



## 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 „Morphology“,  
professional field: 6.4. Veterinary Medicine

**Author of the PhD thesis:** Ilian Stefanov Georgiev

**Title of the PhD thesis:** „Morphological studies of the spleen in the dog“

**Scientific consultant:** Assoc. Prof. Georgi Ivanov Georgiev

**Grounds for presenting the opinion:** member of the scientific jury for the defense of the PhD thesis according to Order № 311С-365/3.07.2023 of the Rector of University of Forestry

### 1. Information about the PhD student

The PhD student Ilian Stefanov Georgiev, studied in a PhD program in the scientific specialty „Morphology“ to the Department of "Anatomy, Physiology and Animal Breeding Sciences" of the Faculty of Veterinary Medicine at the University of Forestry. The training was carried out in an „self-study form“ during the period 15.07.2022 - 29.05.2023.

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

**Relevance of the topic:** Acquired pathologies of the spleen are common in animals and lead to a number of complications requiring competent and timely intervention and treatment by veterinarians. A large part of these pathological processes are directly related to disorders of its blood supply.

An important role in the inflammatory, hyperplastic, degenerative and regenerative processes falls on the arterial, venous and capillary blood supply of the spleen. In this regard, the main blood vessel and the angioarchitectonics of the vessels in the dog's spleen need an even deeper and more detailed study and clarification. This can be achieved in addition to the standard methods of research and modern imaging methods such as contrast radiography, contrast-enhanced ultrasonography, computed tomography angiography. The different aspects and advantages in the visualization of the vessels by the different imaging methods and their combination is the gold standard for the description of the vascular bed.



A detailed and thorough study of the topography of the splenic vessels in the dog is, in turn, essential to veterinary surgery. The specificity in the ultrastructure of the vascular wall and permeability are important in the pathogenesis of inflammatory and degenerative processes, as well as in the development of regenerative processes.

Therefore, the topic of the dissertation work is relevant and a more detailed study and study of the arterial and venous blood circulation in dynamics will be extremely useful for veterinary medical science and practice.

**Structure and volume:** The PhD thesis is written on 168 pages and is well balanced in terms of volume of individual parts: Introduction - 2 pages, Literature review - 37; Purpose and tasks - 1 page; Materials and methods - 14 pages; Results and discussion - 77 pages; Conclusions - 2 pages Recommendations - 2 and Contributions - 3 pages. To visualize the methods used and the results obtained in the dissertation, 1 table and 69 figures have been prepared.

The dissertation uses literature from 142 sources, of which 30 are in Cyrillic and 112 are in Latin, and about 46% (65/142) of the literary sources are from the last 10 years.

**Review of the literature:** The literature review includes comprehensive information on the general structure of the spleen and reasons for its different topographical location in the dog. The blood vessels, histology and angioarchitectonics of the spleen are discussed in detail. Deep attention is paid to microcirculation. Imaging diagnostic methods for visualizing the blood vessels of the spleen, such as computed tomography angiography, conventional and contrast ultrasonography, and color Doppler ultrasonography, are extensively reviewed. The literary review is competently written in a good literary Bulgarian language with an easy-to-read and easy-to-understand scientific style. It clearly shows the in-depth knowledge and awareness of Iliyan Georgiev and the developed skills to make an analytical summary of the scientific literature. I think that the aim of the PhD thesis determines well and fully the essence of the work, as well as the tasks are set in a logical sequence and are formulated specifically and precisely and are adequate to achieve the aim.

**Materials and methods:** A total of 70 dogs were included in the studies, of which 23 were male and 47 were female, divided into groups for the individual research methods. The experimental design and experimental setups are properly selected. To fulfill the set goal, 13 research methods are used, and all of them are up-to-date and adequate to achieve the set tasks.

### 3. Evaluation of the obtained results

The results of the research conducted by the doctoral student, together with the discussion, are presented on 77 pages, including 69 figures. All of them provide comprehensive information on the anatomotopographical location of the spleen and its main arteries, veins and their branches, the terminal vascular bed in the parenchyma of the organ at the microscopic level in the dog, as well as changes in size and histostructure when using different types of anesthesia protocols.

Appropriate visualization methods are used, which allows accurate tracking of changes and features. The results of the histological studies of the spleen are well described and accompanied by representative figures presenting the microstructure of the organ. The performed computed tomography angiography visualizes the splenic artery and vein, their branches along the hilus, trabecular arteries and veins.



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

The discussion thoroughly and competently interprets the obtained results with the data of other authors. This is an indicator of analytical, thoroughness and good preparation of the doctoral student. Based on the results and the discussion, 16 conclusions are formulated. The contributions derived from the results and conclusions are defined concisely and clearly. I accept contributions as presented. I positively appreciate the prepared recommendations for the practice.

#### **5. Evaluation of the publications associated with the dissertation**

The results of the dissertation are presented at an international scientific conferences, which confirms the quality of the research done. In connection with the dissertation, 3 articles were prepared and published in English in the journal of the faculty, included in the NACID list of modern Bulgarian scientific publications, referenced and indexed in world-famous databases with scientific information. 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 I find that it reflects fully and adequately 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. The large number of photos is impressive, which provides comprehensive information about the conducted research. When preparing the dissertation, some technical errors have been made, such as a large distance (more lines) after figures, different sizes of the presented photos from different studies, as well as discrepancies in the bibliographic description of some of the cited authors and articles in the literature review. Given the large set of results, separating and increasing the "discussion" part would contribute to increasing the burden of the dissertation work. I recommend that the PhD student in the future publish his research not only in the scientific journal of the faculty.

#### **8. Conclusion**

The dissertation work of Iliyan Georgiev outlines him as a young researcher, with independent thinking and solid knowledge in the field of morphology and specifically in the study of the spleen in dogs.

The merits of the PhD thesis, the publication activity, the personal contribution of the PhD student and the fulfilled requirements for the necessary quantitative and qualitative criteria give me full reason to give my positive assessment of the presented dissertation work and I propose to the respected scientific jury to award Iliyan Stefanov Georgiev the educational and scientific degree "PhD" in the field of your education 6. Agricultural Sciences and Veterinary Medicine, professional direction: 6.4. Veterinary medicine, scientific specialty "Morphology"

01.08.2023 г.

Sofia

Signature:

/Assoc Prof. PhD. Kalin Hristov /