REVIEW

on the materials for participation in a competition for the academic position "Assoc.Prof.", 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 a 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. Chief Assist. Dr. Zhelyu Georgiev Avramov

Reviewer: Prof. D.Sc. Rossitza Borissova Batchvarova - member of the scientific jury for PD 6.2 "Plant protection", according to Order No. ZPS-67/14.02.2024 of the Rector of University of Forestry

1. Brief biographical data about the candidate

Dr. Zhelyu Georgiev Avramov, Chief Assis., was born on 26/12/1967. In 1992, he graduated from the Higher Agricultural Institute, Plovdiv (AU, Plovdiv) with a specialty in "Plant and Soil Protection", engineer agronomist. In the period 1993-1996, he was the chief specialist in the Department of Phytopathology at the Central Plant Quarantine Laboratory, from 1996 to 2006 he was the chief expert in the same department, and in the period 2006 to 2011 he was a head of the department.

From 2011 to 2015, he was the head of the "Phytopathology and FBA" department at the Central Plant Quarantine Laboratory, Bulgarian Food Safety Agency.

In 2014, the candidate defended a dissertation in scientific field 6. Agricultural sciences and veterinary medicine, Professional direction 6.2. "Plant Protection", Scientific specialty "Phytopathology" on the topic: "Phytoplasmic agents of yellows on the vine (*Vitis vinifera* L.). Methods of diagnosis" and received the educational and scientific degree "Doctor".

From 2015-2017, Dr. Zhelyu Avramov was elected as an assistant at FU - Faculty of Agronomy - Department of Plant Protection, and from 2017 until now he is a Chief Assistant at the same department.

He is a member of the Union of Scientists in Bulgaria since 2013, and since 2007 he has been a member of the Bulgarian Association of Agronomists. He is also a member of the American Phytopathological Society (APS) since 2005.

2. Conformity of the applicant's submitted documents and materials with the requirements according to the Regulations for ASG at FU.

Dr. Zhelyu Avramov has presented summarized and objective information about the scientometric indicators, according to the minimum national requirements of the LDASRB and the Regulations for the implementation of FU, Sofia for the acquisition of the academic position of "Associate Professor":

• Indicator A - minimum requirements - 50 points, presented materials for 50 points
• Indicator B - minimum requirements - 100 points, presented materials - 100 points
• Indicator D-minimum requirements- 200 points, presented materials for 287.59 points
• Indicator D - minimum requirements - 100 points, presented materials - 675 points
• Indicator E – there are no requirements, but materials for 145 items are presented
• Total number - minimum requirements for the position of "Associate Professor"- 400 points, and the materials presented by the candidate are 1227.59 points

It can be seen that the scientometric indicators of the Dr. Zhelyu Avramov fully covers and even exceeds three times the national minimum requirements for holding the academic position of "Associate Professor".

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

During the period 2015-2017. the candidate led lectures and exercises on disciplines to students from the Bachelor's course of Agriculture, majoring in Agronomy and Plant Protection, and the Master's course of Agriculture, majoring in Plant Protection, in regular and extramural students. Delivers lectures on the disciplines: "Legislation in PP" and "Agroecology"- EQD "Bachelor", specialty "PP". Leads exercises in the disciplines: "General Phytopathology", "Agricultural Phytopathology", "Forecast and Signaling", "Agroecology" and dicipline "Phytopathology", for specialty "Agronomy" at the Bachelor's course.

Since 2017, as a Chief Assistant, he became the holder of the disciplines "Phytopathology" (from 2022) for EQD "Bachelor" majoring in "Agronomy" and "Forecast and Signaling" for EQD "Bachelor" majoring in "Plant Protection". Guide to practical training in the disciplines "Phytopathology", "General Phytopathology" and "Agricultural Phytopathology" (in the period 2015 - 2023). He conducts lectures and exercises in disciplines for students for EQD "Bachelor" course majoring in "Agronomy" and "Plant Protection" and for EQD "Master" course in majors "Pest Control and Management", "Control and Management of Plant Protection Products", " Precision agriculture" and "Ecological management of crop pests" in regular and extramural form of education.

In addition, Dr. Zhelyu Avramov was a mentor to students from FU and SU - "Molecular Biology" major under the program "Student Internships 2013-2014" and Project BG05M20P001-2.002-0001 of the Ministry of Education and Science "Student Internships - Phase 1" funded from OP SEIG - 2018.

He was a mentor to a young scientist to support his research activities within the framework of Project BG05M2OP001-2.009-0034 "Support for the development of scientific capacity in a Forestry University", funded by OP "Science and education for intelligent growth", co-funded by the European Union through the European Structural and Investment Funds - 2018. He is also an academic mentor of students from FU majoring in "Research" and "Agronomy" for Project BG05M2OP001-2.013-0001 "Student internships - Phase 2.

Dr. Zhelyu Avramov, visited the University of Agronomic Sciences and Veterinary Medicine (USAMV) in Bucharest, Romania from 14- 28.11.2022 under project BG05M2OP001-2.016-0022 "Modernization of higher education for sustainable use of natural resources in Bulgaria", funded by OP "Science and education for intelligent growth" and presented lectures to the students there.

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

- **Participation in international projects**

Dr. Zhelyu Avramov participated in the development of five international projects:

• Project BG98/IB/AG02 - "Improvement of the phytosanitary control, the registration of plant protection products and the control of their residues and, setting up of a system for the control and certification of organic production";

• Project BG9913.02.03 - "Construction of a greenhouse for indicator plants for the needs of CLPQ";

• Project BG01-AG-01-A "Improving phytosanitary control & plant protection" – supply of the long-term BIP's equipped with laboratory and IT equipment".

• Project BG/2007/IB/AG/01/TWL - "Improvement of phytosanitary control in Republic of Bulgaria".

• Project 2020-1-R001-KA203-080398 - Enhancing practical skills of horticulture specialists to better address the demands of European green Deal Initiative" Hort4EUGreen"), funded by Erasmus+ Program.

The candidate also participates in the preparation of a tender technical specification and is an evaluator for approving the supply of laboratory equipment under the PHARE Program.

Participation and leadership in national projects

Dr. Zhelyu Avramov is the head of one scientific project and participated in the development of four projects funded by FU.

Also he participated in 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".

He also participates in international scientific networks Eufresco research topics:

• 2021-A-377 Infrastructure for sharing infested seed lots for test development and validation.

• 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.

Missions

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

4.2. Characteristics of published scientific results

In the competition for "docent" Dr. Zhelyu Avramov participated with a total output of 36 scientific works in the nomenclature specialty, of which 35 publications and one monograph. Scientific publications and monograph, related to the competition and subject to review - are 30. From them:

• One monograph "Virus, phytoplasma and bacterial diseases of the vine"

• Scientific publications in refereed and indexed editions in world-famous databases with scientific information Web of Science - 18 items. (60%), taking 5 pcs. have an impact factor (IF), and 2 of them are in quartile Q3. The total IF of the publications in this section is 2.328.

• Articles and reports published in non-refereed peer-reviewed journals or published in edited collective volumes are 11.

• Publications in magazines - 6 nos. (Agricultural Science and Technology, Acta Oecologica Carpatica, Management and sustainable development and Plant protection);

• Publications in proceedings of congresses, symposia and conferences - 5 nos.

Of the specified 30 scientific papers Dr. Zhelyu Avramov participated independently in 1 published monograph and in 4 scientific articles (10.6 %), first author he is in 9 nos. (30.0 %), second in 6 nos. (20%), third and subsequent author in 3 nos. (16.6 %). This proves his ability to work both, independently and in a team. Out of 30 publications, 25 nos. (80.3 %) were published in English and 5 nos. (10.6 %) in Bulgarian.

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

The total numbers of presented citations of scientific publications by Dr. Zhelyu Avramov are 53 pcs. Thirty five citations of his scientific works in scientific publications referenced and indexed in world-renowned databases were found. Citations in peer-reviewed monographs and collective volumes are 12, and citations in non-refereed peer-reviewed journals are 6.

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

I am extremely impressed by the presented monograph, by Dr. Zhelyu Avramov: "Virus, phytoplasma and bacterial diseases of the grapevine". It includes a description of the main pathogens, leading to these diseases, the symptoms, the methods of their diagnosis and taxonomy (classical and molecular). The emergence of ELISA and PCR methods after the 1980's greatly accelerated the identification of pathogens and their more accurate taxonomic affiliation, as well as restructured the classification of viruses, phytoplasmas and bacteria on vines.

Based on a large number of analyzes and a long survey period (2005 - 2022), the author has studied and described a number of viral, bacterial and phytoplasma infections (and their vectors) on the grapevine in Bulgaria. The response of wine and dessert grape varieties, to viral, phytoplasma and

bacterial pathogens has been described. More than 700 publications from Bulgarian and foreign authors are cited.

The entire monograph is enriched with very good pictures, figures, tables and detailed protocols for the diagnosis of vine pathogens.

In addition, this monograph made a strong impression on me in terms of content proving to be a valuable aid to vineyard farmers, plant protection specialists and students.

Scientific contributions

1. Established, identified and proven new pathogens and their hosts in Bulgaria:

• It has been established that the cucumber (*Cucumis sativus* L.) is a natural host of tomato spotted wilt virus (TSWV) and the role of the vector *Franclinella occidentalis* as a vector of the disease was studied (G7.1)

• The spread of Tomato Brown Rugose Fruit Virus (ToBRFV) in tomato seeds and plant samples of tomatoes (*Solanum lycopersicum* L.) and pepper (*Capsicum annuum* L.) has been proven in new areas for Bulgaria (G7.17)

• Stolbur phytoplasma on cherry (*Prunus avium* L.) was proven for the first time in Bulgaria and a phytoplasma infection was found in weed vegetation (in the case of *Convolvulus arvensis* L.) (G7.2) and a phytoplasma infection in lavender with the causal agent '*Candidatus* Phytoplasma solani' (G7.12)

• The fungal pathogen *Phytophthora pseudocryptogea* was found in the raspberry plantations of the "Lyulin" variety in the orchards for organic production and a new for the country fungal pathogen on lettuce (*Phylosticta lactucae* Brezchnew, (G8.1). The fungal pathogens were also studied *Verticilium*, *Botrytis*, *Alternaria* and *Septoria* spp. (D7.6, D7.8)

2. New vectors of phytoplasma infections were found in Bulgaria and the transmission of Bois Noir in viruphorous individuals of the cicadas *Fiebiriella florii* and *Cicadella viridis* was proven (G8.8).

3. The species composition and distribution of soil-borne fungal pathogens of the genus *Fusarium* on cereal crops in Bulgaria were studied. It was found that the most widespread species were *F. oxysporum*, *F. graminearum* and *F. culmorum*, constituting respectively 32%, 22% and 17% of the total number of pathogenic isolates (G7.4)

Scientific and methodological contributions

1. Various methods have been developed, validated and applied for the laboratory identification of viruses, phytoplasma, bacterial and fungal pathogens in different crops:

• molecular protocols through interlaboratory tests (G7.3), which are applied to universal and target-specific pathogens through conventional PCR (G8.5) and Real time PCR analyzes (B3.1, G7.5, G.7.17)

• serological protocols for identification of viral and bacterial pathogens (B3.1, G7.15)

• using in laboratory conditions of semi-selective media for the identification of pathogenic bacteria of the genus *Agrobacterium* (B3.1)

• sequencing analyzes of specific genes of pathogens for species, group or genus affiliation of isolates from different pathogens (B3.1, G7.12, G8.2)

Scientific and applied contributions

1. The external symptoms of diseases caused by viral, phytoplasma, bacterial and fungal pathogens, their hosts and vectors are described. (B3.1, G7.4, G7.7, G7.12, G7.16, G7.18, G8.3, G8.6)

• It has been confirmed that GFkV, GLRaV3 and GFLV) are the most widespread viral infections on the vine in Bulgaria, and the most typical for the "Merlot" variety is GFkV (B3.1, G8.6); Merlot and Cabernet Sauvignon varieties are most affected by leaf curl, with GFLV - the red wine varieties Cabernet Sauvignon and Mavrud (B3.1), and with ArMV - Cabernet Sauvignon, Merlot varieties and Chardonnay (B3.1)

• The visual symptoms of flowering in various stone fruit species after plum pox infection (PPV) are described for early diagnosis purposes (G7.16)

• After studying the pathogen *Tranzschelia pruni-spinosae*, the causative agent of plum rust, it was confirmed that the pathogen can overwinter on trees in plum orchards and serve as a constant source of infection (G8.3)

• Based on the two-year results of the study on the use of the Porocol repellent in organizing and conducting plant protection measures in the production of corn and potatoes in the semi-mountainous and mountainous regions of Bulgaria, its use is recommended (G7.11)

5. Evaluation of the candidate's personal contribution

The submitted materials for the competition for the academic position "Associate Professor" are undoubtedly the work of Dr. Avramov. The candidate's personal contribution is clearly expressed in the scientific production presented for the competition. Regardless of whether he is first or next author, it is clear that he has a leading role in research. As a teacher, he has made a significant contribution for the development and raising the level of the "Plant Protection" department at the AF of FU, Sofia. From the presented scientific contributions, documents on the competition, his scientific and teaching activity prove that he is a prominent phytopathologist and teacher who is respected and valued by his colleagues and students.

6. Critical notes and recommendations

I have no critical notes and recommendations for the candidate.

7. Personal impressions

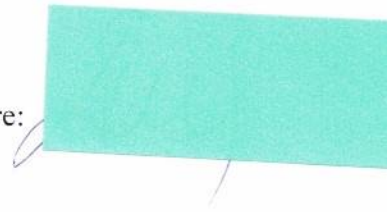
I know Dr. Zhelyu Avramov since 2014 during the defense of his dissertation. He possesses many positive qualities as a scientist and colleague, knows how to work in a team, has an extensive experience and the necessary knowledge in laboratory diagnostics and organization and management of laboratory activity in the field of phytosanitary control and plant protection. He has an excellent communication with scientists and farmers. Dr. Avramov has very good experience in plant virological laboratory diagnostics (nepoviruses, tospoviruses, potyviruses, tobamoviruses, phytoplasmas) and molecular analyzes (DNA extraction, PCR and DNA hybridization).

My impressions are that he is extremely responsible for scientific and teaching activities and a very good scientist and teacher.

8. CONCLUSION

Based on the analysis of the pedagogical and scientific activity of the candidate, I believe that Dr. Zhelyu Georgiev Avramov, fully meets the requirements for an "Associate Professor" under the LDASRB and the Regulations of FU for its application. He significantly exceeds the requirements for occupying this academic position, with a clearly expressed active teaching and scientific activity, original scientific and scientific-applied contributions, participation and management of projects and students.

All this gives me a reason to positively evaluate the overall scientific activity and I SUGGEST the candidate Dr. Zhelyu Georgiev Avramov to take the academic position "Associate Professor" in the discipline "Phytopathology" from PD 6.2. Plant protection at FU, Sofia.

Reviewer Signature: 

Review submitted to: 30/03/2024