

## Increase of bactericidal activity of neutral anolyte in combination with a salicylic-turpentine suspension

Aliev AA<sup>1,2</sup>,  
Shapiev BI<sup>1</sup>,  
Magomedov MM<sup>1</sup>,  
Kanbulatova ZS<sup>3</sup>.

<sup>1</sup>Dagestan State Medical University, Makhachkala, Russia;

<sup>2</sup>Dagestan State Agrarian University, Makhachkala, Russia;

<sup>3</sup>The Republican center for gifted children Lyceum №9, Makhachkala, Russia



**Objective:** to study the effectiveness of electrochemically activated neutral anolyte in combination with 0.1% salicylic turpentine-chlor-lime emulsion during disinfection of coarse calico test objects.

**Materials and methods:** The bactericidal activity of an electrochemically activated neutral anolyte was studied in combination with 0.1% salicylic-turpentine-chlorine-lime suspension during disinfecting of the surfaces of the test object (brick, wood, iron, rubber, concrete) contaminated by test-cultures (*E. coli*, strain 1257, golden streptococcus, strain 209r) without protein protection.

**Results:** The bactericidal activity of a neutral anolyte in combination with 0.1% salicylic-turpentine-chlor-lime suspension during disinfecting of the surfaces of the test object contaminated by test cultures without protein protection reaches up to 100% at all exposures, and with protein protection such an effect can only be obtained with a combination of neutral anolyte with 0.2% salicylic turpentine-chlor-lime suspension.

**Conclusion:** It is determined that the bactericidal activity of the obtained suspension reaches up to 100% at all exposures, and with protein protection such an effect can be obtained only with a combination of a neutral anolyte with 0.2% salicylic-turpentine-lime-lime suspension.

**For correspondence:** Abdulgamid A. Aliev - Doctor of Biological Sciences, Professor, Head of the Department of Pharmacology, Dagestan State Agrarian University;

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The bactericidal activity of the electrochemically activated neutral anolyte was studied in combination with 0.1% salicylic-turpentine-chlorine-lime suspension when disinfecting the surfaces of the test object (brick, wood, iron, rubber, concrete), and contaminated cultures with test cultures (*E. coli*, strain 1257, streptococcus aureus, strain 209p) without protein protection. It is determined that the bactericidal activity of the resulting suspension reaches 100% at all exposures, and with protein protection such an effect can

be obtained only with a combination of a neutral anolyte with a 0.2% salicylate-turpentine lime-caloric suspension. The necessary measures for the disinfecting treatment of production facilities intended for the maintenance and cultivation of farm animals and poultry, and the production equipment used for this are the most complex and laborious process in animal husbandry and poultry farming. Despite periodic mechanical cleaning of the internal surfaces of rooms and equipment, they are still contami-

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nated by various animal excreta, feed debris, microorganisms, dust, etc. [1, 2].

In modern conditions, research on finding new environmentally safe and economically beneficial with the use of highly effective, disinfecting drugs, providing at the same time disinfection, disinsection and de-hardening of livestock and poultry buildings in the presence and absence of animals and birds. The search for substances that activate, increase the disinfecting effect of already existing disinfectants, pesticides, herbicides, insecticides is also relevant [3-5].

**Purpose:** to study the effectiveness of electro-chemically activated neutral anolyte in combination with 0.1% salicylic-turpentine-chlor-lime emulsion during disinfection of by-product test objects contaminated with 2 billion. suspension of test cultures (*E. coli*, golden streptococcus); study the optimal modes of electro-chemically activated-neutral anolyte in

combination with 0.1% salicylic turpentine-chlorine-lime emulsion with test cultures applied to the surface of test objects from building materials (brick, wood, concrete, iron, rubber, etc.) with protein and without protection; to study the insecticidal and acaricidal activity of electro-chemically activated - neutral anolyte in combination with 0.1% salicylic-turpentine-chlor-lime suspension in the form of aerosols against lice, ticks and fluff-feathers in chickens in individual households. Study of the effectiveness of electrochemically activated sodium chloride solution with insecticidal agents in semi-production conditions.

### Results and discussion

As shown by experimental studies, electro-chemically active-neutral anolyte, in its pure form, without the use of other disinfectants, does not possess insecticidal properties.

**Table.** Bactericidal neutral anolyte in combination with salicylic-turpentine-chlorine-lime suspension in disinfecting the surfaces of the test object (brick, wood, iron, rubber, concrete), kontamirovnyh test - cultures (*Escherichia coli*, strain 1257, golden streptococcus, strain 209p) with dilutions and exposures without protein protection

Object of study (suspensions of microorganisms)	Control (growth of colonies of microorganisms before processing)	The growth of colonies of microorganisms after processing at various dilutions and exposures								
		1:10			1:100			1:500		
		2	3	5	2	3	5	2	3	5
<b>Brick</b>										
<i>E. coli</i>	10000	-	-	-	-	-	-	-	-	-
<i>St. aureus</i>	10000	-	-	-	-	-	-	-	-	-
<b>Tree</b>										
<i>E. coli</i>		-	-	-	-	-	-	-	-	-
<i>St. aureus</i>		-	-	-	-	-	-	-	-	-
<b>Iron</b>										
<i>E. coli</i>		-	-	-	-	-	-	-	-	-
<i>St. aureus</i>		-	-	-	-	-	-	-	-	-
<b>Rubber</b>										
<i>E. coli</i>		-	-	-	-	-	-	-	-	-
<i>St. aureus</i>		-	-	-	-	-	-	-	-	-
<b>Concrete</b>										
<i>E. coli</i>		-	-	-	-	-	-	-	-	-
<i>St. aureus</i>		-	-	-	-	-	-	-	-	-
<b>Brick</b>										
<i>E. coli</i>	10000	+	+	-	+	+	+	+	+	+
<i>St. aureus</i>	10000	+	+	+	+	+	+	+	+	+
<b>Tree</b>										
<i>E. coli</i>		-	-	-	+	+	+	+	+	+
<i>St. aureus</i>		+	+	+	+	+	+	+	+	+
<b>Iron</b>										
<i>E. coli</i>		-	-	-	+	+	+	+	+	+
<i>St. aureus</i>		-	-	-	+	+	+	+	+	+
<b>Rubber</b>										
<i>E. coli</i>		+	+			+	+	+	+	+
<i>St. aureus</i>		+	-	-						
<b>Concrete</b>										
<i>E. coli</i>		-	-	-	+	+	+	+	+	+
<i>St. aureus</i>		+	+	+	+	+	+	+	+	+

The results of the studies carried out in poultry premises are given in the table from which the bactericidal efficacy of a neutral anolyte in combination with salicylic turpentine-chlor-lime suspension in dilutions of 1: 10; 1: 100; 1: 500, respectively, in all exposures during processing surfaces inside the premises that contain birds (brick, wood, iron, rubber, and be-tone), contaminated with suspensions of cultures of *Escherichia coli* cells and *Streptococcus non-proteinaceous aureus* cells, were 100%.

At dilution of the test solution of 1: 1000, the growth of colonies of *Escherichia coli* on the surface of a brick after 2 and 3 hours was weak, and after 5 hours there were no colonies. According to *St. aureus* growth manifested itself in all exposures. Cell cultures of *E. Coli*, *St. Aureus*, planted from the surface of iron, after treatment with the test solution, the bactericidal effect was 100%, from the surface of wood and concrete only *St. aureus* showed a slight increase in exposure in 2-3 hours, and after 5 hours this growth stopped. From the surface of the rubber, the growth of *E. Coli* colonies was good after 2-3 hours, and it stopped at the 5 o'clock exposition; *aureus* in the 2 hours exposure, the growth of the colonies was very weak, and in the rest it stopped after the action of the test preparations.

For the final identification of the optimal modes of disinfection, we used the same test cultures applied to the surface of the test — objects (brick, wood, iron, rubber and concrete) with white or organic protection. Test objects with an area of 10x10 (100 cm<sup>2</sup>) were contacted at the rate of 20 million microbial bodies for every 1 cm<sup>2</sup>, for this purpose, in 1 ml of 2 billion microorganism suspensions were applied with 10 ml of sterile water and 0.3 g of sterile preparation. After drying for 2 hours, the test

objects were treated with salicylic turpentine-chlorine-lime suspension, diluted on a neutral anolyte in the ratio of 1:10; 1: 100; 1: 500; 1: 1000; 1: 1500; 1: 2000 and so on. respectively, from the calculation of 5 ml of the drug per test object, taking into account the temperature and relative humidity.

### Findings

1. Bactericidal activity of neutral anolyte in combination with 0.1% salicylic-turpentine-chlor-lime suspension when disinfecting the surfaces of the test object (brick, wood, iron, rubber, concrete) that are contaminated with test-cultures (*E. coli*, strain 1257, golden streptococcus, strain 209p) without protein protection, reaches 100% at all exposures, and with protein protection of such an effect can be obtained only by combining a neutral anolyte with 0.2% salicylic-cypidary-chlorine-lime suspension, which must be considered when using the use them in production conditions.

2. 0.1% salicylic turpentine-lime-lime slurry on a neutral anolyte exhibits high insecticidal activity with a contact duration of 24 hours.

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### Information about authors

**Abdulgamid A. Aliev** - Doctor of Biological Sciences, Professor, Head of the Pharmacology Department, Dagestan State Agrarian University named after M.M. Dzhambulatov, Russian Federation;

**Bammatgerey I. Shamiev** - Candidate of Chemical Sciences, Associate Professor of the General and Biological Chemistry Department, Research Fellow of the Research Institute of Ecological Medicine of the Dagestan State Medical University, Russian Federation;

**Magomed M. Magomedov** - Candidate of Physical and Mathematical Sciences, Associate Professor of the Biophysics and Information Department, Dagestan State Medical University, Russian Federation;

**Zumrud S. Kanbulatova** - Biology Teacher of Lyceum No. 9 of the Republican Center for Gifted Children.