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THE STUDY OF THE CHEMICAL COMPOSITION AND PROPERTIES OF BIOLOGICALLY ACTIVE SUBSTANCES OF MEADOW CLOVER AS A COMPONENT OF NUTRITION OF FARM ANIMALS

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The purpose of work: the study of the chemical properties and applications of meadow clover in the nutrition of farm animals

Research objectives:

- 1) To investigate the chemical composition of meadow clover, including the content of biologically active substances;
- 2) To identify the effectiveness of the use of clover in the diet of farm animals

Materials and methods of research:

- Meadow clover (*Trifolium pratense*) was selected for experiments in October 2023
- One part of the collected raw materials was dried at room temperature without access to sunlight, the second part remained unchanged
- Before the experiment, the aboveground part of the plant material was crushed to a particle size of 1-2 mm
- An organic solvent such as 40% ethyl alcohol was used to obtain the extracts.
- Dry and fresh raw materials were treated with ethanol in a ratio of 1:5 by sequential triple maceration for 5 days at room temperature in the dark.

Materials and methods of research:

- A qualitative analysis was performed for the content of biologically active substances in the obtained extracts
- To detect flavonoids in the obtained extracts, a reaction with an ammonia solution was carried out
- Coumarins – a reaction with the addition of sodium hydroxide
- Tannins – a reaction with a dilute sulfuric acid solution
- Glycosides – a reaction with a concentrated sulfuric acid solution

Results:

Based on the results of a comprehensive analysis of the extracts obtained, it can be concluded that they contain biologically active substances such as glycosides, coumarins and flavonoids. Tannins were not detected either in extracts from fresh raw materials or in extracts from dried raw materials by qualitative analysis

Results:

It has been studied that glycosides can have several effects in the diet of farm animals: 1) Antioxidant activity; 2) Anti-inflammatory properties; 3) Improved digestion. Coumarins can also have a positive effect on animal health due to their antibacterial activity, improved metabolism and reduced stress. Flavonoids play an important role in the diet of farm animals, providing antioxidant protection and support for the immune system

Conclusions:

- 1) The aboveground parts of meadow clover can be considered as a potential source of flavonoids, coumarins and glycosides.
- 2) The use of *Trifolium pratense* in the diet of animals is a valuable resource for agriculture due to the presence of biologically active substances in it