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NECROBACTERIOSIS AND MEASURES TO FIGHT AGAINST IT IN LLP «BAYSERKE-AGRO»

Abstract. The article presents the main non-specific and specific measures in the fight against necrobacteriosis in the conditions of "Bayserke-Agro" LLP. The main etiological and contributing factors necessary for the occurrence of a necrobacteriosis infection are indicated. The clinical picture of the initial stage of the disease of cattle necrobacteriosis is shown. The therapeutic measures for sick animals with this disease are shown. For the specific prophylaxis of necrobacteriosis, the farm has been offered an experimental vaccine against this disease. The results of the experiment on testing the vaccine in the experiment on cattle are given.This indicated that the vaccine was harmless, not reactogenic, and preventive efficacy was 95%. The calculations of economic efficiency with the use of an experimental vaccine are given. It was shown that the payback of veterinary measures when using this vaccine is 36 tenge per 1 tenge of costs.

Keywords: animals, necrobacteriosis, animals, control measures, vaccine.

Necrobacteriosis should be primarily attributed to the number of diseases that have been of increasing importance in recent years and are of practical importance for the livestock industry. Thus, among the group of diseases of infectious diseases, by incidence and mortality, it takes 2-3 place, which gives every reason to consider this disease as one of the factors restraining the increase in profitability of the agricultural sector.

Necrobacteriosis causes significant economic damage to farms, affecting 30-75% of the available livestock, among which waste and forced slaughter amount to 10-14%.

The source of the causative agent of infection are sick animals that excrete the pathogen to the external environment with feces, urine, saliva, excreta, purulent contents of necrosis foci, secretions from the uterus, etc., infecting pastures, watering places, livestock buildings, bedding, dung, care products and others objects. It is also worth noting that necrobacteriosis is a soil infection, i.e. the causative agent of the disease is constantly present in the soil, especially on wet, marshy pastures.

In addition, it was found that the gastrointestinal tract of farm animals is the main reservoir of the infectious agent, which contributes to its constant circulation in walking areas and pastures. Therefore, the source of the pathogen can be not only sick, but also healthy animals - microcarriers.

In the external environment (in stagnant puddles, swamps, wet pastures where the infectious agent with animal excreta, especially manure, falls) it remains viable for 90 days.

Infection of animals occurs both through direct contact of sick animals with healthy ones, and through infected environmental objects when the pathogen enters the injured skin of the extremities, the hoofed horn, the mucous membranes of the gastrointestinal tract and the birth canal. The disease can occur as a secondary infection.

The appearance of necrobacteriosis is facilitated by a number of reasons: injuries of the limbs or mucous membranes of the oral cavity, low sanitary and hygienic condition of the premises (humidity, dampness, manure, etc.), inadequate feeding, lack of vitamins and minerals in the diet.

Most species of domestic and wild animals, as well as humans, are susceptible to necrobacteriosis.

Most often cattle and reindeer are sick, less often pigs, small cattle and horses.

The purpose of the study is to develop and propose effective measures to combat necrobacteriosis in the conditions of the cattle-breeding complex of "Bayserke-Agro" LLP.

Materials and methods. The work was carried out under production conditions, namely in the cattle-breeding complex of "Bayserke-Agro" LLP in Almaty region with a stall technology for keeping animals.

Laboratory studies were carried out in the laboratory of bacteriology LLP of the Kazakh Scientific Research Veterinary Institute. In order to determine the species composition of microflora, the biomaterial was sown on ordinary (BCH, MPA, MPB).

Results and discussion. During a mass survey of cattle at the cattle-breeding complex of "Bayserke-Agro" LLP, isolated cases of the occurrence of this pathology were noted.

In the process of inspection of the total livestock in several animals, we identified the onset of necrobacteriosis infection.

The disease was manifested by slight depression and loss of appetite, a rise in temperature of 0.5-0.7 °C, mass claudication caused by inflammatory changes in the distal extremity. In the next 3-4 days in sick animals on the extremities - in the place of penetration of the pathogen, reddening, swelling, and an increase in the local temperature reaction were noted.

After the discovery of animals with this pathology, all measures were taken for the emergency treatment of sick animals.

Veterinary specialists of this complex were recommended to subject to clinical examination of all animals every 10 days, for the timely detection and isolation of newly infected.

Sick and sick animals were isolated and treated.

The first and one of the important manipulations is the local treatment of a sore limb - this is a mechanical clearing, trimming and "toilet" wounds, which are carried out in a special orthopedic machine with rigid fixation of the affected limb.

Veterinary specialists used foot baths with disinfectant solutions for sick and contact animals: 10% formalin solution, alternated with 10% copper sulfate solution.

For the treatment of sick animals used parenteral and local (external) antibiotic therapy. Parenteral injections of penicillin and tetracycline antibiotics, erythromycin, ampicillin, talan preparations (tylosin), enroflons and other modern antibacterial drugs of a wide spectrum of action, to which the pathogen is sensitive.

For external treatments, aerosol forms of antibacterial preparations based on levomycetin, tetracycline, tylosin, etc. are used.

It should be noted that therapeutic measures allow to obtain positive results with the initial and moderate degree of the course of necrobacteriosis infection. The chronic form of the disease, accompanied by the irreversible deformation of the diseased limb, as a rule, cannot be treated and the animal is rejected.

The most acute and urgent problem of modern veterinary medicine today is the prevention of necrobacteriosis. The most important link, which is the prevention of the introduction of the pathogen into the economy with patients with animals and microcarriers.

In order to prevent necrobacteriosis, measures are being taken to increase the overall resistance of the organism of animals (optimize housing and feeding conditions).

Natural immunity in the treatment of necrobacteriosis in animals is practically not produced.

As an experiment for the specific prevention of necrobacteriosis of animals, a domestic inactivated vaccine against necrobacteriosis of animals was developed.

The vaccine is inactivated, concentrated and adsorbed antigens of both museum strains of microorganisms and epizootic cultures, i.e. derived from local cultures of the pathogen. It should be noted that in the manufacture of the vaccine was used epizootic culture Fus. necrophorum, isolated on the territory of this animal breeding complex. The additional content of epizootic antigens has significantly increased the prophylactic efficacy of the vaccine, increasing its immunogenicity.

This vaccine was successfully tested on the cattle-breeding complex of "Bayserke-Agro" LLP, in experiments on cattle.

The vaccine was administered to clinically healthy animals subcutaneously inthe middle third of the neck in a dose of 5.0 cm^3, twice with an interval of 30 days.

Observation of vaccinated animals showed that the preventive efficacy of an experimental vaccine was 95%, while it was harmless and non-reactogenic for immunized cows.

The use of this vaccine twice a year (spring and autumn) in the livestock complex will completely eliminate the necrobacterium infection and stop the spread of the pathogen, preventing the disease of healthy animals.

I would like to note that detailed calculations of the economic efficiency of using the experimental vaccine on other similar complexes showed that the prevented damage in various farms reached from 853 to 928 000 tenge per year, and the payback period for veterinary measures was 36 tenge per 1 tenge of costs.

Long-term monitoring, analysis of our own research showed that vaccination today is the most highly effective way to prevent necrobacteriosis, and at the same time highly profitable, i.e. quickly - paid back, which allows to significantly reduce the financial costs of disadvantaged farms.

Thus, timely diagnostics, competent conduct of therapeutic and preventive measures (compliance with sanitary and hygienic requirements, balanced diet, the use of specific vaccines) can significantly reduce the incidence of animal necrobacteriosis, and therefore reduce the labor and material costs of livestock farms.

Transparency of research: Studies were carried out within the framework of the program “Development of an integrated system for increasing productivity and improving the breeding qualities of farm animals, using the example of “Bayserke-Agro” LLP, on the task:“Ensuring epizootic well-being in the context of individual epizootological (epidemiological) units”.

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"БАЙСЕРКЕ-АГРО» ЖШС НЕКРОБАКТЕРИОЗ ЖӘНЕ ОНЫМЕН КҮРЕСУ ШАРАЛАРЫ

Аннотация. Мақалада "Байсерке-Агро" ЖШС жағдайында некробактериозбен күресу кезіндегі негізгі арнайы емес және арнайы іс-шаралар берілген. Некробактериозінде тінің пайда болуына қажетті негізгі этиологиялық және ықпал ететін факторлар көрсетілген. Ірі қарамалдың некробактериозбен ауруының бастапқы сатысының клиникалық көрінісі сипатталған. Осы ауру кезінде ауру жануарларға арналған терапиялық іс-шаралар көрсетілген. Некробактериоздың арнайы алдын алу үшін шаруашылыққа осы ауруға қарсы тәжірибелік (эксперименталды) вакцина ұсынылды. Ірі қара малдарға тәжірибелік вакцинаны апробациялау бойынша жүргізілген тәжірибе нәтижелері келтірілген. Бұл ретте вакцина зиянсыз, реактогенді емес, оның аурудың алдын алу тиімділігі 95%-ды құрады. Тәжірибелік вакцинаны қолдану кезіндегі экономикалық тиімділік есебі келтірілген. Сонымен қатар, осы вакцинаны пайдалану кезіндегі ветеринариялық іс-шаралардың өтелімділігі 1 теңгеге (шығынға) 36 теңгені (кірісті) құрайды.

Түйін сөздер: жануарлар, некробактериоз, күресу шаралары, вакцина.

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НЕКРОБАКТЕРИОЗ И МЕРЫ БОРЬБЫ С НИМ В ТОО «БАЙСЕРКЕ-АГРО»

Аннотация. В статье приведены основные неспецифические и специфические мероприятия при борьбе с некробактериозом в условиях ТОО «Байсерке-Агро». Указаны основные этиологические и способствующие факторы необходимые для возникновения некробактериозной инфекции. Показана клиническая картина начальной стадии заболевания крупного рогатого скота некробактериозом. Показаны терапевтические мероприятия, проводимые для больных животных при данной болезни. Для специфической профилактики некробактериоза хозяйству предложена экспериментальная вакцина против данной болезни. Приведены результаты опыта по апробации вакцины в опыте на крупном рогатом скоте. При этом указано, что вакцина была безвредной, не реактогенной, а профилактическая эффективность составила 95%. Приведены расчеты экономической эффективности при применения опытной вакцины. При этом показано, что окупаемость ветеринарных мероприятий при использовании данной вакцины составляет 36тенге на 1 тенге затрат.

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