EVALUATION REPORT

On the materials submitted for a competition for the conferral of the academic rank of Professor in the higher educational area 6. Agricultural sciences and veterinary medicine, professional field 6.4. Veterinary medicine; scientific specialty: **Epizootiology, infectious diseases and prophylaxis of contagious diseases in animals**; discipline: **Pathology (Pathological physiology),** announced by the University of Forestry and Technology in State Gazette, issue 18/01.03.2024, procedure code: VM-P-0224-122.

Candidate: **Assoc. Prof. Krasimira Ivanova Genova, DVM, PhD**

Reviewer: **Prof. Boycho Lazarov Bivolarski, DVM, PhD**

Brief Biographical Information about the Candidate

A single candidate is taking part in the announced competition for conferral of the academic rank of Professor – Assoc. Prof. Krasimira Genova, DVM, PhD. She was born on 13.09.1964 in Sofia and completed her secondary education in 35th High School "M. I. Kalinin" in Sofia. She acquired her higher educational degree in Veterinary Medicine in 1987 at the Mocow Veterinary Academy "K. I. Skryabin". In 1987 she became a scientific collaborator at the Research and Production Veterinary Medical Institute of Immunology, where served as a head of laboratory, and biotechnologist in the Department of Viral Biopreparations. In 1994 she defended a thesis on *Studies on the immunity and immunoprophylaxis of respiratory-syncytial viral infection in calves*. In 2001 she became a chief assistant at the University of Forestry and Technology, Faculty of Veterinary Medicine and in 2008 acquired the rank of Associate Professor. She has been a vice-dean of the Veterinary Faculty and since 05.03.2020 to present, she has headed the faculty as its Dean.

Compliance of the submitted documentation and materials by the candidate with the requirements of the Rules on the Development of the Academic Staff at the University of Forestry and Technology

After I perused the submitted documentation and materials of the candidate, I found that they fully comply with the requirements of the Rules on the Development of the Academic Staff at the University of Forestry and Technology.

Evaluation of the teaching activity of the candidate

Teaching activity plays a key role in the complex evaluation of every academic tutor. In this sense, and on the basis of the submitted notice, I can report that Assoc. Prof. Genova has a 23-year long pedagogical experience at the faculty. During this period, she has delivered practical and seminar trainings in the following disciplines: Pathology (Pathological Physiology); Immunology; Molecular Biology; Work with Experimental Animals; Organization of the Experiment and Animal Welfare; Biochemistry, both in Bulgarian, and in English. I will refer to the fact that she also lectures in the above-mentioned courses, by annually performing the required workload of practicals and lectures.

Assoc. Prof. Genova is a very assiduous, diligent and resourceful lecturer. These qualities have earned her the respect of her colleagues from the department and of her students. I have known Assoc. Prof. Genova since she was a university student. My personal opinion is that she is highly skillful at organizing, leading and controlling the teaching and research activity of the faculty and as a proof, she has been doing that during her two mandates as a dean. She shows high professionalism and academic demeanor, as well as tolerant, ethical and respectful attitude to her colleagues and students. She also has teamwork skills and good sociability – qualities which enhance the search and implementation of innovative ideas and realization of the set goals in the area of veterinary medicine. All of the above allows me to evaluate her teaching activity with a very good mark.

Evaluation of the research, applied research and publication activity of the candidate

From the analysis of the inquiry summary for participation in projects, it is apparent that Assoc. Prof. Genova has taken part in a total of 29 projects, of which 25 research and 4 educational. She was a manager of five research projects, and she participated as member in the rest. The above attests to a very good and active participation for the implementation of the tasks and goals of the projects.

Description of the published research

For the purposes of the competition for Professor, Assoc. Prof. Genova has presented a total of 63 publications, 1 monograph and 1 textbook in pathophysiology (in print), written after her first habilitation. The candidate has described them very accurately and honestly as: 3 sole author works, 13 with one co-author, 11 with 2 co-authors, and 36 with 3 and more co-authors. The publications appeared in 35 research journals, of which 6 with IF or SJR, in 7 foreign journals, referenced outside Web of Science and Scopus,

14 in Bulgarian, referenced in Web of Science and Scopus, and 8 in Bulgarian, referenced outside Web of Science and Science.

The publications in conference proceedings are 28. I can note that the number of scientific publications is sufficient, even exceeds the number of required ones.

The main scientific principles of Assoc. Prof. Genova can be grouped in several main directions:

1. Infectious pathology of ruminants, pigs and rabbits – an analysis was made of the risk factors and some main etiological pathogens in BRSV. A stronger T-cell immune response was proven in lambs injected tracheally with vaccine strain of BRSV, in comparison to subcutaneous vaccination. The dynamics of antibodies after vaccination against enzootic pneumonia in pigs was proven. An analysis of the spread of myxomatosis in rabbits was made and the need of vaccination was justified. A specific and sensitive latex was developed – agglutination test to prove the virus in hemorrhagic disease in rabbits. The dynamics of impact was traced and the harmlessness of the attenuated vaccine strain of myxoma virus on the concentration, motility and speed of rabbit sperm was proven. Furthermore, the macroscopic and pathohistological changes of the skin and viscera were monitored after the experimentally induced infection with field isolate of the myxoma virus in rabbits.
2. Use of substitutes of the nutritive antibiotics in animal breeding – the effect of herbs (chamomile and thyme) on the productive qualities of the lamb meat, as well as a combination of thyme and mint on the growth of broilers were studied. For the first time ever, the effect of the Bulgarian experimental zinc methionate on hematological indicators in comparison with zinc sulfate was traced, as well as on factors of the natural resistance in rats and pigs. The Bulgarian experimental zinc methionate has an immunoregulatory effect in rats and pigs. During an experiment with 200 broilers, it was proven that 1% chamomile and 1% rosemary added to the feed may act as potential stimulants of the growth of the birds.
3. Role of mycotoxins in immune reactivity – during the study of the impact of fumozin B1 on the humoral immune response of broilers it was found that the concentration of the total protein and albumin decreases, and the primary antibody response is inhibited.
4. Impact of the gender, breed, season and age on the immune status of birds and animals – significant differences in the proliferative activity of the lymphocytes of rams from the Karakachan and Copper Red Shumen breed were found.

5. Genetic markers – a detailed analysis of the genetic structure of sheep was made. When detecting the frequency of the appearance of alleles of the MSTN gene in the Merinos and Caucasian Merinos breeds, it was proven that exon 3 MSTN sheep gene is monomorphic in the two studied herds of the Merinos breeds. A study and identification were done of the polymorphism in the ABCG gene, that is related to milk production in three breeds raised in Bulgaria – Askanian Merinos, Caucasian Merinos, and Karnobat Merinos. The genome DNA was extracted and the genotypes were evaluated through PCR amplification, by using a specific number of two primers. Furthermore, a systemic review of the gene, responsible for the synthesis of the protein myostatin that regulates muscle growth has been made.
6. Problems in dental medicine – the degree of apical penetration in root canals obturated with adhesive channel filling media was determined. The sensitivity of the caries-genic microorganisms to tri-, bi-, and mono-step adhesive systems was studied, by using total etch and self-etch approaches. The sensitivity of the studied microorganisms (Str. mutans and Lactobacillus acidophilus) is strongest to total etch and self-etch systems of primers, with the highest value for Optibond TM FL Prime. As a whole, the sensitivity of Lactobacillus acidophilus to the tested adhesive systems is weaker, compared to Str. Mutans.

The presented research works have been presented in their integrated form that attests to the comprehensive knowledge, remarkable experience and skills of the candidate in reporting and analyzing the obtained results. The fact that the bigger part of the submitted works have an applied research character is notable, because they suggest specific recommendations in livestock farming and veterinary medical practice.

The included monograph on *Bovine respiratory disease complex* spans on 136 typographic pages with 19 figures and 11 tables. The literary sources are recent and amount to 421. Bovine respiratory disease complex is multifactorial, polyetiological syndrome, observed in calves and young bovines. The disease poses a serious health and economic problem. In the monograph, the candidate describes the foundations of epidemiology, clinics and prophylaxis of BRDC. The comprehensive literary sources and the author's own research allow the review of the mechanisms of development and interaction of the etiological agents, as well as the issues of prevention and control of BRDC. It has been noted that despite the achievements of prophylaxis and treatment of BRDC, the morbidity and mortality have increased in the last 20 years.

The author has concluded that many of the known risk factors, and not the lack of suitable therapy, are the most important reasons for increasing the frequency of the respiratory disease complex on the farms.

The research works, presented by Assoc. Prof. Genova have been cited in over 60 Bulgarian and foreign literary sources.

Judging from the above, I may note that the research production of Assoc. Prof. Geniva is very well presented, which allows me to evaluate her research activity very positively. In this sense, I can add that she has participated in numerous conferences. The inquiry summary reports 46 scientific forums, of which 4 national, and 42 international.

Critical remarks and recommendations

Despite the strong arguments in favour of my positive evaluation of the research production of the candidate, I will allow myself to make the following remarks and recommendations which must not in any case be interpreted as disapproval of the whole research and teaching activity of the candidate.

1. In the inquiry with the research contributions the candidate has described the main directions in great detail. However, some of the directions could have been united, in order to provide a clearer idea of the many years of research activity of the candidate.
2. As I have become aware of the scientific themes of the work of the candidate, I recommend that she may continue doing research on the problems in the main directions of her research.

Conclusion

In summary, I may note that Assoc. Prof. Genova fully meets the requirements for conferral of the academic rank of Professor, listed in the Law on the Development of the Academic Staff in the Republic of Bulgaria. My complex evaluation of the candidate is positive. The above allows me to urge the honorable members of the Academic Jury to vote in favour of conferring the rank of Professor to Assoc. Prof. Krasimira Ivanova Genova, DVM, PhD in the higher educational area 6. Agricultural sciences and veterinary medicine; professional field 6,4. Veterinary medicine; scientific specialty: Epizootiology, infectious diseases and prophylaxis of contagious diseases in animals; in the discipline: Pathology (Pathological physiology) at the University of Forestry and Technology – Sofia.

20.05.2024 Reviewer:

Stara Zagora /Prof. B. Bivolarski, DVM, PhD/