The diagnosis of salmonellosis in animals is based on clinical signs, pathologoanatomical changes, epizootological data and, of course, the results of serological and bacteriological examination. Analyzing the clinical signs, when the disease is acute, septicemia in young animals of all species, high temperature (up to 41-42°C), depression, increased pulse and breathing, anorexia and diarrhea are taken into account. When the disease is chronic, pneumonia, arthritis in the long and clavicles are detected. A characteristic pathologo-anatomical change is the enlargement of the spleen, the presence of necrotic lesions in it and the liver, a lot of hemorrhages in the serous and mucous membranes, changes in the intestines should be taken into account. For the final diagnosis, laboratory tests will be conducted. They consist of bacteriological (bacterioscopy and separation of pure culture in artificial nutrient medium), immunological (determining the level of agglutinins in blood serum in AR, salmonella antigen in ELISA) and bioassay (experimental challenge of salmonellosis). Parenchymatous azoles, tubular bone of untreated, infected animals, amniotic fluid, blood from live animals, feces, blood serum for serological examination are sent to the laboratory. AR is used for diagnostics. Antibodies should be 1:100 or higher. The driver is defined in the ELISA.

Escherichia coli includes gram-negative, genetically diverse beneficial strains that grow in the gut to highly pathogenic strains that cause intestinal and extraintestinal disease. Enteric pathogenic E.coli (IPEC) and extraintestinally pathogenic E.coli (ExPEC) cause various health problems in the body [1]. These pathogenic strains cause a wide range of infectious syndromes, ranging from simple diarrhea and urinary tract infections (UTIs) to life-threatening septicemia or bacteremia. In addition, the emergence of strains resistant to many antibacterial drugs has a negative impact on the effectiveness of current treatment methods. This creates the basis for global problems such as increasing their resistance to antimicrobial agents. [2; 8].

Studies have shown that the most common diseases among sheep are respiratory pathologies such as pneumonia [3; 8]. Bacterial bronchopneumonia often occurs among sheep that have experienced various stresses, such as transportation, changes in diet, or mixing with unhealthy flocks [5]. The most common bacterial pathogens associated with primary or secondary bronchopneumonia in sheep are Mannheimia haemolytica, Mycoplasma ovipneumoniae, Pasteurella multocida, Bibersteinia trehalosi, Chlamydia pneumoniae and Salmonella [6; 7]. In rare cases, E.coli species have also been isolated from lung or heart blood samples of sheep with pneumonia and septicemia [9].

The purpose of the study. To study and analyze the level of occurrence of these diseases in the regions as a result of the examination of pathological samples suspected of enteriobacteriosis from the livestock farms of the regions of our republic by laboratory methods.

Research object and methods. Laboratory tests During the years 2017, 2019-2023, the data obtained as a result of bacteriological and serological tests of pathological samples brought from conditionally healthy and unhealthy rock breeding farms in Samarkand, Jizzakh, Navoi and Kashkadarya regions in different areas were used.

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Therefore, in order to study the spread of the disease, pathological samples taken from goats brought from sheep farms or forcibly slaughtered were bacteriologically examined in laboratories.

As pathological samples, bone marrow, liver, horse bladder, kidney, spleen, spleen, heart, and sometimes egg yolk were taken and planted in different nutrient media. Samples planted in the nutrient medium were grown in a thermostat at 37°C for 18-20 hours, and at 42-43°C for 20-24 hours. In MPB, the intensity of turbidity of the activator, the thickness of the film on the surface of the medium, the property and consistency of the surface, as well as the formation of a deposit, its condition, color, and turbidity upon tapping are organized.

After growing for 18-20 hours in solid and differential-diagnostic nutrient media at a temperature of 36-37°C, the colonies have their hanging process, shape, size, edge, surface, color, brightness, transparency (observed in incident light), consistency, structure and a number of other factors. indicators are described in a microscope (x8 objective) or with a magnifying glass [18; 20 p.].

After that, mainly S-shaped colonies were selected from the R- and S-shaped cultures characteristic of Salmonella and 5 of each Petri dish were replanted into GPA test tubes. Smears were prepared and stained by Gramm's method when a characteristic suspension of bacteria appeared in the broth cultures.

A droplet agglutination reaction was used to identify and differentiate the type of microbe. For this, separate drops of specific serum and physiological solution (for control) were taken on the glass of the object. In each drop, the tested microbe is removed from the bacterial cell and mixed. If there is a positive result, in 5-10 minutes the liquid is clear, a granular precipitate is formed. In this way, the driver was typified.

Analysis of the obtained results. During the years of 2017, 2019-2022, in which the research was carried out, in order to continuously control the spread of enterobacteriosis from the sheep breeding farms in some regions of Samarkand, Navoi, Jizzakh and Kashkadarya regions, the pathological samples suspected of these diseases were examined, and based on the results, the spread of the disease was determined in the sheep breeding farms in the regions.

During the reporting period of the past years, the following epizootological situation was noted when we examined the pathological materials brought from stone farms in Samarkand, Navoi, Kashkadarya and Jizzakh regions (see Table 1).

From the data in the table, it is known that in 2017, a total of 35 samples were presented from the stone farms of Samarkand, Kashkadarya and Jizzakh regions, the most samples of which were 18 samples from Dehkanabad district of Kashkadarya region, followed by 10 samples from Arnasoy district of Jizzakh region and 7 samples from Urgut of Samarkand region. It is suitable for farms in the district. When all of them were subjected to bacteriological tests, positive results were recorded in 1 of 18 samples (5.56%) from farms in Dekhkanabad district, 2 out of 10 samples (20%) from Arnasoy district of Jizzakh region, and 7 (100%) from farms in Urgut district of Samarkand region. . Thus, in 2017, a total of 35 samples were brought from all three regions, and when all of them were subjected to bacteriological tests, E.coli, a causative agent of enterobacteria, was isolated from 10 (28.6%) samples.

Tablet 1.

Results of examination of pathological materials suspected of enterobacteriosis from sheep farms of the regions during 2017-2022.

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The year the sample was examined	Region of sample was submitted	District of sample was submitted	Count of sample	Method of testing	Positive result	Types of pathogen
2017	Samarkand	Urgut	7	Bacteriological	7	*E.coli*
	Kashqadarya	Dehqonobod	18	Bacteriological	1	*E.coli*
	Jizzakh	Arnasoy	10	Bacteriological	2	*E.coli*
Total:			**35**		**10**	
2019	Samarkand	Pastdargom	4	Bacteriological	1	*S.abortusovis*
		Urgut	30	Bacteriological	5	*S.abortusovis*
Total:			**34**		**6**	
2020	Samarkand	Samarkand	2	Bacteriological	1	*S.abortusovis*
	Kashqadarya	Yakkabog	8	Bacteriological	2	*E.coli*
		Kitob	4	Bacteriological, Serological	1	*S.abortusovis*
		Dehkonobod	10	Bacteriological	3	*S.abortusovis*
			15	Bacteriological	1	*S.abortusovis*
	Navoiy	State center of H.K.T and OOMH	120	Serological	5	*S.abortusovis*
	Jizzakh	Forish	2	Bacteriological	1	*S.abortusovis*
Total:			**161**		**14**	
2021	Kashqadarya	Dehkonobod	22	Bacteriological	4	*S.abortusovis*
		Koson	100	Bacteriological, Serological	2	*S.abortusovis*
Total:			**122**		**6**	
2022	Navoiy	Navbakhor	50	Bacteriological, Serological	2	*E.coli*
	Samarkand	Nurobod	11	Serological	1	*S.abortusovis*
Total:			**61**		**3**	
Everything:			**413**		**39**	

In 2019, a total of 34 pathological samples were brought from the lakes of the Samarkand region, including 30 samples from the Pastdargom district and 4 from the Urgut district, and all of them were bacteriologically examined in the laboratory. According to the results of the laboratory examination, 1 of the pathological samples from Pasdorgom district of Samarkand region, i.e. 25% of cases, and 5 samples from Urgut district, i.e. 16.67% of cases, had a positive result, and S. abortusovis, the causative agent of salmonellosis, was isolated from all of them.

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As a result of the tests carried out this year, an average of 7.64% of enterobacteriosis causing salmonella was confirmed.

In 2020, when the inspections were carried out, pathological samples were brought from several districts of Samarkand, Kashkadarya, Navoi and Jizzakh regions, and a total of 161 samples were carried out using bacteriological and serological methods. According to it, E.coli, which is the causative agent of colibacteriosis, was bacteriologically examined from half of the 2 samples brought from Samarkand district of Samarkand region, from a quarter of 8 samples brought from farms in Yakkabog district of Kashkadarya region, and S. abortusovis, which is the causative agent of salmonellosis, from 4 samples from stone farms of Kitab district. isolated as a result of bacteriological tests. At the same time, 10 and 15 pathological samples from 2 stone-breeding farms of Dekhkanabad district of Kashkadarya region were examined by bacteriological method and 33.3% and 6.67%, respectively, were positive for S. abortusovis.

When 120 pathological samples were brought from Navoi region in 2020 and examined by serological method, the causative agent of S. abortusovis was isolated in 5 cases, i.e. 4.17%. In addition, in this year, 2 samples were brought from stone farms in Forish district of Jizzakh region, and during bacteriological examination, salmonella was isolated in 50% of cases. In general, in 2020, enterobacteriosis causative agents were detected in 8.67% of cases, despite the fact that significant tests (161 samples) were conducted to identify enterobacteria.

In 2021, a total of 122 samples tested for suspected enterobacteriosis were brought only from Dehkhanabad and Koson districts of Kashkadarya region, and an average of 4.9% of the samples were positive for salmonella. Of these, 22 samples brought from Dehkhanabad district were tested by bacteriological methods and 18.18% of cases were S. abortusovis, and 100 samples brought from Koson district were tested by bacteriological and serological methods and 2% of cases were S. abortusovis.

In 2022, the last year of the study, a total of 61 samples from Navoi and Samarkand regions were subjected to serological and bacteriological tests on suspicion of colibacteriosis and salmonellosis. Bacteriological and serological examination of 50 samples from stone-breeding farms of Navbakhor district of Navoi region revealed E.coli, the causative agent of colibacteriosis, from 2 (4%) samples. In addition, S. abortusovis was isolated in 1 (9%) cases when 11 samples were examined by serological methods from farms in the rock farming area of Nurobot district, Samarkand region. It can be seen that in 2022, 61 samples were examined, and enterobacteriosis pathogens were noted in 4.9% of them.

In 2017, 2019-2022, a total of 413 samples from Samarkand, Navoi, Jizzakh and Kashkadarya regions were tested for enterobacteriosis (Salmonellosis and Colibacteriosis). drivers have been confirmed.

If we take into account that 9.44% of the pathological samples suspected of enterobacteriosis of sheep were confirmed in the sheep farms of the above regions in 2017, 2019-2022, we are sure that the problem of the timely treatment of this disease in the sheep farms and the implementation of its prevention measures is once again the most urgent of today.

Conclusions.

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1. During 2017, 2019-2022, as a result of laboratory tests for enterobacteriosis of sheep, 28.6% in 2107, 7.64% in 2019, 8.67% in 2020, 4.9% in 2021 and 4.9% in 2022 These diseases were found in % of cases.

2. In the years of the research, an average of 9.44% of goats from goat farms in Samarkand, Navoi, Kashkadarya and Jizzakh regions were confirmed to have enterobacteriosis.

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