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BACTERICIDAL AND SPOROCHID PROPERTIES OF THE DISINFECTANT "BA-12" IN THE CONDITIONS OF ANIMAL BREEDING COMPLEX LLP «BAYSERKE-AGRO»

Abstract. The article presents experimental data on the use of the BA-12 disinfectant in the conditions of the cattle-breeding complex Bayserke-Agro. Experience in conducting production tests of a new domestic BA-12 disinfectant is shown. The qualitative composition of the combined disinfectant is given. It is indicated that it consists of basic and buffer solutions, which are mixed immediately before use. To control the quality of disinfection in the experiment, test objects made of wood, concrete, metal, tile, rubber, brick and previously sterilized cattle manure were used. As test strains in the experiment used an aerobic culture of Staphylococcus aureus 209 P and an anaerobic vaccine strain Bac. Anthracis № 55. As a result of the experiment, it was found that the BA-12 disinfectant at 10.0% concentration with a consumption rate of 0,5 l/m^2 and an exposure of 60 minutes has a pronounced bactericidal and sporicidal activity against the Staphylococcus aureus 209 P strains and Bac. Anthracis № 55.

Key words: disinfection, animals, livestock complex.

The urgency of the problem of creating industrial disinfection means is caused by the need to prevent infectious diseases on livestock farms and the associated mortality, reduced gains, reproductive functions of animals and milk yields; preventing the loss of raw materials, feed and finished products during production, transportation and storage from the action of mold fungi and putrefactive bacteria; reduction in product quality due to the action of mycotoxins, the products of the vital activity of fungi; ensuring sanitary standards at enterprises in the presence of extraneous microflora [1].

Currently, a small range of disinfectants has been proposed for prophylactic and forced disinfection, the disadvantage of which is high toxicity, carcinogenicity, relatively low efficiency, insufficient processability, anaggressive effect on metal structures [2, 3].

In addition, an urgent problem is the growth of microflorares is tance to monocomponent drugsand the possibility of sanitation of premises in the presence of animals. For their integrated solution, it is advisabletousenewd is infectants base doncompositions of promising active substances that can increase the efficiency of treatments, reduce the like lihood of the formation of microbial resistance, and disinfectin the presence of animals [4].

The purpose of the study is to determine the bactericidal and sporicidal properties of the BA-12 veterinary disinfectant under the conditions of the animal breeding complex.

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 and differential diagnostic media (Endo agaro). Differentiation of the isolated cultures was carried out on the basis of a study of morphological, tinctorial, cultural, and enzymatic properties.

Results and discussion. As a disinfectant, a new disinfectant veterinary agent "BA-12" was tested, intended for preventive and forced disinfection of veterinary and sanitary inspection objects.

Veterinary disinfectant BA-12 consists of two solutions: basic and buffer. Before using, 1 part of the buffer solution is combined with 8 parts of water and 1 part of the basic solution is added.

The combined agent is a clear, colorless liquid, with a characteristic odor, containing as an active ingredient glutaricaldehyde, didecyldimethylammonium bromide, didecyldimethylammonium chloride and auxiliary components isopropyl alcohol and carbamide.

Before carrying out production experiments, this tool was tested in the laboratory for the main quality indicators, namely: sterility, harmlessness, pH, qualitative and quantitative content of the main and auxiliary components. After receiving positive results for all the above criteria, this tool was tested in the conditions of the animal breeding complex.

Disinfection was carried out in the room (base) for the maintenance of cattle area of 125 m^2 in the absence of animals. Previously, mechanical cleaning of the livestock building and the surrounding area was carried out.

Disinfecting solution "BA-12" was prepared in the tank by adding 5.0 l of the stock solution of the test preparation to 45.0 l of warm water.

To apply the obtained 10.0% disinfectant solution, a hydraulic control was used at a consumption rate of 0.5 l/m^2. After the processing was completed, the windows and doors of the room were closed and left for 3 hours.

To control the quality of disinfection, before the treatment began, two sets of test objects made of wood, concrete, metal, tile, rubber, bricks and previously sterilized cattle manure were laid out in different parts of the room. One copy of the kit contaminated 1 billion suspension of the vaccine strain Bac. anthracis No. 55, and the second suspension of the test strain of Staphylococcus aureus 209 R. Both sets of test objects were treated with a disinfectant solution. The control of the experience were similar test objects not treated with a disinfectant solution.

After the expiration date (60 minutes), samples from the test objects were collected in centrifugal tubes, washed three times with sterile saline and delivered to the testing laboratory of Kazakh Scientific Research Veterinary Institute LLP.

Collected samples of swabs from the test objects were investigated according to the standard technique.

Growth accounting and evaluation of the results of cultivation of Staphylococcus aureus 209 P and Bac. anthracis No. 55 was carried out every day after sowing for 10 days. After the expiration of the observation of the medium in all tubes remained sterile. In the control tubes, an intensive growth of the same cultures was noted.

As a result of the experiment, it was established that the BA-12 disinfectant at 10.0% concentration with a consumption rate of 0.5 l/m^2 and an exposure of 60 minutes has a pronounced bactericidal and sporicidal activity against the strains of Staphylococcus aureus 209 P and Bac. anthracis number 55.

Thus, studies have shown that the disinfecting veterinary agent BA-12 exhibits high bactericidal and sporicidal activity against gram-positive, gram-negative and spore-forming microorganisms, providing the possibility of a wide range of use.

On the basis of the tests carried out, it is possible to recommend the use of the BA-12 disinfectant for disinfection when the livestock breeding premises are contaminated with pathogens of diseases belonging to the II-IV resistance groups.

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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«БА-12» ДЕЗИНФЕКТАНТЫНЫҢ «БАЙСЕРКЕ-АГРО» ЖШС МАЛ ШАРУАШЫЛЫҒЫ КЕШЕНІ ЖАҒДАЙЫНДАҒЫ БАКТЕРИЦИДТІ ЖӘНЕ СПОРОЦИДТІ ҚАСИЕТТЕРІ

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БАКТЕРИЦИДНЫЕ И СПОРОЦИДНЫЕ СВОЙСТВА ДЕЗИНФЕКТАНТА «БА-12» В УСЛОВИЯХ ЖИВОТНОВОДЧЕСКОГО КОМПЛЕКСА ТОО «БАЙСЕРКЕ-АГРО»

Аннотация. В статье приведены экспериментальные данные использования дезинфектанта «БА-12» в условиях животноводческого комплекса ТОО «Байсерке-Агро». Показан опыт по проведению производственных испытаний нового отечественного дезинфицирующего средства «БА-12». Приведен качественный состав комбинированного дезосредства. При этом указано, что оно состоит из основного и буферного растворов, которые смешиваются непосредственно перед использованием. Для контроля качества дезинфекции в опыте были использованы тест-объектыиз дерева, бетона, металла, кафельной плитки, резины, кирпича и предварительно стерилизованного навоза крупного рогатого скота. В качестве тест-штаммов в опыте использовали аэробную культуру Staphylococcusaureus 209 Р и анаэробный вакцинный штамм *Bac. anthracis № 55.* В результате опыта установлено, что дезинфицирующее средство «БА-12» в 10,0 % концентрации при норме расхода 0,5 л/м^2 и экспозиции 60 минут обладает выраженной бактерицидной и спороцидной активностью по отношению к штаммам Staphylococcusaureus 209 Р и *Bac. anthracis № 55.*

Ключевые слова: дезинфекция, животные, животноводческий комплекс.

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