ЛЕСОТЕХНИЧЕСКИ УНИВЕРСИТЕТ
ФАКУЛТЕТ „ВЕТЕРИНАРНА МЕДИЦИНА"
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ACADEMIC STATEMENT

Assoc. Prof. PhD. Kalin Yordanov Hristov

Department „Surgery, Radiology, Obstetrics and Gynecology"

Faculty of Veterinary Medicine, University of Forestry

Scientific specialty: "Obstetrics and gynecology of animals and diseases of newborn animals", professional field: 6.4. Veterinary Medicine

Regarding: PhD thesis for obtaining of PhD degree in scientific specialty „Breeding of farm animals, biology and biotechnology of reproduction", professional field: 6.3. Animal husbandry

Author of the PhD thesis: Georges Hanna Al Hanna

Title of the PhD thesis: „Impact of different herbs on body performance and meat quality in awassi male lambs"

Scientific consultant: Prof. Zapryanka Nikolaeva Shindarska, PhD

Prof. Boulos Al Jamal, PhD – Lebanese University

Grounds for presenting the academic statement: member of the scientific jury for the defense of the PhD thesis according to Order № 170/1.04.2024 of the Rector of University of Forestry

1. Information about the PhD student

The PhD student Georges Hanna Al-Hanna is a citizen of Lebanon, enrolled in the doctoral program "Farm Animal Breeding, Biology and Biotechnology of Reproduction" at the Department of "Anatomy, Physiology and Animal Husbandry Sciences" of the Faculty of Veterinary Medicine, University of Forestry, with order No. ZPS- 572/9.10.2018 in part-time doctoral studies. After completing the tasks laid down in the individual study plan and all statutory requirements, he has acquired with the right of defense by order ZSD-479/24.10.2022 of the Rector of UofF. At a meeting of the Extended Department Council (Protocol 30/19.04.2023) the defense procedure before a scientific jury was initiated

2. General characteristics of the presented dissertation (PhD thesis)

Relevance of the topic: The most popular and widespread breed of sheep in southwest Asia is the Awassi, which is the dominant breed in Iraq and Syria as well. It is also the only indigenous sheep breed identified in Lebanon. The rearing of small ruminants is a traditional and vital agricultural activity and is spread mainly in the villages and mountainous regions of the country.

A major problem in raising these animals is the loss of production, one of the main causes of which is food poisoning, mainly caused by fungi. Fungi are known to produce mycotoxins, thereby affecting the nutritional content of forages. This leads to changes in the proportions of protein, amino acids, fiber and/or energy, which in turn leads to a decline in production.

In order to overcome this problem, various additives are often added to feed. An additive that has received serious criticism is antibiotics. In this regard, there are important reasons for limiting the use of antibiotics, mainly due to the development of antibiotic resistance of microorganisms, as well as their residues found in meat. Removing antibiotics from the diet, however, often leads to increased susceptibility to disease.

In relation to limiting the use of antibiotics however, attempts have been made to find other alternatives to overcome such challenges. One of them showing great interest in recent years is the use of growth stimulants of natural origin.

Therefore, the topic of the dissertation is relevant and a more detailed study of plant extracts and their effect as a supplement in sheep will be of benefit to both veterinary science and practice.

Structure and volume: The PhD thesis is written on 123 pages and is balanced in terms of volume of individual parts: Introduction - 3 pages, Literature review - 37 pages; Purpose and tasks - 1 page; Materials and methods – 9 pages; Results and discussion - 40 pages.; Recommendations - 2 and Conclusions - 1 page. To visualize the methods used and the results obtained in the dissertation 12 tables and 35 figures have been prepared.

The dissertation uses literature from 252 sources, all in Latin, about 8% (20/252) of the literary sources are from the last 10 years.

Review of the literature: The literature review includes information on the use of different antibiotics as feed additive in ruminants to improve daily gain and feed conversion ratio.

Possible alternatives to antibiotics, such as phytogens or other natural growth stimulants, prebiotics, various herbs with their constituents, essential oils and organic acids, are discussed in detail. All mechanisms of action of possible antibiotic substitutes, including their antibacterial and antioxidant activity, are reviewed. Attention is paid to the use and application of different plants in ruminants. An analysis of literature data on the effect on nutrients of plant supplements, the effect on fermentation processes and methane production, volatile fatty acid production, body condition and meat quality was carried out. I think that the aim well and completely defines the essence of the developed work, and the tasks are set in a logical sequence and are specifically formulated and are adequate to achieve the set goal.

***Materials and methods*:** A total of 47 lambs from the Avasi breed, divided into 3 experimental groups, were included in the studies. In all experimental groups, the rations were free of antibiotics and antioxidants and with the addition of chamomile in experimental group A, sage (Salvia Officinalis) in experimental group B and thyme in group C. Each of the groups was divided into subgroups for conducting the various studies. The experimental design and experimental setups are properly selected. Traditional methods are used to achieve the set goal.

3. Evaluation of the obtained results

The results of the research conducted by the PhD student, together with the discussion, are presented on 40 pages, including 30 figures and 8 tables.All of them provide comprehensive information about the results obtained in tracking the individual indicators studied in the study, in order to fulfill the set goal. Appropriate visualization methods are used, which allows accurate tracking of changes and features. The used statistical methods and analysis allow a full statistical processing of the results.

4. Evaluation of the discussion, scientific and scientific-applied contributions

The dissertation submitted for my opinion lacks the typical discussion of the obtained results with those of other authors up to now. An attempt at discussion is made in the conclusion and recommendations section, which to some extent gives the necessary information. However, I believe that given the extensive literature analysis, a proper discussion of the results could be done, which will contribute to increasing the quality of the present dissertation.

Despite the lack of a separate structured discussion of the results and comparison with similar ones, several recommendations and conclusions are formulated based on the results. I believe that the conclusions based on the obtained results could be formulated much more clearly and concretely, which will help their understanding and analysis. Nevertheless, I positively appreciate the recommendations made.

5. Evaluation of the publications associated with the dissertation

The results of the dissertation have been presented at international scientific forums, which confirms the quality of the research done. In connection with the dissertation, 3 articles in English have been prepared and published. Two of the publications are in proceedings of an international conference and one in a journal referenced in world-renowned databases of scientific information (SCOPUS). The doctoral student has provided an opinion on the fulfillment of the minimum national requirements, issued by the University of Forestry.

6. Evaluation of the abstract of the PhD thesis

I am familiar with the abstract and find it fully reflects the content and achievements of the dissertation

7. Critical remarks, recommendations and questions

I have no substantive critical remarks about the subject, methods, and results. My comments relate to the following:

There is a discrepancy between the pages indicated in the table of contents and the actual pages of the individual parts of the dissertation, which makes it difficult to use the indicated table of contents.

The literature review includes unnecessary information unrelated to the objectives, tasks and research in the dissertation. Information is given on the application of plant extracts in the treatment of mastitis and their effectiveness, but this is not relevant to the present research, not least because the method of administration of the extracts in the case of inflammation of the mammary gland is local.

As stated above in the opinion, there is a lack of structured and in-depth discussion of the results obtained, which makes it difficult to fully analyze the otherwise qualitative results.

The same applies to the formulation of contributions and recommendations based on the studies conducted and the results obtained.

It would be good if the figures were of the same size, and the tables should not be divided into different pages. I also recommend that all cited articles in the literature be formatted according to a single established standard.

8. Conclusion

Georges Hanna Al Hanna's dissertation portrays him as a young researcher with independent thinking and solid knowledge.

Despite remarks and the recommendations to the PhD student, regarding some omissions, mainly in the shaping of the dissertation, the merits of the dissertation work, the publication activity, the personal contribution of the doctoral student and the fulfilled requirements for the necessary quantitative and qualitative criteria, give me the reason to give my positive assessment of the presented dissertation work . I propose to the respected scientific jury to award Georges Hanna Al Hanna the educational and scientific degree "PhD" in the field of your education 6. Agricultural Sciences and Veterinary Medicine, professional direction: 6.3. Animal husbandry, scientific specialty "Breeding of farm animals, biology and biotechnology of reproduction"

2.05.2024 г. Signature:

Sofia /Assoc Prof. PhD. Kalin Hristov /