

Algae *Eichornia Crassipes* in Goats the Effect on the Amount of Bacteria in the Gastrointestinal System When Feeding With

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ABSTRACT

Eichornia crassipes is high in the article The number of bacterial groups in the gastrointestinal tract of goats fed with a feed ration based on the use of algae in units /ml effect information about.

Actuality theme. Currently, in order to enrich food products with quality, to provide agricultural animals with quality and nutritious food and to increase their productivity, the efficiency of fermentation of feed in the digestive system of animals and the conversion of volatile fatty acids, proteins and vitamins in the ruminant cavity. depends on the living microbial communities (bacteria, archaea, fungi and protozoa). Primary produced substances (acetate, propionate and butyrate) cover about 80% of the body's total energy needs Zeineldin M., Barakat R., Elolimy A., Salem AZM, Elghandour MMY, Monroy JC *Microb. Pathog.* - 2018. 106-115. The main biological mechanisms that regulate the level of fertility depend on a number of intrinsic and extrinsic factors affecting the structure and function of gut microbes, including age, sex, genotype and diet Henderson G., Cox F., Ganesh S., *Scientific Reports.* -2015. The concentration of beneficial microorganisms in the stomach depends significantly on the feeding conditions of the animal. In a number of studies, a correlation was found between the variability of the microflora of the stomach and the efficiency of using nutrients [Shabat SKB, Sasson G., // *ISME J.* – 2016. Stomach microorganisms proteins, plays an important role in the digestion of carbohydrates, starch, sugar and fats, provides the body with energy and protein by producing primary substances and microbial proteins in the process of anaerobic fermentation . Jiang S., Yang Z., *J. Anim. Sci.* – 2015. The mass of bacteria in the stomach of ruminants is about 10% of

the dry matter content of the rumen. Normally, 1 ml of gastric fluid contains about 10^{11} bacteria, 10^3 - 10^7 fungi, 10^9 archaea and 10^6 protozoa. Their interaction and coexistence in this multicomponent system depends on the variety of nutrient sources and the variety of cellulases and other enzymes produced by MO. The intestinal bacterial community is amylolytic (they use starch and maltose, breaking them down into succinic, acetic and formic acids), proteolytic (breaks down proteins into peptides and amino acids), lipolytic (breaks down fats into glycerol and fats), cellulolytic (breaks down complex carbohydrates which breaks down into di- and monosaccharides) and consists of microorganisms such as lactic acid bacteria (which break down starch and sugar into lactic acid). Bacteria include clostridia, bacteroids, ureolytic bacteria. Many bacteria act selectively, that is, different types of bacteria can affect the same substrate at the same time. – 2016. S. 112-114. Yeast, butyric microbes, enterococci, staphylococci, diplococci, pseudomonas, bacteriophages also live in the abdominal cavity. The species composition of microflora changes when the feed ration is changed, this should be taken into account when introducing new food products into the feed ration Grushkin A.G., Shevelev N.S. Selsko khozyaystvennaya biology. – 2008. No. 2. – S. 12-19.

Study method. According to the results of our scientific research, the amount of *bacteria* in the gastrointestinal system of goats is 10^6 units/ml in goats fed with traditional farm ration, 95% traditional farm ration + 5% *E. crassipes* biomass, 90% traditional farm ration + 10^6 units/ml, 10^7 units/ml and 10^6 units/ml in experimental groups fed with feed ration consisting of 10% *E. crassipes* biomass and 85% conventional farm ration + 15% *E. crassipes* biomass was determined to be equal. The amount of fungi was higher in the experimental group fed with 90% conventional farm ration + 10% *E. crassipes* biomass. During our research, the amount of protozoa (infusoria) in the gastrointestinal tract of goats was 10^4 units/ml in goats fed with traditional farm ration, and this indicator in goats fed with feed ration consisting of 95% traditional farm ration + 5% *E. crassipes* biomass. showed that it is equal to 10^5 units/ml. Protozoa (infusoria) in experimental groups fed with feed ration consisting of 90% traditional farm ration + 10% *E. crassipes* biomass and 85% traditional farm ration + 15% *E. crassipes* biomass The amount of *s* was equal to 10^6 units/ml and 10^5 units/ml. The amount of infusoria was higher in the experimental group fed with 90% conventional farm ration + 10% *E. crassipes* biomass.



The results of the experiment, we analyzed the bacteria, which are the main component of the microflora of the gastrointestinal system of goats, in terms of group and quantity. A number of scientists have noted the presence of cellulolytic, amylolytic *Enterobacteriaceae pathogenic bacteria* in the stomach and intestinal microflora of ruminants. Therefore, in our research, we also studied the bacteria in the gastrointestinal tract of goats, conditionally dividing them into the following groups: **1. cellulolytic bacteria; 2. amylolytic bacteria; 3. lipolytic bacteria; 4. pathogenic bacteria; 5. other types of bacteria.**

Bacterial groups in the gastrointestinal tract of goats fed diets based on the use of *Eichornia crassipes algae* in studies it was observed that it does not have a negative effect on its composition and quantity. From the data of M, it can be seen that in the gastrointestinal tract of goats cellulolytic 95% if the bacterial count is $1.3 \cdot 10^8$ units/ml in goats fed a conventional farm diet. In goats fed with a feed ration consisting of traditional farm ration + 5% *E. crassipes* biomass, this indicator was found to be $1.5 \cdot 10^8$ units/ml. 90% traditional farm ration + 10% *E. crassipes* biomass and 85% The number of cellulolytic bacteria in the experimental groups fed with the feed ration consisting of traditional farm ration + 15% *E. crassipes* biomass was at the standard level (respectively, $1.5 \cdot 10^8$ units/ml and $1.4 \cdot 10^8$ units/ml) was observed. The analysis of the results showed that the amount of cellulolytic bacteria in the gastrointestinal system of goats, when fed with a diet based on the use of *Eichornia crassipes algae*, was reduced to the standard amount ($1.4 \cdot 10^8$) recorded for the organism of ruminants. As a result of the experiments, the amount of amylolytic bacteria in the gastrointestinal system of goats was $1.6 \cdot 10^8$ units/ml in goats fed with traditional farm ration, 95% traditional farm ration + 5% *E. crassipes* biomass, 90% traditional farm ration + 10% *E. crassipes* biomass and 85% conventional farm ration + 15% *E. crassipes* biomass in the experimental groups fed with feed ration, correspondingly, $1.5 \cdot 10^8$ units/ml, $1.6 \cdot 10^8$ and $1.5 \cdot 10^8$ units/ml were found to be equal. The amount of amylolytic bacteria was higher in the experimental group fed with 90% conventional farm ration + 10% *E. crassipes* biomass. Also, when fed with a feed ration based on the use of *Eichornia crassipes* algae, the amount of amylolytic bacteria in the gastrointestinal system of goats remains within the limit of the standard amount ($1.6 \cdot 10^8$) noted for the organism of ruminants.

The number of lipolytic bacteria in the gastrointestinal system of goats was $6 \cdot 10^7$ units/ml in goats fed with traditional farm ration, this indicator was $6 \cdot 10^7$ in goats fed with feed ration consisting of 95% traditional farm ration + 5% *E. crassipes* biomass. was found to be equal to 90% traditional farm ration + 10% *E. crassipes* biomass and in experimental groups fed with feed ration consisting of 90% traditional farm ration + 10% *E. crassipes* biomass and 85% traditional farm ration + 15% *E. crassipes* biomass. It was equal to $6 \cdot 10^7$ units/ml and $5 \cdot 10^7$ units/ml. The amount of lipolytic bacteria was higher in the experimental groups fed with 95% conventional farm diet + 5% *E. crassipes* biomass and 90% conventional farm diet + 10% *E. crassipes* biomass. In general, feeding with a diet based on the use of *Eichornia crassipes* algae showed that the amount of politic bacteria in the gastrointestinal tract of goats did not increase or decrease from the normal amount ($5 \cdot 10^7$) noted for the organism of ruminants.

As a result of the experiments, the amount of pathogenic bacteria in the gastrointestinal system of goats was $1.6 \cdot 10^8$ units/ml in goats fed with traditional farm ration, 95% traditional farm ration + 5% *E. crassipes* biomass, 90% traditional farm ration + 10% *E. crassipes* biomass and 85% traditional farm ration + 15% *E. crassipes* biomass in the experimental groups fed with feed ration, correspondingly, $1.5 \cdot 10^8$ units/ml, $1.4 \cdot 10^8$ and it was found to be equal to $1.4 \cdot 10^8$ units/ml. It was observed that the increase in the percentage of biomass of *E. crassipes* in the feed ration leads to a slight decrease in the amount of pathogenic bacteria in the body of goats. The number of other types of bacteria in the gastrointestinal tract of goats was $6 \cdot 10^8$ per ml in goats fed with traditional farm ration, and $5 \cdot 10^8$ in goats fed with 95% traditional farm ration + 5% *E. crassipes* biomass. was found to be equal to units/ml. In the experimental groups fed with feed

ration consisting of 90% traditional farm ration + 10% *E. crassipes* biomass and 85% traditional farm ration + 15% *E. crassipes* biomass, the amount of bacteria was the same, i.e. $5 \cdot 10^8$ was observed to be equal to units/ml. It was noted that the amount of other types of bacteria was higher in the experimental group fed with feed consisting of 95% traditional farm ration + 5% *E. crassipes* biomass.

Summary: As a result of experiments, it can be concluded that It was proved that the amount of cellulolytic, amylolytic, lipolytic and non-pathogenic bacteria in the gastrointestinal tract of goats was maintained at the standard amount ($5 \cdot 10^8$) recorded for the organism of ruminants when feeding goats with a feed ration based on the use of *Eichornia crassipes algae*. Therefore, we consider it appropriate to feed goats with a feed ration consisting of 90% traditional farm ration + 10% *E. crassipes* biomass.

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