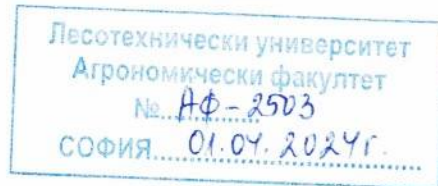


REVIEW



on the materials for participation in a competition for the academic position "docent", field of higher education 6. "Agrarian sciences and veterinary medicine", professional direction 6.2. "Plant Protection", scientific specialty "Phytopathology", for the needs of the "Plant Protection" Department at the Faculty of Agronomy, announced by decision of the AC of University of Forestry in the State Gazette, no. 102 of 08.12.2023 with a term of two months and procedure code: **AGR – AsP – 1123 – 119**.

Candidates for participation in the competition are:

1. Ch. Dr. Zhelyu Georgiev Avramov, assistant professor;

Reviewer: Dr. Slavtcho Bonev Slavov, associate professor of PD 6.2. Plant Protection from University of Forestry, Faculty of Agronomy, Department of Plant Protection, confirmed as a member of the scientific jury by order ZPS-67/14.02.2024 of the Rector of LTU

1. Brief biographical data about the candidate

Ch. Assist. Prof. Dr. Zhelyu Georgiev Avramov, was born on December 26, 1967 in the city of Sofia. He completed his higher education at the Higher Agricultural Institute (now the Agricultural University) in the city of Plovdiv and graduated in 1992 as an agronomist engineer majoring in "Plant and Soil Protection". The educational and scientific degree "Doctor" was obtained after the defense of a dissertation on the topic "Phytoplasmic agents Phytoplasmas Causing Grapevine Yellows on Vine (*Vitis vinifera* L.). Diagnostic methods" in scientific field 6. Agricultural sciences and veterinary medicine, professional direction 6.2. "Plant Protection", scientific specialty "Phytopathology", at the Institute of Soil Science, Agrotechnology and Plant Protection "Nikola Pushkarov" - Sofia belonging to the Agricultural Academy.

The candidate is consistent in his employment after university education. For more than twenty years (from 1993 to 2015) he worked in the Central Plant Quarantine Laboratory in Sofia (which during the period was part of the National Plant Protection Agency, the National Plant Protection Service, the Bulgarian Food Safety Agency) as Chief Specialist, subsequently as Chief Expert in the Phytopathology Department, Head of the Phytopathology Department and Head of the Phytopathology and FSD Department.

In 2015, he started as an "assistant professor" in the "Plant Protection" department of the Faculty of Agronomy, Forestry University in Sofia. Since 2017, he has been appointed in the same department to the academic position of "chief assistant professor", which he holds until now, which is proven by official memo No. ЧР 2516/1 dated 12.01.2024 of FU.

Ch. Assist. Prof. Avramov has been a member of the American Phytopathological Society (APS) since 2005, since 2007 he has been a member of the Bulgarian Association of Agronomists, and since 2013 he has been a member of the Union of Scientists in Bulgaria.

2. Conformity of the applicant's submitted documents and materials with those required according to the Regulations for DAS at FU

The submitted documents and materials of the candidate for participation in the competition correspond to those required in the Regulations of the DAS at FU. A curriculum vitae according to the European model, diplomas for higher education and ESD "Doctor", official notes certifying the academic position held and for internship in the specialty, medical certificate and criminal record certificate, references for the fulfillment of the minimum national requirements for the academic position "associate professor" and for contributions in research work, lists of publications and

citations with relevant evidence and summaries of publications in Bulgarian and English, a monograph with author the candidate, published in 2023 (ISBN 978-619-7737-10-3), information cards on sample in Bulgarian and in English, diplomas, and certificates of membership and additional qualification.

In the presented information from Ch. Assist. Prof. Zhelyu Avramov for the scientometric indicators for acquiring the academic position of "associate professor", according to the minimum national requirements of LDASRB and the Regulations for the implementation of FU, Sofia, the points for each individual indicator are clearly and objectively indicated, supported by the relevant materials, namely:

- According to indicator A: presented materials for 50 points, with minimum requirements 50 points.
- According to indicator V: presented materials for 100 points, with minimum requirements 100 points.
- According to indicator G: presented materials for 287.59 points, with minimum requirements 200 points.
- According to indicator D: presented materials for 675 points, with minimum requirements 100 points.
- According to indicator E, materials for 115 points are presented, although there are no requirements for this indicator for the academic position "associate professor".

The total number of points that the materials presented by the candidate collect is 1227.59 points and several times exceeds the minimum required 400 points for the academic position "docent".

3. Evaluation of the candidate's educational and teaching activities

Ch. Assist. Prof. Dr. Zhelyu Avramov has been professionally engaged in teaching activities at FU since he joined the university as an assistant in 2015, giving exercises and lectures in the disciplines related to the scientific specialty "Phytopathology". In the years after 2017, as a chief assistant, he reports each academic year a sum of auditory and non-auditory hours significantly exceeding the norm of 360 hours per academic year.

Ch. Assist. Prof. Zhelyu Avramov, conducts exercises in the disciplines "General Phytopathology" and "Agricultural Phytopathology" from the Bachelor's College of Agriculture, majoring in "Plant Protection" and in the discipline "Phytopathology" from the Bachelor's College of Agriculture, majoring in "Agronomy", full-time education, lectures and exercises in the discipline "Phytopathology" from the EQD "Bachelor", correspondence study. The candidate is a holder of the discipline "Forecasting and signalling" from EQD "Bachelor" majoring in "Plant protection" and gives lectures and exercises in disciplines of students from EQD "Master" in majors "Control and management of pests", "Control and management of plant protection products", "Precision agriculture" and "Environmentally sound management of crop plant pests" in regular and extramural forms of education. In the period 2015 - 2023 Ch. Assist. Prof. Zhelyu Avramov supervises the practical training of students in the disciplines "Phytopathology", "General Phytopathology" and "Agricultural Phytopathology".

Within the framework of the project BG05M2OP001-2.016-0022 "Modernization of higher education for sustainable use of natural resources in Bulgaria", financed by OP "Science and education for intelligent growth" from 14 to 28 November 2022, Dr. Zhelyu Avramov visited the University of Agronomic Sciences and Veterinary Medicine (USAMV) in Bucharest, Romania, where he gave lectures to students.

The above-listed exercises and lectures in bachelor's and master's courses, as well as lectures given abroad, show the incredibly large volume of teaching activity of the candidate and the accumulated teaching experience in disciplines related to the scientific specialty "phytopathology".

4. Evaluation of the candidate's scientific, applied scientific and publication activity

4.1. Participation in scientific, scientific-applied and educational projects

Ch. Assist. Zhelyu Avramov, is a participant in a number of international and national projects and projects financed by FU. There are five international projects in which the applicant indicated that he is a participant. Three of the presented international projects are related to the improvement of phytosanitary control (BG98/IB/AG02, BG01-AG-01-A, BG/2007/IB/AG/01/TWL). Of the other two projects, one aims at the construction of a laboratory for indicator plants needed for the Central Plant Quarantine Laboratory (BG9913.02.03). Ch. Assist. Prof. Dr. Zhelyu Avramov is also a participant in a project financed under the Erasmus+ program, aimed at improving the practical skills of horticulture specialists in response to the requirements of the European Green Deal (2020-1-R001-KA203-080398).

The candidate in the competition is a participant in two educational projects, namely "Support for the development of the scientific capacity at the Forestry University" (BG05M2OP001-2.009-0034) and "Modernization of higher education for sustainable use of natural resources in Bulgaria", financed by OP "Science and Education for Smart Growth" (BG05M2OP001-2.016-0022).

He is a mentor to students from FU and SU (specialty "Molecular Biology") to the "Student practices 2013 - 2014" program and project BG05M2OP001-2.002-0001 of the Ministry of Education "Student practices - Phase 1". He is an academic mentor to students from FU majoring in "Plant Protection" and "Agronomy" for project BG05M2OP001-2.013-0001 "Student practices - Phase 2".

Ch. Assist. Prof. Zhelyu Avramov, is the head of one project (Contract No. 21-2016) and a member of the working groups of three more projects financed by FU (Contract No. 17-2016, NIS-B-1070, NIS-B-1210).

Part of the international activity of Ch. Assist. Avramov is his participation in EU missions to support agricultural and other structures in the accession of candidate countries for EU membership (Northern Macedonia, Serbia and Montenegro), as an EU expert for the training of laboratory specialists for a project of the European Agency for Development - European Agency for Reconstruction (EAR) Contract No. 06MAC01/03/007-"MAFWE Support to Integrated Border Management" in the period 2007-2015.

The candidate also participates in the following international scientific networks related to Eufresco research topics: 1) 2021-A-377 Infrastructure for sharing infested seed lots for test development and validation; 2) 2021-A-378 Inventory and validation of quality control procedures for the extraction of nucleic acids for real-time PCR used for the diagnosis of pests.

The participation of Ch. Assist. Prof. Zhelyu Avramov in the mentioned projects proves his expertise in the field of phytosanitary control and the discipline of "phytopathology", recognized by specialists in the country and abroad, as well as his active work to increase the quality of higher education in Bulgaria, and the possibility him to work in a team.

4.2. Characteristics of published scientific results

The main scientific research interests of Ch. Assist. Dr. Zhelyu Avramov are in the field of laboratory diagnostics, mainly of plant viruses, bacteria and phytoplasmas, including through modern molecular methods. He has extensive professional experience in the application of plant inoculation methods and the study of vectors for plant pathogens. This is proven by the presented scientific publications.

The total number of scientific publications with which Ch. Assist. Prof. Dr. Zhelyu Avramov participated in the competition is 30, distributed as follows: one monograph, publications in refereed journals 18 (of which 7 in foreign journals and 11 in Bulgarian journals), publications in non-refereed journals – 6 (1 in foreign and 5 in Bulgarian journals), publications in proceedings of scientific

forums – 5 (3 in proceedings of international scientific forums and 2 in those of national scientific forums). Five of the presented scientific articles were published in journals with an impact factor (IF), with a cumulative IF=2.328. In the publications presented for the competition, the candidate is an independent author in 7 of them (including the monograph), and the rest are published in co-authorship with one (3 issues), two (9 issues) or more authors (11 issues). Of the mentioned publications, 7 were written in Bulgarian, 18 in a foreign language (English), and 5 in two languages (Bulgarian and English).

The scientific work of Ch. Assis. Dr. Zhelyu Avramov mainly refers to research areas such as diagnosis of new plant diseases, spread and identification of plant pathogens, occurrence and spread of plant diseases when applying certain technologies of growing agricultural crops. According to the groups of pests that have been studied and reported in the applicant's submitted publications, they are distributed as follows:

- Viral pathogens – 5 publications (G7.1; G7.15; G7.16; G7.17; G8.5)

- Phytoplasma pathogens – 10 publications (G7.2; G7.3; G7.5; G7.9; G7.12; G8.2; G8.6; G8.7; G8.8; G8.10)

- Fungal pathogens and other pests such as insect pests, plant nematodes, etc. – 14 publications (G7.4; G7.6; G7.7; G7.8; G7.10; G7.11; G7.13; G7.14; G7.18; G8.1; G8.3; G8.4; G8.9; G8.11)

The presented reference shows the variety of plant pathogens with which the candidate has worked, with a focus on viral and phytoplasma pathogens, but also with a not small share in the study of other plant pests, which speaks of versatile professional experience and expertise.

Also worthy of attention is the monograph presented by the candidate on the topic "Virus, phytoplasma and bacterial diseases of the grapevine. Description, symptoms, identification methods". The author has structured the monograph into three main parts, in which the collected information on viral diseases, phytoplasma and bacterial diseases of the vine is summarized and analyzed respectively. Each part includes a description of the disease symptoms, a description of the causal agents of these diseases, the methods of diagnosis of the relevant diseases and the species determination of the causal pathogens. The part of phytoplasma diseases of the grapevine occupies the largest share of the monograph, which is dictated by the growing importance of this group of diseases in general on agricultural crops, incl. and by the vine, as well as by the scientific and professional interests of the author. The monograph presented by Ch. Assist. Prof. Zhelyu Avramov, represents a serious scientific work, which has been a valuable help for students in the discipline of phytopathology, specialists in the field of plant pathology of vines and farmers.

The presented monograph covers the minimum required 100 points under indicator group "V".

The indicated and peer-reviewed publications according to the point system collect 287.59 points and exceed the required 200 points by indicator group "G" - articles and reports published in refereed scientific publications and in non-refereed journals, according to Appendix 1.4 under Art. 60, para. 4 item 8 and art. 65a, para. 4 of RDAS in FU.

I value the submitted publications of the candidate as proof of versatile and high-quality scientific research activity focused in current directions, with significance for the theory and practice in the field of plant protection and phytopathology in particular.

4.3. Reflection of the candidate's scientific activity in the literature (citability)

The scientific activity of the candidate is extremely well referred in the scientific literature, evidence of which is the numerous citations of the author's publications in scientific publications. A total of 53 citations of the publications are presented, more than half of which (35, out of the required 15) are in scientific publications referenced in world-renowned databases, and the rest are in monographs and peer-reviewed collective volumes (12, out of the required 10) and in non-refereed peer-reviewed journals (6, with 5 required). The total number of points that the candidate collects

under indicator group "D" - citations, is 675, which many times exceeds the required 50 points under this indicator group.

4.4. Contributions in the candidate's works (scientific, scientific-applied, applied)

The scientific contributions are related to new pathogens discovered, identified and proven or new hosts in Bulgaria of phytoplasma, viral and fungal pathogens already known to science, new vectors of phytoplasma pathogens have been found and the species composition and distribution of soil borne fungal pathogens on cereal crops in Bulgaria has been studied with. The following specific scientific contributions stand out:

- Cucumber (*Cucumis sativus* L.) was found to be a natural host of TSWV, causes leaf bronzing do tomato and the role of the vector *Franclinella occidentalis* in the transmission of the disease was proven (G7.1);
- The presence of Tomato Brown Rugose Fruit Virus (ToBRFV) was proven in tomato seeds and plant samples of tomatoes (*Solanum lycopersicum* L.) and pepper (*Capsicum annuum* L.) in new areas of the territory of Bulgaria (G7.17);
- For the first time in Bulgaria, Stolbur phytoplasma was detected on the cherry (*Prunus avium* L.) and phytoplasma infection was found in a weedy plant - the convolvulus (*Convolvulus arvensis* L.) (G7.2);
- Identified for the first time in Bulgaria is the phytoplasma organism 'Candidatus Phytoplasma solani', causing sudden wilting of lavender (G7.12);
- The oomycete pathogen *Phytophthora pseudocryptogea* was detected in raspberry plantations for organic production (G7.14);
- A new for the country fungal pathogen on lettuce was established - *Phylosticta lactucae* Brezchnew. (G8.1);
- The influence of abiotic factors on the development of fungal soil borne pathogens from the genera *Verticillium*, *Botrytis*, *Alternaria* and *Septoria* during lettuce cultivation was studied (G7.6, G7.8);
- New vectors of phytoplasma infections have been identified in Bulgaria. The cicadas *Fiebiriella florii* and *Cicadella viridis* have been shown to be vectors of Bois Noir (G8.2);
- The species composition and distribution of soil borne fungal pathogens on cereal crops in Bulgaria was studied, where it was shown that among the most widespread soil pathogens on cereal crops in our country are fungi of the genus *Fusarium*, including the species *F. oxysporum*, *F. graminearum* and *F. culmorum* (G7.4).

There are four scientific-methodological contributions related to the development, validation and application of methods for the laboratory identification of viruses, phytoplasma, bacterial and fungal pathogens in various agricultural crops, including:

- molecular protocols for conventional PCR and Real time PCR analyzes for a target group of pathogens (V3.1, G7.3, G7.5, FG7.17, G8.5);
- serological protocols for identification of viral and bacterial pathogens (V3.1, G7.15);
- application of semi-selective media for the identification of pathogenic bacteria of the genus *Agrobacterium* in laboratory conditions (V3.1);
- sequence analyzes of specific genes of the pathogens for species, group or genus affiliation of the isolates (V3.1, G7.12, G8.2).

The scientific-applied contributions are four in number and relate to a description of the symptoms of diseases caused by viral, phytoplasma, bacterial and fungal pathogens, as well as their vectors and hosts, and more specifically the following can be mentioned:

- The most widespread virus infections on the grapevine in Bulgaria were confirmed (GFkV, GLRaV3 and GFLV), whereby GFkV is most characteristic of the "Merlot" variety (V3.1,

- G8.6); "Merlot" and "Cabernet Sauvignon" varieties are most affected by leaf curl. "Cabernet Sauvignon" and "Mavrud" varieties with GFLV (V3.1), and "Cabernet Sauvignon", "Merlot" and "Chardonnay" varieties – with ArMV (V3.1).
- Flowering symptoms of various stone fruit species after plum pox infection (PPV) are described for early diagnosis purposes (G7.16)
 - It has been confirmed that the causative agent of plum rust, *Tranzschelia pruni-spinosae*, can overwinter on trees in plum orchards and serve as a permanent source of infection. (G8.3)
 - The ways of using the repellent "Porokol" as plant protection measures against wild animals in the production of corn and potatoes near forest massifs in the semi-mountainous and mountainous regions of Bulgaria are indicated (V3.1, G7.4, G7.7, G7.12, G7.16, G7.18, G8.3, G8.6).

I appreciate the scientific, scientific-methodological and scientific-applied contributions as fully corresponding to the specialty announced in the competition.

5. Evaluation of the candidate's personal contribution

Ch. Assist. Prof. Zhelyu Avramov directly and personally participated in the implementation of the experimental activity that led to the results presented in the mentioned contributions. He has a leading role in the majority of the conducted research and in their reflection in the presented scientific production. He is extremely active in the development of methodological issues leading to the validation and application of methods for the laboratory identification of plant pathogens. He actively leads and participates in the collection and analysis of plant samples from different regions of the country, where plant protection problems have been identified in various agricultural crops. The accumulated knowledge and experience in solving real problems in agriculture contribute to the extremely broad teaching activity of the candidate. He actively participates in the development and updating of curricula for the disciplines he teaches. He personally supports the development of students in FU until the completion of their studies as graduate specialists in plant protection, assisting them with organizational and administrative issues arising during their studies. He takes great care to ensure that the practices he leads contribute to increasing the students' knowledge capacity and are useful in their future professional activities. As a teacher from the "Plant Protection" department, he actively and constantly participates and helps to resolve current issues of a professional and organizational nature and maintains a good collegial atmosphere in the department.

It follows from everything that has been said that Ch. Assist. Prof. Avramov is an established scientist and teacher in the discipline "Phytopathology".

6. Critical notes and recommendations

I recommend to Ch. Assist. Prof. Zhelyu Avramov to be more expeditious in publishing his scientific results, and if possible in scientific journals with a higher impact factor, which corresponds to their significance. In the future, it will be better if he will even more persistently seek and join international research teams and actively participate in international scientific projects. I also recommend Ch. Assist. Prof. Avramov to take over the supervision of a PhD student in the scientific specialty "phytopathology", to whom he would at least partially transfer the accumulated knowledge and experience.

7. Personal impressions

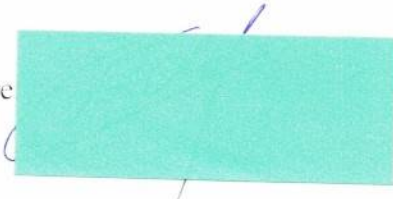
My initial personal impressions of Ch. Assist. Zhelyu Avramov are from the time when he worked in the Central Plant Quarantine Laboratory in the city of Sofia, for an erudite expert extremely strict in the application of the used methods. My initial personal impressions were enriched by my direct impressions that I have from our joint teaching and research activity after I moved to work in the Department of Plant Protection at the AF of FU. This allowed me to work closely with a loyal, frank and always ready to help colleague, incredibly committed to improving

the quality of his teaching work, without neglecting his research and practical work. The accumulated practical experience Ch. Assist. Prof. Avramov includes and skillfully uses in teaching the students. He himself steadily increases his professional capacity by researching and popularizing novelties in the field of phytopathology.

8. Conclusion

Bearing in mind the high level of the results presented by the candidate and on the basis of the overall comprehensive assessment of his research and teaching activities, I SUGGEST the candidate Ch. Assist. Prof. Dr. Zhelyu Georgiev Avramov to take the academic position of "docent" in the discipline "Phytopathology" from PN 6.2. Plant protection.

Reviewer Signature

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The review was submitted on: 4/1/2024.