REVIEW

on materials regarding competition for the academic rank "Associate Professor", in higher education field 6.0 „Agrarian Sciences and Veterinary Medicine", professional field 6.4 „Veterinary Medicine", scientific specialty "Epizootiology, infectious diseases and prevention of infection diseases of animals", scientific discipline "Infectious diseases (general part, diseases on farm animals, diseases on equids, diseases on companion animals) announced by the University of Forestry, promulgated in State Gazette issue 100 of 16 December 2022, procedure code **VM-AsP-1222-96.**

Candidate: Chief Assistant Professor Georgi Malinov Stoimenov, DVM, PhD.
Reviewer: Professor Ivan Stoyanov Zarkov, DVM, DSc, Department of Veterinary Microbiology, Infectious and Parasitic Diseases, of Veterinary Medicine Faculty, Trakia University – Stara Zagora. Professional field 6.4 „Veterinary Medicine ".
Appointed as a member of the academic jury by Order № ZPS-42 from 27.01.2023 of the Rector of the University of Forestry and decision of the Faculty Council of the Faculty of Veterinary Medicine (Protocol 37/17.01.2023). Designated as a reviewer at the first meeting of the academic jury (24 February 2023).

1. Short biography of the candidate.

Chief Assistant Professor Georgi Malinov Stoimenov was born on 29th of April 1986. From 2005 to 2011 he was enrolled at the Faculty of Veterinary Medicine at the University of forestry – Sofia and graduated as a Master in Veterinary Medicine. After graduation he worked at private veterinary clinic zoo city center (2011 – 2013) and in Institute of Experimental Morphology, Pathology and Anthropology with Museum (2012 - 2018). Since 2013 he was appointed as Assistant Professor at the FVM, UF; later promoted to Chief Assistant Professor (2017) in the Department of infectious pathology, hygiene, technology and control of foods of animal origin. In the same year he was conferred the PhD educational and academic degree after defending a thesis entitled "Studies on Influenza A viruses in wild birds in Bulgaria". Fluent in spoken and written English. Ch. Assistant Professor Stoimenov has more than 9 years of teaching experience at University of Forestry. The candidate was a member of the **organizing committee** in 5 scientific forums. He was a member of the **scientific organization** European Biosafety Association in 2021, when he completed 5 online trainings. Dr. Stoimenov gave a lecture to students, specialists and teachers at the Faculty of Veterinary Medicine in Córdoba, Spain in 2022. He improves his qualifications by participating in long-term and short-term **specializations** at home and abroad, as well as by participating in training **seminars**. As an **expert**, he carries out consulting activities at the International Atomic Energy Agency, the national service for advice in agriculture and participation in an expert advisory board on African swine fever at the Ministry of Agriculture. He prepared 2 **reviews** of scientific publications for the journal "Tradition and modernity in veterinary medicine".

2. Compliance of applicant's materials and documents to the requirements listed in the Statute for Development of the Academic Staff of the University of Forestry.

All copies of documents and materials related to the application of Dr. Stoimenov were presented in a good form. One part of them are associated to the procedure itself, and another part – to the research activities of the applicant. All of them are compliant to the the Statute for Development of the Academic Staff of the University of Forestry.

Assessment of conformity of the indicators in the reference with the minimum national requirements for occupying the academic position "Associate Professor" show: **Indicator A** - Required points 50, candidate points **50**. **Indicator B** – habilitation work or scientific publications refereed and indexed in Web of Science and Scopus. Required points 100, candidate points **140**. **Indicator Г** – publication of monographs (Г5), book (Г6), articles and reports published in scientific publications referenced and indexed in the world database with scientific information after reduction of the number of co-authors (Г7), articles and reports in non-refereed peer-reviewed journals or published in edited collective volumes (Г8). Required points for indicator Г- 200, candidate points **227.61**. **Indicator Д** - citations or reviews in scientific publications referenced and indexed in the world database of scientific information or monographs and collective volumes (Д13), citation in monographs and collective volumes with scientific peer review (Д14), citations or reviews in non-refereed journals with scientific review (Д15). Required points 50, applicant points **215**.

Out of the required 400 points for the scientific position "Associate proffesor", the candidate has 632.61 points.

3. Evaluation of teaching & learning activities.

Dr. Stoimenov has been charged with teaching work since joining the FVM at University of Forestry. He has more than 9 years of teaching experience. Leads lectures and practices in Bulgarian and English language courses. **In the Bulgarian courses**, he leads lectures in 5 disciplines (module infectious diseases; epidemiology and preventive medicine; virology; management of herd health and diseases of bees, fish and game) and practices in 5 disciplines (module infectious diseases; epidemiology and preventive medicine; virology and bee, fish and game diseases; mobile clinic). The provided reference for 5 academic years, the period after obtaining the educational and scientific degree "Doctor" in 2017, shows a high overall load of lectures and practices - a total of 350 to 376 hours per year. Lectures from 30 to 56 hours and practices from 296 to 329 hours per year. **In the English language course**, he leads lectures in 4 disciplines (module infectious diseases; epidemiology and preventive medicine; management of herd health and diseases of bees, fish and game) and practices in 4 disciplines (module infectious diseases; epidemiology and preventive medicine; bee, fish and game diseases and a mobile clinic). The horary over the years is from 116 hours to 382 hours each yaer. The lectures are for the last 3 years and are between 34 and 64 hours, and the pactices for the 5 years presented are from 116 hours to 318 hours per year.

Outside the classroom employment of ch. assistant professor Dr. Stoimenov includes conducting semester exams of students, participation in committees for the defense of clinical internships of the students. To improve education, he participated in the development of **curricula** for 5 of the above mentioned disciplines. Participates in 4 **permanent committees** at the faculty - ethics committee (2018); on organization and conduct of practice in animal husbandry, clinical and pre-graduation internship (2018); in clinical activity (2020); on accreditation, after accreditation monitoring and control (2020). He has participated in 5 **temporary committees** at the faculty for checking, evaluating and defending the internship reports of 5th year students. He participated in the creation of a **teaching laboratory and a center** for the diagnosis of infectious diseases in animals. The candidate is a member of a working group for the preparation of a project for **program accreditation** of a specialty from the regulated professions 6.4 Veterinary Medicine in the Faculty of Veterinary Medicine at University of Forestry for the Master's degree program, regular form of education.

Dr. Stoimenov participated in the development of a center for electronic forms of distance learning, being an author of an electronic module "Infectious diseases (pet animals)".

With all these teaching and learning activities, Dr. Stoimenov increased his qualifications and showed that he is a well-prepared and experienced teacher.

4. Evaluation of research, research & development and teaching activities of the candidate.

The overall research activities of Dr. Pepovich was made popular with defense of a PhD thesis, publication of his research works in a monograph, book, research journal and participation in research forums and research projects.

Twenty-five publications and other materials not included in the materials for obtaining the educational and scientific degree "**Doctor**" (3 copies) are subject to review. These are **22 publications and 3 other materials** (monograph, "Avian influenza in Bulgaria" ISBN:978-954-2910-99-2 in 2019; book "Studies on influenza A virus in wild birds in Bulgaria" (2014 - 2016)" on the basis of a PhD Thesis - ISBN:978-619-7554-90-8 in 2022; electronic form of distance learning of electronic module "Infectious diseases (pet animals)". Monograph, book, electronic form of distance learning of electronic module "Infectious diseases (pet animals)" are written only by the candidate.

4.1. Participation in research, research & development and educational projects.

Dr. Stoimenov presents participation in 11 **projects**. Of these, 6 are research projects and 5 are educational projects. He participated in 2 university **research projects** funded by University of Forestry for the period 2020 and 2021. The first one is on the topic of "Study of the protective mechanisms of the mammary gland and the spread of mastitis in sheep" and the second one on the topic of "Bartonellosis in cats - first seroepidemiological and molecular biological research in Bulgaria". Another project is at the Scientific Research Institute of the Ministry of Education and Culture with the first stage completed. It is related to the study of the relationship synthesis-structure-phase boundary transitions-mechanical properties-biological properties in composite calcium-phosphate biomaterials with application in surgery and dentistry. He Participates in work package 6 "in vivo testing of biocompatibility and bone regeneration". Another significant project in which the candidate was involved as a consultant in 2015-2016 is "The Use of Stable Isotopes to Trace Bird Migrations and Molecular Nuclear Techniques to Investigate the Epidemiology and Ecology of the Highly Pathogenic Avian Influenza", joint division IAEA/FAO. The main task of the project is to verify, update and/or improve the DNA-barcoding protocol used for species identification of birds carrying influenza viruses, as well as to test the bird samples collected so far by the project from the different participating countries. The next project GP/EFSA/ENCO/2018/04 is for the identification of specific competent vectors in the aspect of monitoring some exotic transboundary vector-borne animal diseases in Bulgaria, through the use of modern molecular biological methods. Within the project, Dr. Stoimenov participated in a specialization on the topic "Identification of specific competent vectors, using modern molecular-biological methods (DNA-barcoding)". The last project is related to the detection of hepatitis E in pigs and pig products (Technical Cooperation, Bulgaria 5017. Enhancing the National Diagnostic Capabilities for Detection of Hepatitis E Virus in Pigs and Pig Products. International Atomic Energy Agency, Technical officer: Ivancho Naletoski).

Four out of 5 **educational projects** were implemented with the financial support of the Operational Program "Development of Human Resources", co-funded by the European Social Fund of the European Union. The first project No. BG051PO001-4.3.04-0052 the applicant is the author of an electronic module "Infectious diseases (in pet animals) and has completed a course on "Working and maintenance of Blackboard LearnTM e-learning platform". Another project BG051PO001-3.1.09-0019 is for "Building a unified system for the qualification and career development of teachers at the University of Forestry-Sofia". As a member of the working team, Dr. Stoimenov has completed a course on "Web technologies, E-Learning

Methods and Systems". The third project (Contract No. BG051PO001-3.3.06-0048/04.10.2012) for the period 2007-2013 has the task of "Building and developing young highly qualified researchers for effective application of biomedical research to improve the quality of life". The fourth project (BG05M20PO001-2.002.-0001) is entitled "Student practices-phase 1". In it, the candidate participates as an "Academic Mentor" and a technical coordinator. The fifth project BG05M20PO001-2.009-0034 "Support for the development of scientific capacity at the Universityof Forestry". It is funded by the operational program "Science and Education for Smart Growth", co- funded by the European Union through the European Structural and Investment Funds.

4.2. Analysis of published research works.

Out of all 25 materials subject to review, 22 are publications (88%) and 3 are other materials (12%). Of the publications, 2 summaries that have not been published (C2 and C11) **are not subject to review**.

Of the 22 publications, 21 are **in journals** (95.5 %) and 1 in **proceedings** of scientific conferences (4.5 %). In one (B13) Dr. Stoimeonov is the **only one author** (4.5%), **he is the lead author** in 6 publications (27.3%), and in the rest he is a co-author. According to the place of publication of the scientific journals, 13 of them (59.1%) are abroad and 9 (40.9%) in Bulgaria. According to the language of publication, 17 of them are in a foreign language (77.3%) and 5 are in Bulgarian (22.7%). **In refereed and indexed journals** in the world database there are 14 papers (63.6 %), and in non-refereed and indexed journals there are 8 (36.4 %). Of the publications in the refereed and indexed journals, 5 scientific papers are with IF (35.7 %), 2 are with SJR (14.3 %) and 7 without IF&SJR (50 %). There are 5 (35.7%) **abroad**, and 9 (64.3%) **in Bulgaria**. Candidate's **overall IF** is **3.324** and SJR's is **1.864**. Of the publications in **non-refereed and indexed journals** (8 papers), 4 are in English and 4 in Bulgarian (50% each). In 2 scientific papers the candidate is the lead author (25 %) and in 6 he is a co-author (75 %). The material published in the collection is from scientific conference held in Bulgaria in the Bulgarian language. In it, the candidate is a co-author.

In the materials **other than publications**, the candidate is an independent author of the **monograph** "Avian influenza in Bulgaria", Intel Entrans publishing house, ISBN 978-954-2910-99-2, SOFIA, 2019, pp. 1-128, **book** "Studies on influenza viruses A in wild birds in Bulgaria (2014–2016)", Intel Entrans publishing house, ISBN 978-619-7554-90-8, SOFIA, 2022, p. 1-134 (Based on a Phd thesis for awarding an educational and scientific degree "doctor") and on an electronic course for students of veterinary medicine, based on the Blackboard LearnTM platform, http://elearn.ltu.bg/, 2013 - infectious diseases (pet animals).

Dr. Stoimenov's main research interests are associated with infections in **birds**. They account for 50% of his scientific publications. Researches in **goats** was related to studies on mastitis and accounted for 13.6% of his scientific publications. The rest 9.1% are the studies: in **sheep**, the microbiological status in the mammary gland was determined and also determination of the antibiotic sensitivity of the isolated strains; in cattle and their offspring, the blood biochemical activity of enzymes was described and their indicators were evaluated; third studies were conducted on Eimeria in **rabbits** and fourth studies were conducted on Mycoplasma Hyopneumoniae in **pigs** with an evaluation of the therapeutic effect of antimicrobial agents. The candidate has participated in 12 scientific conferences (1 national and 11 international).

The summary report shows that Dr. Stoimenov, based on his scientific output and other indicators, is an established scientist and specialist in the field of epizootology and animal infectious diseases. His numerous studies and accumulated knowledge make Dr. Stoimenov's participation in the announced competition justified and deserved.

4.3. Impact of applicant's research activities (citations).

There are 11 cited scientific works. Total citations are 21. Of these, 10 are in refereed journals, 9 are in non-refereed journals, and 2 are in reports of collective works. Seven of the journals that have cited publications are with IF (**total IF 27.989**) and 3 with SJR (**total SJR 8.876**).

4.4. Contributions in research works of the candidate.

Scientific contributions.

The contributions of the scientific works submitted for participation in the current competition are related to solving theoretical and practical problems in the field of animal infectious diseases. They are up-to-date and are the result of the application of complex research methods and in-depth analysis of the results. Contributions are original to our country and some are confirmatory.

Most of them are related to infectious pathology in **birds**. More important of these are related to infections caused by HPAIV **H5N1**. The first outbreak of HPAI H5N1 in poultry in Bulgaria is described. The virus was isolated, subtyped and pathotyped using classical and molecular biological methods. The clinical signs and histopathological changes from spontaneous infection with the virus in domestic hens were studied consecutively. The target tissues and organs of the virus in chicken were clarified by immunohistochemical analysis. A phylogenetic analysis was also carried out to establish the mode of movement and entry of the virus into Bulgaria and the affected farm (6). Other publications (5, 9) have performed HPAIV H5N1 outbreak analysis in Dalmatian pelicans. The isolated viruses were sequenced, a phylogenetic analysis was performed, in which the relationship of the subtype to the viruses isolated in Bulgaria and Romania in the same year was confirmed. Histopathological changes in the visceral organs of birds naturally infected with the virus were also evaluated.

Infections in birds caused by HPAIV **H5N8** have been studied in a series of publications. In case of spontaneous infection of pheasants, the clinical signs, pathohistological changes and spread of viral antigen in tissues and organs were studied immunohistochemically. An analysis was made of the possible infection entry routes in Bulgaria and the role of hunting farms for wild birds in the spread of the virus (3). Another publication investigated the clinical signs and pathohistological changes of natural infection in different age groups of ducks used for foie grass production. The role of this bird species as a reservoir of infection and the importance of improving biosecurity measures in mallard farms have been confirmed (4). The Bulgarian experience in field and laboratory diagnostics of HPAIV H5N8 is presented. The clinical signs and pathological changes in infection of different types of domestic and wild birds were analyzed. Adapted and implemented for routine diagnostics for rRT-PCR detection of H5N8 in the accredited laboratory (14, 22).

An evaluation of the diagnostic possibilities of various serological tests (ELISA, HI, AGID, VNT) for the detection of antibodies against Influenza A virus in wild birds from serum and yolk samples was made. Research with several different laboratory tests has been found to be the correct approach to obtain consistent results (16).

A review has analyzed the genetic evolution and origin of H5N8 HPAIV and other H5 HPAIVs causing infections in birds in Asia, Europe and North America (20). Another review published a comprehensive analysis of the feasibility of using DNA barcoding for surveillance of Influenza A viruses in wild migratory bird habitats. The method makes it easier to obtain material (excreted faeces, feathers, instead of catching birds) for research (21). In addition, the method has the ability to determine the species of animals which are able to carry pathogens with public heath importance (including and bird species carrying HPAIV). It has advantages compared to classical methods for taxonomic determination and

classification of vector species. It can also be used in the surveillance programs for HPAIV in Bulgaria (13).

Avian avulavirus1(AAV1) velogenic strains isolated in 2016/17 using real-time reverse transcriptase polymerase chain reaction (rRT-PCR) and sequencing (determination of the sequence of nucleotide bases) were evaluated for the current classification of AAV1 and the belonging of the Bulgarian isolates to different genetic lines (2).

A comparative study of hepatocarcinogen (N-nitrosodimethylamine and N-nitrosodiethylamine)-induced pre- and neoplastic liver lesions in line 151 White Leghorn chicken embryos and in birds was conducted, the studies being supplemented by histopathological, hematological and biochemical studies (1).

Studies in **goats** are related to studies on mastitis. Intracisternal treatment was carried out and a prophylactic effect with antibiotic treatment during the dry period was reported, and the application of a selective and non-selective approach of antibiotic administration led to a reduction in the spread and manifestation of mastitis and a reduction in somatic cells in milk after parturition (10). In another material, the diagnostic methods for mastitis detection were analyzed with an assessment of the subclinical form of mastitis (15) and hematological changes in erythrocytes (RBC), hemoglobin (Hb), hematocrit (MCH), mean cellular concentration of hemoglobin (MCHC), the distribution of red blood cells (RDW), white blood cells (WBC) in lactating goats with subclinical mastitis. The main changes are related to white blood cell levels (17).

A study was carried out on the microbiological status in the mammary gland of Lacon **sheep**. Microorganisms were isolated in 53.4% of them, which were in different combinations or alone. They were identified as staphylococci (S. Xylosus, S. Epidermidis) and non-pathogenic streptococci (Lactococcus lactis ssp. lactis). The sensitivity of the isolated bacteria to antibiotics of different groups was established (12). In another study, a molecular biological method was applied to identify 2 species of helminths from sheep - Haemonchus (Nematoda, Trichostrongilidae) and Fasciola hepatica (Trematoda, Fasciolidae) in order to amplify species-specific fragments with the possibility of species determination (19).

Secondary bacterial pathogens coused a respiratory infection (Mycoplasma Hyopneumonie and Actinobacilus Pleuropneumonie (APP)) were detected in nasal and lung samples from different age groups of **pigs**, with the majority of them showing high levels of resistance against tetracycline antibiotics (18).

In two breeds of **cattle** (Bulgarian Black and Bulgarian Brown) and their offspring, the blood biochemical activity of some enzymes - aspartate aminotransferase (ASAT), alanine aminotransferase (ALAT), alkaline phosphatase (ALP), acid phosphatase (ACP), albumin (Alb), total protein (TP), creatine-phosphokinase (CPK), total lipids (TL), calcium (Ca) and was evaluated using statistical methods. Mean values of ASAT, ALAT, Alb, TP, TL and Ca were found to be higher in the Bulgarian Black Cattle cow group than in the calf group ($P<0.05$), while ALP and ACP were lower -low in the cows compared to the calf group ($P<0.05$). In the Bulgarian brown cattle breed, the mean values of Alb, TP, CPK and Ca were found to be higher in the cow group than in the calf group ($P < 0.05$), while ASAT, ALAT, ALP, ACP, TL was lower in cows compared to the calf group ($P < 0.05$) (7, 11).

Rabbits were experimentally infected with Eimeria parasites and molecular biological methods were used, as an alternative to the classical ones, for their species identification. The presence of 5 species of Eimeria parasites has been confirmed. The conclusions are that the method can be used for species identification of Eimeria parasites in mixed populations (8).

Contributions to learning/teaching activities.

An e-learning course on Infectious Diseases (pet animals) has been developed. It reflects the most necessary theoretical and practical knowledge of infectious animal diseases for a pet

animal. Emphasis is on the basic principles in the setting of non-laboratory (epidemiological features, clinical signs, pathological changes) and laboratory diagnosis of infectious diseases in pet animals (25).

5. Evaluation of the personal contribution of the applicant.

The analysis of works presented for evaluation allowed me concluding that for works in which the candidate is the sole author, the contribution is entirely his own. He has a leading contribution in works in which he is the first leading author. For collective works, I assume that the candidate has also a contribution regardless of the place in authors' list. This conclusion is substantiated by the integral nature of the studies, outlining the scientific profile of the candidate.

6. Critical notes and recommendations.

There is a discrepancy in the number of articles in the attached dissertation abstract (3 articles) and the now attached documents for obtaining the educational and scientific degree "Doctor" (1 article). - All articles in the attached abstract (Nos. 1, 2 and 3) of a dissertation for obtaining the educational and scientific degree "Doctor" are also present in the habilitation materials (B5, B20 and B21).

- In the abstract of a dissertation for obtaining an educational and scientific degree "Doctor", defended in 2017, the now attached article under number A3 is not present. It was published in 2020 in the Bulgarian Journal of Veterinary Medicine, 2020 ONLINE FIRST ISSN 1311-1477; DOI: 10.15547/bjvm.2020-0062.

- Some of the publications (B1, B7, B8, B11, B19) **are not directly related** to the scientific area for which Dr. Stoimenov applied. According to the classifier of areas of higher education and professional areas, they are in area of higher education 6. Agricultural sciences and veterinary medicine, professional area 6.4. Veterinary medicine, but not in the scientific specialty "Epizootology, infectious diseases and prevention of infectious diseases in animals". One part is research on invasive diseases and others are non-infectious.

7. Personal impressions.

From presented materials, I conclude that chief assistant professor Georgi Stoimenov is a good scientist and teacher. He can work on his own and within a team. The impressions about his work are very good.

8. Conclusion.

Summarizing all presented data and comparing them to the minimum requirements for conferring the academic rank "Associate Professor" listed in the Statute for Development of the Academic Staff of the University of Forestry, it could be seen that the applicant covers the needed minimum. Therefore, I propose to confer the **academic rank "Associate Professor"**, in scientific discipline "Infectious diseases (general part, diseases on farm animals, diseases on equids, diseases on companion animals), scientific specialty "Epizootiology, infectious diseases and prevention of infection diseases of animals", to **Chief Assistant Professor Georgi Malinov Stoimenov, DVM, PhD.**

Undersigned: 

The review report is presented on 9.03.2020