UNIVERSITY OF FORESTRY - SOFIA
FACULTY OF VETERINARY MEDICINE

REVIEW

By Professor Dimo Stefanov Penkov – Dep. of Animal Science, Agricultural University - Plovdiv, scientific specialty Animal nutrition and feed technology

Regarding the dissertation for obtaining the educational and scientific degree "Doctor", field of higher education 6. Agricultural sciences and veterinary medicine, professional direction 6.3 Animal husbandry

Presented by Rami Yaccoub

Subject: THE EFFECT OF FEEDING WEANED LOCAL MALE GOATS BALADI BREAD AND AWASSI MEAL LAMBS FAVA BEANS AS COMPARED TO SOYBEAN MEAL ON BODY PERFORMANCE AND CARCASS QUALITY

Scientific supervisors - Associate Professor Andrey Kurtenkov - LTU, Sofia and Prof. Boulos Al Jamal - Lebanese University

I participate in the scientific jury according to the Order of the Rector of Forestry University - Sofia No. ZPS-168/01.04.2024.

Brief information about the PhD student: Rami Yaccoub: He was born on 11.12.1989 in Lebanon. Completed various degrees of university education in MATRICULATION EXPERIMENTAL SCIENCES SERIES CSC- Gemayze, MASTER IN AGRICULTURAL ENGINEERING BIOTECHNOLOGY IN ANIMAL RODUCTION AND REPRODUCTION - Lebanese University, Faculty of Agricultural Engineering and Veterinary Medicine and VETERINARY MEDICINE, SCIENTIFIC SPECIALTY: SELECTION OF FARM ANIMALS BIOLOGY AND BIOTECHNOLOGY OF REPRODUCTION University of Forestry - Bulgaria. He holds managerial and leadership positions in various companies and governing bodies not only in Lebanon but also in other countries. He has experience as a manager in a vaccination and equipment service in poultry farming. Skilled in poultry hatching and vaccination, automation/equipment, hatchery management and poultry production. Technical professional with many years of experience in the hatchery sector. He is currently working as Chief Technical and After Sales Manager at CEVA DESVAC CAMPUS- CEVA ANIMAL HEALTH.

General information on the dissertation: The scientific work is printed on 144 pages and includes an abstract (1 page), list of abbreviations - 2 pages, table of contents - 5 pages, introduction - 3 pages, literature reference - 28 pages, aim and objectives 1 page, material and methods - 8 pages, results - 33 pages, discussion - 14 pages, conclusions and recommendations - 4 pages in total, cited literature - 27 pages, appendices - 10 pages and several technical pages.

The bibliography consists of 394 publications (all in Latin) and corresponds to the citations in the other sections. The dissertation is written in correct and scientifically based English, for which I congratulate the author. The only remark that has nothing to do with the requirements of education and scholarship is that the chosen font does not meet the desire for a "standard typewritten page" - 1800 characters.

Relevance of the topic: Currently, models for the conversion of nutrients from food into animal products are used, which are made using information from experiments with the most common breeds of farm animals. The models for reporting the real energy and protein nutrition are also based on this. In relation to the conservation of local genetic

resources, the tracking of possible differences in nutrient utilization compared to generally accepted patterns is a particularly topical issue that deserves global attention. In this regard, the relevance of the topic is beyond doubt.

Introduction: The introduction is extensive, but through it the PhD student was able to synthesize the issues and direct the readers' attention to the relevance of the problem. I have a suggestion for the introduction to avoid citing authors in the future – the place is in the literature review.

Review: In 28 pages, the author has given enough information about the world scientific research in all the areas covered in the dissertation, which gives me reason to conclude that his awareness of the issues covered is at a high scientific level. This is a theoretical premise that correct results, treatments and interpretations at a high scientific level should also be expected from the developments of the following sections. I am particularly impressed by the fact that the comments made by colleagues that we participated in the preliminary discussion have been taken into account almost 100%, although the author has the opportunity to consider them selectively. I believe these adjustments are made out of conviction, not courtesy (the same goes for the other sections). Personally, I was most impressed by the additional information he gave regarding the modern requirements for the energy distribution along the "feed-digestible-metabolizable-productive energy" chain. Less attention has been paid to the principles of protein transformation. My remark here is that in many places, trying to supplement the information with modern literary sources, the author has made gaps in the consistency and clarity of the information.

Purpose and tasks: They are clearly described, they correspond to modern scientific research, which is additional evidence that the doctoral student wishes to obtain an up-to-date scientific development, which is the basis for future research. Note – in my opinion, the first two paragraphs should be the end of the front section.

Material and methods: Although, compared to the previous promotion of the project of the dissertation, a serious work is noticeable (which I count among the main positives of the development and I am sure that it is the personal work of the doctoral student, or he consulted with competent specialists, which is also positive). I have the most comments and questions for this section. Regarding "material":

1. The experiments included 3 animals in each subgroup. In principle, I recognize the number of animals, because for biometric processing, the minimum number is 3. Moreover, despite the minimum number of animals, statistically significant trends were observed, which are basis for correct scientific interpretation. Despite everything, if the animals in the groups were more, based on modern statistical methods, additional serious trends and conclusions could be drawn, mainly in the field of predicting some current biological and economic processes in the eco-technical chain "forage - animal production" ", which I will mention below.

2. Why the experiment was started after the animals' sucking period. There are sufficiently accurate and uncomplicated methods to differentiate the influence of milk on the growth indexes? Because of this, the dissertation loses part of its scientific value, and Rami Yaccoub - the opportunity to learn these methods of differentiation.

3. Why the measurement of the absolute amounts of straw and hay consumed (as was done with the concentrated fodder) is not described (and perhaps unfulfilled), at least by groups and by sub-periods (most often done weekly). This does not require individual feeders or any additional equipment, just predicting and weighing the total amount of

grass forage for the week and dividing it into 7 equal parts. I do not take scientifically seriously the claim that grass forages are fed ad libitum.

4. There is no scientific basis for the claim on page 48 that "at the end of the experimental period, the lambs and kids consumed identical amounts of grass feed".

5. A serious omission is that, apart from net energy, concentrated feeds are not equaled in terms of net protein (the so-called protein digestible in the intestine). However, I consider as positive the fact that the graduate student gave, albeit minimal, information about this indicator in the previous section, which increases the educational positives of the development.

Methods: Regarding the methods and formulas for measurement and calculations: I have no objections to the adopted ones. In my opinion, they are up-to-date, providing a basis for both the correct processing of the primary data and the correct interpretation of the processed data, for which I congratulate the author.

I must mention that my competences in the field of meat quality are not high, that because I have allowed myself a consultation with a specialist, based on which I have written the previous sentences.

Main note: All the mentioned weaknesses in this section are the result not of the frivolous attitude of the dissertation student, but significant gaps in the preliminary selection and development of the methodology of the experiments. Given the difference in information between the previous and the current version of the dissertation, I make a reasonable assumption that the experiments were conducted before the detailed specification of the methodology and there is currently no way to correct all the data in the following sections. I highly appreciate the fact that engineer Rami Yaccoub has processed the primary information according to the requirements of all indicators on which the obtained primary data can be processed. The main criticisms here are to the scientific supervisors. Since after a successful promotion, the dissertation student will already be in the role of scientific supervisor/consultant, I strongly ask him not to repeat these mistakes (in this case he is not to blame).

Results: All results have been statistically correctly processed and are presented comprehensively in 7 tables and 23 figures (I exclude those reflected in other sections). The interpretation of the data is objective, having been done professionally. All objectively achieved data are commented very carefully. I particularly appreciate the fact that, where the set-up of the experiments does not imply a scientific commentary, the graduate student has complied and, in practice, has avoided "creative" interpretations through skillful scientifically based phrasing. I highly value the scientific and scientific-managerial potential of Rami Yaccoub, as here, as well as in the next section, I find a basis for a definite opinion that the educational and scientific activities he has acquired give me grounds for a positive vote.

Key notes and suggestions:

1. It is fortunate that during the entire experimental period no animal showed any pathology, otherwise the whole experiment would have failed. This is answer, why it is desirable to have at least 4-5 animals in the group (no matter how expensive is the experiment).

2. It would be better if in this section, it was emphasized more that the investigated indicators differ in their dynamics for the two genetic resources, which is a prerequisite for an additional conclusion: Because the concentrated feeds are equalized in terms of crude protein and provided that it was assumed that by giving grass fodder ad libitum and

the animals (due to their relative equalization in the dynamics of the change of growth indicators within the subgroups) took identical doses, then the different amounts of protein digestible in the small intestine obtained from them (between groups) and its further conversion at its intermediary metabolism inside the body of these two breeds/species differ (difference in the influence of genetic variance on nutrient uptake). Discussion: This section is a natural continuation of the comments below the tables and figures in the previous section. I would say that a small part of the discussion is presented in the "results" section, and the majority in the "discussion" section (and vice versa). I have no significant objections to the discussed factors of growth and feed utilization - they have been discussed at a sufficiently high scientific and professional level. My general opinion is that these two sections confirm to the maximum extent my opinion that the PhD student has acquired the maximum amount of knowledge and skills (educational activity) for research and interpretation of scientific results (scientific activity).

Here I also find an additional scientific activity:

In general, I highly appreciate publications that are based not only on a review and confirmation of already known scientific data, but (even if within the framework of hypotheses), provide foundations for the development and verification of new scientific ideas, assumptions and excitement of scientific interest.

In this regard, as a non-specialist (although I have participated in joint publications on similar matters with birds), I became interested in filling in more detail my knowledge regarding the characteristics of the "meat quality" group, after which I hope , for new ideas to arise in me for work in this direction.

I am sure that colleagues in this field will find the same merits in terms of growth indicators (at least because these two genetic resources are little studied in relation to them).

These activities give me reason to find another asset at work:

I highly appreciate the economic analysis, which increases not only the scientific, but also the scientific-applied value of the dissertation as a whole.

The conclusions derive from the results and the discussion, and I also appreciate the fact that they are described only on the basis of the objectively obtained results and the discussions fully confirmed by them. I will not divide the conclusions into scientific and scientific - applied, for me both types are related and have equal weight (especially if they are original).

Recommendations derive from the conclusions and are based on the objective results in the dissertation.

In general, the question of whether to have applications of this type in a dissertation is debatable. In this case, I evaluate them as positive, due to the fact that they give me additional information that the mathematical treatment is correct and the author can use the capabilities of the statistical package SPSS (SAS).

Contributions:

Main scientific contributions:

1.Although I consider the contributions mainly as important for Lebanon (regional importance), the fact that numerical values of biological and economic indicators of genetic resources, for which information in the world database is scarce, are investigated, makes the contributions original and significant. I acknowledge contributions in the following areas:

The effect of full or partial replacement of soybean meal with faba beans in rations fed to weanling lambs and kids of the local Awassi sheep and local goat (Baladi) breeds was evaluated on:*

-main growth indices

- feed utilization

-some basic indicators of meat quality

-economic comparison of the different mixes of the main protein components in the concentrate combinations

*Note: Similar studies specifically with the Awassi breed have been done, but in other areas of the world and in other populations. However, I believe that data on the local population in the study area is almost non-existent.

Evaluation of publications related to the dissertation:

Four publications are presented, two of which are in the proceedings of a scientific conference and two in a journal that is referenced in some global databases, but without SJR/IF indexing. Publications and used material are compatible with the information contained in the dissertation. Due to the fact that, as the sole author, according to this indicator, the graduate student meets the minimum requirements for the ONS "Doctor" - I recognize 40 points (4*10 in indicator G8), with the minimum required 30.

Although I have the same observations as I have made in the dissertation, I believe that the merits of the publications outweigh their weaknesses.

Regarding the recognition of 50 points under indicator A, they will be registered automatically if/when the scientific jury gives a positive opinion on the dissertation work (I recommend it).

Evaluation of the defense documentation: I evaluate the procedural documents as compatible with the requirements of the relevant regulations.

Opinion on the question of how far all the activities on the dissertation are the personal work of the doctoral student:

The inquiry I made in the European Plagiarism Detection System gave a negative result. The comparison of the previous version of the dissertation with the current one, as well as the quick response and professional attitude to additions and corrections, give me reason to confidently state that the entire dissertation, and especially its merits, is the author's personal work, for which I congratulate him once again.

Evaluation of the submitted draft abstract: The submitted draft abstract objectively reflects the main developments in the dissertation work.

General conclusion: Despite the criticisms made, the merits I found outweigh the demerits. I give a positive vote to the overall work of the dissertation and recommend to the honorable jury to award engineer Rami Yaccoub the educational and scientific degree "Doctor" in the field of higher education 6. Agricultural sciences and veterinary medicine, professional direction 6.3 Animal husbandry.

Чл. 25 ЗЗЛД

Plovdiv, 22.04.2024   Signature:

/Prof. Dimo Penkov/