OPINION

from

Prof. Dr. Yanislav Iliev Iliev, PhD

Forestry University - Sofia, Faculty of Veterinary Medicine

Regarding the dissertation work on the topic: "The language of the dog in soundgrams in different behavioral reactions".

Author of the dissertation: assistant professor Pavlina Ilieva Hristova - doctoral student of independent preparation, for awarding the educational and scientific degree "Doctor" in professional direction 6.4. Veterinary medicine, the scientific specialty "Animal and Human Physiology", at the Department of "Anatomy, Physiology and Animal Breeding Sciences" at the Faculty of Veterinary Medicine.

1. Brief introduction for the candidate: Asst. Pavlina Ilieva Hristova completed her higher education at the Forestry University, Faculty of Veterinary Medicine in 2019 and received the educational and qualification degree "Master of Veterinary Medicine" in the specialty of Veterinary Medicine. In February 2020, after successfully passing a competition, she was appointed as an assistant in the Department of "Anatomy, Physiology and Animal Breeding Sciences" at the Faculty of Veterinary Medicine, Forestry University, Sofia.

During her teaching experience in the department, Assistant Professor Pavlina Hristova performed her official duties in the following areas - educational and scientific. She actively participates in the organization and conduct of practical classes in Bulgarian and English with 2nd year students at the Faculty of Veterinary Medicine. The scientific research work is directed in the field of Physiology and Ethology of animals and is more specifically limited to studies in the field of bioacoustic analysis of animal communication signals. The sound signals in dogs, divided according to physiological characteristics - sex, age, breed and depending on the manifested behavioral reactions - playful, agonistic, feeding and anxiety behavior were studied sequentially. To read, present and analyze the soundgrams in dogs, different methods are used to decode the language of animals.

The scientific activity of Associate Professor Pavlina Hristova is realized with publications in our scientific publications, which are indexed and referenced in world-famous databases with scientific information - Web of Science. She has presented evidence of active participation in national and international conferences where she has presented her scientific achievements. . He

also participated in a scientific project related to the study of the antioxidant effect of plants. extracts on the quality of the seed material at s.s. animals.

Simultaneously with her routine teaching activity, assistant professor Pavlina Hristova works hard to increase her professional qualification and personal competence. She uses written and spoken English at B2 level. Has a very good command of Microsoft Office products, document processing, images and graphic techniques for working with a program for graphic analysis of sounds. Possesses excellent communication skills - skills for team work and independent work, ability to listen during contact with students during laboratory classes with them.

2. Relevance and significance of the problem of the dissertation work.

The dissertation work of Associate Professor Pavlina Hristova is dedicated to a current scientific problem closely related to the study of the bioacoustic analysis of animal communication signals, which is an indicator of the growing interest in this topic and is intended to examine the topic in detail and shed more light in this area of science.

As the doctoral student points out, the knowledge and correct analysis of dog barking will improve the approach of veterinary specialists in their work with this type of animals, will help better orientation of the doctor in the diagnostic and treatment work with them, as well as in solving negative behavioral problems that have arisen. reactions. This will ability a more complete contact between man and this species of animals that are close to us socially. Thus, it will also facilitate the training process and contribute to the more successful and rapid training of animals, and their inclusion in various social activities and needs of human life.

3. Structure of the dissertation work.

The presented dissertation fully and accurately reflects the results of the conducted research. The structure of the dissertation meets the accepted requirements for this category of scientific works and is presented in a sustained literary and professional language and style. The text is written on 150 pages and contains the main sections, which are in equal proportion in terms of volume. The studies are illustrated with 72 figures and 9 tables, which are of very good quality. The introduction is presented in the form of a short annotation dealing with the relevance and necessity of the research undertaken.

4. Literary awareness.

The literature review is thorough, multifaceted and rich in information. It reflects the doctoral student's broad awareness of various aspects of the problem and creative interpretation of literary data, which shows a critical approach to existing information and gives it an analytical character At

the end of the review, a focused summary is made of the role of methods for decoding communication signals, which are currently also used for studying animal signals, and the advantages of coding and modulation are indicated. In this way, the structure of the literature review is fully consistent with the scientific problem.

5. Purpose and tasks of the research.

The purpose of the scientific research is formulated clearly and comprehensibly and is in accordance with the title of the dissertation - to give a basis and answer some of the unknown questions related to reading the language of the dog, which can serve as a basis for future studies. To achieve this goal, 5 specific tasks are set in a logical sequence,

6. Material and methods.

Own research was conducted at a high methodical level with 24 nos. socialized male and female dogs divided into 3 groups, depending on the size of the breed. Adequate and consistent with the purpose and tasks of the dissertation, methods and equipment were used. The description of the methodological settings is clear and precise, and it can be summarized that the necessary conditions for obtaining objective scientific data have been created with the selected methodological settings.

A total of 1200 soundgrams were recorded and displayed for the three breed groups of dogs, and dog barking was recorded in different behavioral contexts, divided by categories as follows:

1. Play behavior – alone and in a group with other dogs;
2. Agonistic behavior (aggression, guarding territory and/or master) - alone and in a group;
3. Eating behavior - independently;
4. Anxiety behavior (fear of object, sadness due to lack of owner) - independently.

The recordings have been processed so that each individual bark is a stand-alone recording.

7. Results and Discussion.

The obtained results are well documented and provide an adequate response to the theoretical and scientific-applied significance of the conducted research. For this purpose, recordings of dogs in various situations are presented. The records of the figures, according to the methodology used, are presented in the following sequence: waveform, spectrogram, soundgram. The results of the recordings of the soundgrams, in the various behavioral reactions, depending on the set conditions, are presented consistently and competently analyzed. As a result of the conducted research, results were obtained, not a small part of which are not only scientific, but also applied in nature. In confirmation of what has been said, there are also the obtained original results on the importance of

wave and spectral analysis in presenting the dog's language during consecutive barking and the corresponding recommendations for practice.

The discussion was conducted consistently and correctly, and the own results were compared with the data from the studies of different authors. The discussion of the obtained results is interpreted appropriately, based on the data known in the literature on the problem under consideration.

Based on the obtained results, 8 consistently formulated, well-founded and highly informative conclusions were drawn, which fully correspond to the obtained experimental data from the conducted research, and which I fully accept. In connection with the topic of the dissertation work, 3 scientific articles have been published, printed in prestigious scientific journals. The presented contribution of an original nature has both fundamental and scientific-applied significance for the scientific specialty "Animal and Human Physiology",

Original and confirmatory contributions, both of fundamental and scientific-applied importance for the scientific specialty "Physiology of animals and man", as well as recommendations for practice, which I also fully accept, have been brought to the dissertation work.

8. Conclusion.

The dissertation submitted for review on the topic: "The language of the dog in soundgrams in different behavioral reactions", developed by assistant professor Pavlina Ilieva Hristova for awarding the educational and scientific degree "Doctor" in professional direction 6.4. Veterinary medicine, the scientific specialty "Physiology of animals and man", is an independent, up-to-date and purposeful scientific development, which in terms of structure and content fully meets the criteria of the National Institute of Veterinary Medicine and the regulations for its application for obtaining the scientific degree "Doctor". That is why I give a highly positive assessment of the conducted scientific research and the obtained results, **and I strongly recommend to the members of the scientific jury to award the scientific degree "Doctor" in the scientific specialty "Physiology of animals and humans" to Associate Professor Pavlina Ilieva Hristova** in professional direction 6.4. Veterinary medicine, the scientific specialty "Physiology of animals and man", department "Anatomy, physiology and animal breeding sciences" at the Faculty of Veterinary Medicine, University of Forestry, Sofia.

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Prepared the Opinion:...
(Prof. Dr. Ya. Iliev, PhD)