

Analyzing the state of natural resistance of broiler chickens by humoral protection factors, we noted a stimulating effect on the indicators of bactericidal and lysozyme activity of blood serum. There was an increase in bactericidal activity of blood serum and lysozyme activity of blood serum by 5-8 % ($P < 0,05$) compared to the control group.

Examining the phagocytic activity of white blood cells we noted a significant increase by 5% ($P < 0,05$). The phagocytic number and phagocytic index were also slightly higher compared to the control group.

Meadowsweet has had a stimulating effect on the factors of natural resistance, which makes possible to recommend it to increase the overall resistance of the body in viral and bacterial infections.

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THE EVALUATION OF ANTIBIOTIC RESISTANCE DEVELOPMENT TO AZITROMYCIN IN SALMONELLA ENTERICA

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Currently, antibiotics – the substances that inhibit the growth and vital activity of animal and human pathogens – have become widespread. Almost a century has passed since the beginning of an era of antibiotics, and over this period, they have saved millions of lives. However, the long-term use of various groups of antibiotics has led to the resistance development in microorganisms [1, 2, 4]. In modern science, the antibiotic resistance is a big topic for discussion as penicillin-resistant strains and, moreover, penicillin-dependent microorganisms were discovered [2, 3]. There is a need to study the rate of formation of microbial resistance to

new antimicrobial agents. In this regard, controlled antibiotic therapy is an urgent issue for the prevention and treatment of infectious diseases in humans and animals [3, 4].

In this study, we assessed the resistance development in the initial cultures of *Salmonella enterica* and determined the minimum inhibitory concentration of azithromycin dihydrate for these microorganisms by using nutrient broth with a sub-inhibiting dose.

The minimum inhibitory concentration was established by the micromethod, producing two-fold dilutions of azithromycin dihydrate in nutrient broth with a ten-fold therapeutic concentration (50 mg/L). The measurement results showed that for *Salmonella enterica*, the minimum inhibitory concentration was 1,95 µg/ml. Subsequent dilution with a concentration of 0,98 µg/ml showed sub-inhibitory properties – microorganisms retained the ability to reproduce (optical density 0,265 o.u.), but much slower compared to the initial culture (optical density 0,725 o.u.). Thus, to study the effect of a sub-inhibitory concentration of azithromycin dihydrate on *Salmonella enterica*, a concentration of 0,98µg/ml was determined.

Nutrient broth with a concentration of azithromycin dihydrate of 0,98µg/ml was prepared and the effect of this concentration on *Salmonella enterica* was studied. At the end of the exposure, the growth inhibition zones in the initial culture and the cultivated with a sub-inhibitory antibiotic dose were determined. The minimum inhibitory concentration of the antibiotic was established.

Table 1 – Diameters of inhibition zones in *Salmonella enterica* cultures

Salmonella enterica culture	Growth inhibition zones, mm
Initial culture	34
Cultivated with a sub-inhibitory dose of azithromycin dihydrate	23

Cultivating the bacteria on nutrient broth with a sub-inhibitory dose of azithromycin dihydrate for 5 days leads to a decrease in sensitivity in *Salmonella enterica*: the growth inhibition zone in the culture is reduced by 11 mm, and the minimum inhibitory concentration increases by 4 times to 7,81 µg/ml.

Thereby, the study has shown that the use of the antibiotic in doses below the minimum inhibitory dose stimulates the increase in Salmonella resistance in a short time. In this regard, it is extremely important to maintain the therapeutic concentration of the antibiotic throughout the treatment period, as its decrease leads to the resistant strains formation, especially when bacteriostatic antibiotics are used.

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EXPERIENCE IN THE TREATMENT OF MASTITIS IN COWS IN THE TYUMEN REGION

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One of the main factors inhibiting the growth of milk productivity and worsening the sanitary quality of milk obtained at farms is pathological processes in the field of the mammary gland.