



REVIEW

on a dissertation work for obtaining an educational and scientific degree "Doctor" in a field of higher education 6. Agricultural sciences and veterinary medicine professional direction 6.4. Veterinary medicine, scientific specialty "Animal pathology.

Author of the dissertation: Majd Ibrahim Abi Haidar, part-time PhD student at the Department of "Internal Non-Communicable Diseases, Pathology and Pharmacology" at the Faculty of Veterinary Medicine, Forestry University, Sofia

Dissertation topic: "Prevalence and detection of aflatoxin types in dairy cow raw milk raised under different breeding systems, nutrition and seasons in Bekaa Valley"

Reviewer: Assoc. Prof. Dr. Metodi Hristov Petrichev, Forestry University, Sofia

Academic position: Associate Professor - Field of higher education 6. Agricultural sciences and veterinary medicine, professional direction 6.4. Veterinary medicine, scientific specialty "Animal pathology. Appointed as a member of the scientific jury by order of the Rector of the University of Forestry No. 646/08.11.2024

1. Relevance of the problem

The scientific subject is very current, and in the last 20 years there have been many scientific developments in this scientific field all over the world. This is confirmed by the literary sources used by the author in his dissertation work. Cited Literary sources – 382.

The inevitable impact of multiple factors, both during the period of plant growth and during grain storage, lead to the production of one or more mycotoxins, which undoubtedly interfere with the pathology of productive animals. Much more important is the effect of low concentrations of mycotoxins, often at levels that are difficult to prove in mycotoxicological studies, but leading to late (chronic) pathological manifestations in animals or to residual amounts in food products obtained from them, at risk for the consumer.

2. Degree of knowledge of the state of the problem and creative interpretation of the literature review

The literature review covers 55 pages, citing 382 literary sources, of which more than 45% were published in the last 10 years. The overview is divided into 35 sections and numerous subsections. Many problems of the milk production sector in Lebanon are discussed in detail.

Many other aspects of the structure, action, mycotoxicology of different types of aflatoxins as well as their metabolites have been examined. As well as the effect of aflatoxin B1 in individual species of animals and residual amounts in food products obtained from them and the risk to humans.

3. Purpose, tasks, hypotheses and research methods

The aim of the dissertation is clearly formulated and aimed at investigating and establishing the levels of aflatoxin M1 in cow's milk produced in three different dairy regions in the Bekaa Valley, Lebanon (Baalbek, Zahle and Western Bekaa), characterized by different types of husbandry and different microclimates for one year. And in parallel with this study, a study of AFB1 contamination in animal feed. Various methods have been used to fulfill the tasks set in this way. During the development of the

dissertation work, the doctoral student has mastered a significant number of methodologies and research methods, which is a reason to consider that he has acquired the necessary methodological experience to conduct a scientific experiment, and also that the educational task of this scientific degree has been fulfilled.

4. Transparency and presentation of the obtained results

The dissertation is written on 156 pages, using 24 figures and 20 tables. The dissertation is properly structured and includes all the required sections in an adequate volume. The obtained results are very well illustrated and analyzed. Tables and figures fully reflect the research carried out and are a good basis for analysis. The dissertation meets all requirements and criteria.

5. Discussion of the results and used literature

382 literary sources were used. This shows a very good awareness of the doctoral student, especially in the field of the latest scientific achievements in the field. The obtained results were skilfully compared with what was established by other researchers, an indicator of the good awareness and analytical thinking of the doctoral student. The "Results and Discussion" section has been developed in detail in accordance with the objective and set tasks. Based on the conducted research, 15 conclusions were drawn that correspond to the obtained results. The doctoral student has achieved the set goal of the work and has fulfilled the set tasks to the maximum extent.

The PhD student Majd Ibrahim Abi Haidar has mastered various methods of research and processing of the received information, has shown skills for proper planning and conducting experiments, as well as skills for professionally analyzing the obtained results and formulating logical conclusions and recommendations.

6. Contributions of the dissertation work and recommendations for practice

5 scientifically applied contributions and 6 recommendations for practice have been made, which can be applied in practice in dairy cows, in the milk production sector. Prevention and metaphylaxis of mycotoxins contamination of animal feed.

7. Critical notes and questions

I recommend that the author, for future scientific research in the field of mycotoxin analysis, use a higher level of equipment, methods and techniques. For example, High Performance Liquid Chromatography (HPLC) with a block for derivatization of the types of mycotoxins. The ELISA method gives very frequent deviations from the results and in most cases cannot prove low concentrations of mycotoxins in grain, animal feed and milk.

8. Published articles and citations

On the dissertation work, the doctoral student has presented 4 scientific publications, two of which have been reported at scientific symposia. In all publications, he is the first author. Three of the scientific publications are in an indexed journal with SJIF=5.997 (2022) and IF=1.03 (2020-2021)

The number and quality of the publications meet the requirements of the Regulations on the conditions and procedure for acquiring scientific degrees and for holding academic positions and their content reflects the main results, which have been sufficiently presented to a specialized scientific audience

CONCLUSION:

Based on the various research methods learned and applied by the doctoral student, the correctly conducted experiments, the generalizations and conclusions made, I believe that the presented dissertation meets the requirements of the Law on the Protection of Forests and Forestry of the Republic of Bulgaria and the Regulations of the University of Forestry for its application, which gives me reason to evaluate it POSITIVELY.

I would like to propose to the esteemed Scientific Jury to also vote positively and award Majd Ibrahim Abi Haidar, the educational and scientific degree "Doctor" in the field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional field 6.4. Veterinary Medicine, scientific specialty "Animal Pathology.

03.12.2024
Sofia

Prepared the Review:
Assoc. Prof. Dr. M. Petrichev

