

## IMPACT OF POLYDISPERSED ELECTROAEROSOL PARTICLES OF DESINFECTIVE SUBSTANCES ON THE VITAL ACTIVITY OF MICROORGANISMS DURING DISINFECTION OF ROOMS WITH ANIMALS

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**Summary.** Modern farming conditions demand that disinfection of rooms with polydispersed electroaerosols of disinfectants was done with animals and poultry inside. The electroaerosol sprayer of new construction UEP-2 (3) differs from the known sprayers by that it has an electrode of changeable diameters and tips-outlets for air and liquids. The air passing the tip is cleaned by an air filter. The sprayer with 23 mm truncate cone-shaped electrode and corresponding tips-outlets for air and liquids sprays 1280-1500 ml of solution per 1 min. 1,5-3 mkm particles make up 14,85-16,76 %. With 6-9 mm truncate cone-shaped electrode the yield is only 400-540 ml/min. When the torch of UEP-3 (4) is furnished with separator with hood the yield is 340-600 ml/min. However 1,5-3 mkm particles make up 33,97 %. It is used for spraying in the rooms of disinfective solutions. We have determined that positively or negatively electrically loaded bacterial particles settle down in rooms at greater rates. The experiment with rabbit immunization using living vaccine of TS-177 Salmonella strain as aerosol (the size of particles – 1-9 mkm) showed that 15 min. after the spraying there remained 32,12 % of living Salmonella in 1 l of the air (if compared with their amount before the spraying). Vaccination of pigs with the same Salmonella vaccine in aerosols and spraying of 1 m<sup>3</sup> of the room with the same 1,2-2,1 subcutaneous dose revealed that 15 min. after the spraying there remained 21,65 % of bacteria in 1 l of the air. 15 min. after spraying rabbit vaccine or aerosols with the negative electric load 1 l of the air contained 28,47 % of bacteria. 15 min. after vaccination of pigs with Salmonella vaccine aerosols with negative electric load 1 l the air contained only 12,53 %. Similar processes take place after spraying the polydispersed (particles – 50-150 mkm) 40 % electroaerosols of lactic acids with rabbits and pigs inside. 15 min. after spraying the disinfective 40 % lactic acid solution in rooms with rabbits, immunized with live TS-177 Salmonella vaccine aerosols, 1 l of the air contains 0,47 % of bacteria. After spraying disinfectants with positive or negative electric loads the rabbit rooms contained no bacteria. In rabbit rooms which were not disinfected the content of Salmonella bacteria was 11,51 % per 1 l. When pigs were vaccinated with TS-177 Salmonella vaccine electroaerosols and kept in rooms disinfected with 40 % lactic acid electroaerosols with + or – electric loads, 15-45 min. after the spraying the air contained no live salmonella. 15 min. after spraying with disinfective aerosols the content of bacteria was 4,46 % and only 45 min. after the spraying there remained no bacteria in the rooms. Clinical trials revealed that polydispersed 40 % lactic acid aerosols were harmless to rabbit and pig organisms, caused no coughing. The animals remained calm. The pig blood contained 11,20-10,62 % of hemoglobin and 4,51-5,52 mln/ml of erythrocytes (the values ranged within the physiological norm).

**Keywords:** sprayers, electroaerosols, live salmonella vaccines, disinfective substances, dispersivity of electroaerosol particles, rabbits, pigs.