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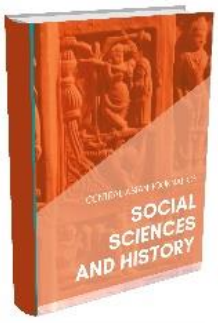

Effects on the Microflora of the Gastrointestinal Tract When Feeding Goats with High Algae

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Abstract:
The article provides information about the tall seaweed Eichornia crassipes and the effect of feeding with a diet based on the use of Eichornia crassipes algae on the amount of groups of microorganisms in the gastrointestinal tract of goats.

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The health and productivity of ruminants directly depends on the condition of ruminants and intestinal digestion. The microflora of the stomach and intestines is an important factor in the formation of non-specific resistance of the body, the strongest influence on which is provided by nutritional conditions.

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Food in the stomach is digested by microorganisms (MO) - bacteria, protozoa and fungi. Under the influence of MO, 95% of sugar and starch, 70% of fiber (30% in the large intestine) and 40-80% of protein are broken down in the proventriculus. MO in ruminant ruminants an almost ideal environment has been created for the reproduction of Constant saliva contains bicarbonates, sodium, potassium, phosphates and urea, which are necessary for their growth and development. A constant temperature of 39-40 ^{o} C and gas composition is maintained. With balanced nutrition, the reaction of the stomach contents of healthy animals is neutral, slightly acidic or slightly alkaline, pH is usually 6.8-7.4. Significant changes in pH lead to serious pathologies of cicatricial digestion up to the complete death of the protozoa.

The study of ruminant gut microbial communities is very relevant due to the possibility of rapid diagnosis and prevention of many pathologies of the digestive system associated with poor nutrition. The gut microbiocenosis is a complex symbiotic ecosystem, its members consist of hundreds of species of bacteria, fungi, and methanogenic archaea, some of which have been studied in detail so far. As an important digestive organ of ruminants, the stomach contains a large number of microorganisms (MO), and the composition of the microbial population in the rumen is mainly influenced by diet. The stomach provides a relatively stable habitat for bacteria, protozoa, and fungi, the dominant MOs. Stomach microbes affect enzymatic processes related to lipid metabolism and nitrogen accumulation, which directly affects a number of production traits such as food digestion and feed efficiency, milk yield and composition. Enzymatic processes in the stomach are affected by the species composition of bacteria. Sudden changes in the gastrointestinal tract during the digestion and absorption of nutrients can have a negative effect on the productivity and performance of animals. Therefore, the normal physiological condition of the intestine is of great importance for the animal organism. The gastrointestinal tract is very sensitive to external stresses such as heat stress, weaning, and changes in feed. Stress can affect the developmental dynamics of the intestinal barrier by increasing the permeability of the intestinal wall. Gastrointestinal microflora may be involved in a variety of stress-related conditions, including depression and irritable bowel syndrome. In the case of rats, it has been proven that animals raised under the influence of unfavorable factors have a less diverse microflora than animals raised without stress. The reduced composition of microflora was associated with increased hypothalamic-pituitary-adrenal system reaction and increased anti-inflammatory cytokines. In another experiment, mice exposed to chronic stress for 5 weeks developed a depressive state, which led to a decrease in the number of lactobacilli Marin IA, Goertz JE, Ren T., Rich. Currently, specialized and functional food products enriched with biologically active substances with adaptogenic properties are being actively created. Most of them are used to increase the resistance of the animal body to environmental factors, as well as to show immunomodulatory and antimicrobial activity. However, the effect of most of these compounds on the intestinal microflora is unknown.

Gastrointestinal microflora diversity is associated with increased hypothalamic-pituitary-adrenal system response, increased pro-inflammatory cytokines, decreased stress tolerance, and depression. Enriching the diet with various components increases the diversity of intestinal microflora. Development and use of feed rations aimed at improving intestinal microflora is an important factor Komarova ON Young, breeding and high-yielding animals are most prone to stress. Sensitivity to stress increases with care and feeding disorders, long-term negative effects of natural climatic factors, as well as simultaneous effects of two or more stress factors. Stress causes loss of live weight and meat production, changes in intestinal bacterial balance, which in turn affects the immune system. One of

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the effects of stress is a change in the composition, diversity and number of bacteria in the gut, including an increase in the number of potentially dangerous bacteria in the gut, such as *clostridium* . Reduction in the number of contractions and complete cessation of motor function due to abdominal hypotension and nutritional disorders: a sharp transition from watery food to roughage and vice versa, as a result of a decrease in the number and amount of species due to a general decrease in the functional activity of microflora in ruminants significant digestive disorders are noted. Predominance of green fodder in the diet had a positive effect on the activity of microflora .

As can be seen from the above information, studies on evaluating the effect of feeding non-traditional feed rations on their stomach and intestinal microflora are important. A number of local and foreign in the works of scientists, information on the effect of the use of chemical compounds and probiotics on the physiological parameters of goats and on the microflora of their digestive system was recorded in the works of scientists. However, in scientific sources, information on the effect of the enrichment of the feed ration with algae biomass on the physiological parameters and microflora of goats, based on biotechnological approaches, is practically not found, which indicates that no in-depth research has been conducted in this regard. Therefore, in our research, we aimed to evaluate the effect of feeding a feed ration based on the use of *Eichornia crassipes* algae on the composition and quantity of groups of microorganisms in the gastrointestinal tract of goats.

Hearth ration (AXR) as a control option ; 95%AXR + 5% *E. crassipes* biomass as experimental variants; 90% AXR + 10% *E. crassipes* biomass; was conducted in goats fed a diet consisting of 85% AXR + 15% *E. crassipes biomass for six months.* Studies have shown that feeding diets based on the algae *Eichornia crassipes does not have a negative effect on the number of groups of microorganisms in the gastrointestinal tract of goats.* data show that the number of bacteria in the gastrointestinal tract of goats fed a conventional farm ration was 10 10 units/ml, while 95% conventional farm ration + 5% *E. crassipes* in goats fed with feed ration consisting of biomass, this indicator was found to be 10 11 units/ml.

Of 90% traditional farm ration + 10% *E. crassipes* biomass and 85% traditional farm ration + 15% *E. crassipes* biomass, the amount of bacteria was mutually consistent, 10 11 units/ml and 10 equaled 11 units/ml. Bacterial counts were noted to be higher in the experimental group fed a diet consisting of 90% conventional farm ration + 10% *E. crassipes biomass.* The analysis of the results showed that feeding a feed ration based on the use of *Eichornia crassipes algae* did not cause the amount of bacteria in the gastrointestinal tract of goats to exceed or decrease the normal amount (10^9 -10^{11}) recorded for ruminant organisms.

As a result of the experiments, the amount of fungi in the gastrointestinal system of goats was 106 units/ml in goats fed with conventional farm ration, 95% conventional farm ration +5% *E. crassipes* biomass, 90% conventional 10^6 units/ml, 10^7 units/ml and 10^6 units/ml were found to be equal. The amount of fungi was noted to be 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 fungi in the gastrointestinal system of goats is maintained within the limit of the normal amount (10^3-10^7) recorded for the organism of ruminants.

The results of the experiment showed that the amount of protozoa (infusoria) in the gastrointestinal system of goats was 10 4 units/ml in goats fed with traditional farm ration, fed with feed ration consisting of 95% traditional farm ration +5% *E. crassipes biomass* showed that in goats this indicator is equal to 10 5 units/ml. 90% conventional farm ration +10% *E. crassipes* biomass and 85%

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conventional farm ration +15% *E. crassipes* and in the experimental groups fed with the feed ration consisting of biomass, the amount of protozoa (infusoria) was equal to 10^6 units/ml and 10^5 units/ml. The number of infusoria was higher in the experimental group fed with 90% conventional farm ration + 10% *E. crassipes biomass.* The analysis of the results showed that feeding a feed ration based on the use of *Eichornia crassipes* algae did not cause the amount of protozoa in the gastrointestinal tract of goats to exceed or decrease the normal amount (10^4-10^6) recorded for the organism of ruminants.

Summary: As a result of the experiments, it can be concluded that feeding with a feed ration based on the use of *Eichornia crassipes algae does not have a negative effect on the amount of cellulolytic, amylolytic, lipolytic, pathogenic,* etc. bacteria, fungi and protozoa in the intestinal system of goats. As a result of the study, the amount *of cellulolytic, amylolytic and lipolytic bacteria, fungi and infusoria* in the body of goats fed with a feed ration consisting of 90% traditional farm ration + 10% *E. crassipes biomass* was slightly higher than in other experimental groups. and a slight decrease in the amount of pathogenic bacteria was observed. Therefore, as a result of the experiments to evaluate the effect of feeding with a feed ration based on the use of *Eichornia crassipes* algae on the composition and quantity of groups of microorganisms in the gastrointestinal tract of goats, goats were fed 90% traditional farm ration + 10% E. *crassipes* We believe that it is appropriate to feed with feed ration consisting of biomass.

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