

УДК 636.3:619:615.014

LICKING BLOCKS WHICH ENRICHED WITH BIOLOGICALLY ACTIVE SUBSTANCES FOR SHEEP

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The use of biologically active compounds to improve metabolic processes, performance and security of the sheep has a long history. To simplify the technology of their application ruminants quite rational development of recipes licking blocks, which allows for long-term continuous flow of their body substances that affect metabolism or have a therapeutic effect. The most common components such dosage forms are mineral salts, vitamins, carbohydrates and non-protein nitrogen. Accumulated results of studies on the effectiveness of humic substances in sheep in order to enhance anabolic processes, improve the physiological state of the body and the protective properties of small ruminants. The effect on the growth of microorganisms and animal cells consists of humic substances in their properties to reduce fluctuations of certain nutrients in the environment changes and prevent stress damage to cell membranes. This contributes to faster recovery of damages from adverse environmental factors and the preservation of energy substrates for the formation of biological products.

The aim was to study properties of the dosage form licking blocks of humic substances for use ruminant animals.

When creating recipes licking blocks with humic substances used feed supplement «Humilid», as part of which contains 10% humic acids. The feed additive (TU 15.7- 00493675-004:2009) developed in research Laboratory. prof. LA Hrystyeva of peat, used as food grade rock salt production sort 1 «Artyomsol.»

Finished licking blocks studied by methods that are provided in standard documentation on the analysis of pharmaceutical solid dosage forms: color, smell, texture, density, dry matter content. Also measured chromaticity (indication extinction at a wavelength of 465 nm and 650 nm using KPK-3 and cuvettes thick of 1 cm, in a dilution of humic substances 1: 10,000) and conducted bioassay of the culture of ciliates *Paramecium caudatum* (dilutions of 1: 1000, 1: 10,000, 1: 100,000 in 15 min., 3 hr., 24 hr. from the beginning of the experiment). Effects on animals was assessed by clinical examination methods of determining animal body temperature, heart rate, respiratory rate, rumen contractions.

Based on the recommended dose on the application of humic acid in a dose 1–2 mg/kg to achieve the effects on the state of microflora and microfauna in the rumen of ruminants, we determined that it meets 0,01–0,02 ml «Humilid». According to the literature, the volume of rumen in sheep is an average of 10 liters. So to achieve optimal concentration of humic substances in the fluid content of rumen in the optimal composition of licking blocks are 5% of drug «Humilid».

Licking block with feed supplement «Humilid» have a dark brown color, odor, before to dry elastic consistency and tight after. Block was dried from 90% to 95% of dry matter, drying process lasted 2 hours. Chromaticity was determined by the dilution of 1: 100 of licking blocks that contain feed supplement of «Humilid». Extinction at a wavelength of 465 nm in the samples was 0,425–0,435, at a wavelength of 650 nm — 0.06–0.065. Ratio Extinction (E 450 nm/E650 nm) ranged within 7, which should be used as a method of control of different parties licking blocks containing humic substances.

In conducting toxicological studies using ciliates *Paramecium caudatum* culture not noted a decrease in the density of the culture and cell shape change of control during the whole period.

We have made calculations of the cost of production of pellets, enriched by the optimal composition of biologically active substances in two sizes of packaging: 1) licking blocks in the form of «bricks» to 2 kg (estimated consumption of 10 sheep in 20 days), 2) licking blocks packed in plastic containers on 5 liters (estimated consumption of 10 sheep for 50 days).

When tested in animal licking blocks in vivarium of DSAEU average daily consumption licking blocks in an amount of 5–10 g Therefore recipe structure of licking blocks will provide the animals with access ad libitum every day proper amount of biologically active substances.

Designed for composition and compounding estimated optimal biological activity, taking into account physiological features large and small livestock. Installed technological properties of drugs that affect the process and cost of production and evaluation of their quality. Completed elements of pre-clinical testing of feed supplement «Humilid» in a laboratory and vivarium.