



## OPINION

**on a dissertation for awarding an educational and scientific degree "doctor",  
Higher education area 6. Agricultural sciences and veterinary medicine,  
Professional field 6.3. "Animal husbandry" Scientific major "Breeding of farm  
animals, biology and biotechnology of reproduction"**

**Author of the dissertation:** Georges Hanna Al-Hanna, doctoral student in part-time study at the Department of "Anatomy, Physiology and Animal Breeding Sciences", Faculty of Veterinary Medicine at the University of Forestry, Sofia.

**Title of dissertation:** "IMPACT OF DIFFERENT HERBS ON BODY PERFORMANCE AND MEAT QUALITY IN MALE LAMBS OF THE AWASSI BREED".

**Member of the scientific jury:** Prof. Dr. Maya Mitkova Ignatova, Agricultural Academy, Higher education area 6. Agricultural Sciences and Veterinary Medicine, Professional field 6.3. "Animal husbandry", Scientific major "Animal nutrition and feed technology", appointed as a member of the scientific jury by order No. ZPS-169/01.04.2024 by the Rector of LTU.

The presented dissertation is written on 124 pages and includes 12 tables, 35 figures, one appendix. The list of references covers 252 sources. The scientific work is properly structured in terms of the individual sections and meets the requirements of the LDASRB for a doctoral dissertation. Three papers related to the dissertation and published in scientific journals are presented.

### **1. State of the art of the problem**

The problem is current, and the subject of the research work – successfully chosen. This comes from the fact that in recent years there has been an increased interest in the use of a number of natural additives (plant extracts, essential oils, herbs, etc.) in the feeding of farm animals as growth promoters due to banning the use of antibiotics as such. In this case, the effect of the inclusion of different herbs (chamomile, sage, thyme) in lamb rations on the growth, feed intake and utilization, and meat quality was studied.

### **2. Status of the problem and evaluation of the literature review.**

The literature review includes 252 sources in the field of the research conducted by the doctoral student. The issues discussed are presented in a comprehensive

manner. In general, the literature review reveals of the doctoral student's good awareness and skills in working with scientific literature.

### **3. Aim and tasks of research.**

The aim of the research is correctly defined, and the tasks set guarantee its accomplishment.

### **4. Material and research methods.**

The studies are methodically correct. Appropriate methods are applied. Statistical evaluation of the experimental data was performed, allowing convincing comments of the obtained results.

Here I will make the following remarks: In my opinion, the number of animals per group is small, especially when reared in a group, although this number allows some statistical processing of the results. It would be correct to account for both quality and intake of roughage, especially when the forage consumption/utilization is calculated, and some economic evaluation is made.

**5. Illustration and presentation of the results obtained.** The experimental data are presented at a very good scientific level, illustrated with a sufficient number well-made tables (12) and figures (35), plus an appendix.

### **6. Discussion of results and references .**

The discussion and comments of the results are correct. Comparisons are made with similar studies by other authors. Another important point that contributes to the more complete study of the problem and the overall shaping of the dissertation is the analysis and evaluation of the obtained results.

As a result of the research, information on the effect of various herbs, included in the ration of Awassi finishing lambs on their performance indicators was obtained and its assessment was done.

### **7. Conclusions**

The conclusions drawn reflect the main results obtained in the study. They are formulated clearly and precisely.

Recommendations for the practice are made on the basis of the scientific research and the obtained results.

In my opinion, it would be more clear if the conclusions and recommendations were given separately.

I accept the scientific and scientific-applied contributions as presented by the doctoral student. A study was carried out on the possibility of improving the performance of Awassi lambs by using different herbs instead of antibiotics and antioxidants in the feed.

**8. Critical remarks and questions.**

I have no additional critical remarks and questions for the doctoral student, other than those I have already made in the respective sections.

**CONCLUSION**

The presented dissertation meets the requirements for a dissertation in terms of relevance, volume, methodological approaches, level of research work.

A good impression is made by the writing style, the presentation of the material and the technical layout of the work, all of which reveal a very well prepared, intelligent young scientist.

All this gives me the reason to provide my **positive** opinion on the presented dissertation. I recommend to the esteemed Scientific Jury to award **Georges Hanna Al-Hanna** the educational and scientific degree "doctor" in the scientific major "Breeding of farm animals, biology and biotechnology of reproduction", Professional field 6.3. "Animal husbandry", Higher education area 6. Agricultural sciences and veterinary medicine.

10.05.2024

Member of the Scientific Jury:

/prof. Dr. M. Ignatova/