



OPINION

on a thesis for awarding of the educational and scientific degree "doctor" in the 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: Rami Abdallah Yaacoub, MSc

Topic of the thesis: The effect of feeding weaned local male goats "Baladi" breed and Awassi male lambs fava beans as compared to soybean meal on body performance and carcass quality

Member of the scientific jury: Prof. Teodora Lyudmilova Popova, PhD, Engr., Institute of Animal Science-Kostinbrod, Agricultural Academy, appointed by order No. ZPS-168/01.04.2024 of the Rector of University of Forestry, Sofia

I. State of the art of the problem

The PhD thesis of Rami Abdallah Yaacoub deals with an important issue related to the application of an alternative source of protein in the feeding of small ruminants. The requirements for this kind of research is dictated by the need to replace the soy component in the ration, in relation to the limiting of the import of soybean, the reduction of the cost of animal production, the decrease of the loss of nitrogenous compounds in the environment and prevention of the entry of genetically modified organisms into the food supply chain. In this regard, they are very up-to-date and are fully in the context of the modern research trends aimed at the production of high quality and safe foods, with a positive economic effect. A number of studies have shown the advantages of various legumes, including faba bean (*Vicia faba* L) in feeding the farm animals. The focus of the PhD thises is the effect of partial and complete replacement of soybean with faba beans in the ration of local Baladi kids and Awassi lambs on performance and meat quality. Such data are still very scarce in the available literature, which determines the originality of the topic and makes it very suitable for a PhD work.

II. Aim, tasks and research methods

The main aim of the thesis is to assess of the effect of excluding soybean meal or replacing it with faba bean in different percentages on growth performance and some meat quality

characteristics in Baladi kids and Awassi lambs. The experimental design was organized in two trials, with male kids and male lambs, respectively, divided into 5 groups with replacement of soybean meal in amounts of 25%, 50%, 75% and 100%. Live weight and feed intake were measured, and further these traits were used to calculate the weight gain and feed conversion ratio. In order to assess the impact of replacing soybean meal with faba beans on meat quality, the physical and technological parameters of loin from both species of animals were analysed. A wide range of analytical methods were applied to carry out the experimental activity, modern equipment was used.

III. Presentation and interpretation of the obtained results. References

The obtained results are presented in 10 tables and 23 figures. Their interpretation is done professionally, according to the aim and tasks of the research. The PhD student Rami Yaacoub refers to 394 literary sources that prove his excellent awareness on the topic of the thesis. The aim of the dissertation has been accomplished, which is evident from the 11 conclusions derived and 2 recommendations for the practice.

IV. Contributions

In order to achieve the aim of the dissertation work, a considerable amount of experimental activity was carried out. Six contributions have been formulated, which I define as scientifically applied. I accept the contribution reference submitted by the applicant.

V. Publication activity and evaluation of the quality of the scientific publications

Four publications related to the thesis are presented. They reflect a part of the obtained results and are included in a prestigious peer reviewed journal (International Journal of Environment, Agriculture and Biotechnology) and Proceedings of the AGROSYM International Forum. The doctoral student is a single author of two of the publications, and the first author of the others.

VI. Critical notes, questions and recommendations to the candidate

1. I recommend that in future research, the experiments be organized with a larger number of animals;
2. When analyzing the quality of the meat, attention should also be paid to the chemical composition, fatty acid and amino acid profile, to obtain more complete picture of

the changes in the nutritional value of the meat, not only its physical and technological characteristics.

3. It would be good if the contributions were included in the thesis.

These remarks are not intended to underestimate from the merits of the thesis.

CONCLUSION:

I believe that the presented PhD thesis meets the requirements of the Law for the Development of the Academic Staff of the Republic of Bulgaria, the Regulations for its implementation and the Regulations of the University of Forestry for the application of the Law. It contains important scientific and scientific-applied results that represent a valuable contribution to the field of ruminant nutrition. I highly appreciate the work done by the PhD student. He demonstrates excellent knowledge in the specific field and high scientific potential for the realization of original ideas.

Based on the analysis, I give a positive assessment of the PhD thesis and with conviction I recommend Rami Abdallah Yaacoub, MSc to acquire the educational and scientific degree "doctor" in the 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".

Date: 23.04.2024

OPINION SUBMITTED BY: 