

on the materials for participation in the competition for occupation of the academic position "Professor", field of higher education 6. Agrarian Sciences and Veterinary Medicine, Professional field 6.5. Forestry, scientific specialty "Forest Melioration, Forest Protection and Special Forest Uses ", in the discipline "Forest phytopathology", announced by the University of Forestry, SG. 37 / 7.5.2019, procedure code ELA-P-0419-08

Applicants to the competition are:

1. Assoc. Prof. Sonya Hristova Bencheva, PhD

Prepared by: Rumén Ignatov Tomov, PhD, Professor in professional field 6.2 Plant protection from the University of Forestry

1. Brief biographical data of the applicant

Assoc. Prof. Sonya Hristova Bencheva graduated from the Higher Forestry Institute, Sofia in 1982 and became a forestry engineer - conservation and enrichment of the natural environment. In 2001, she obtained a PhD at the University of Forestry, defending a dissertation "A Study on the growth and resistance of poplar clones with a view to the possibilities of early selection."

She began her work experience in 1982 as an expert on environmental protection at the Municipality of Cherven Bryag. During the period 1984-1996 she worked at the Research Station for fast-growing forest-tree species - Svishtov as a research associate 3rd degree on "Genetics, selection and introduction of poplars and willows" and a research associate of the 2nd degree on "Plant protection". Since 1996 she has been working at the University of Forestry as a senior and chief assistant, and since 2004 she is an associate professor in the speciality "Forest Melioration, Forest Protection and Special Forest Uses" (forest phytopathology).

From 2016 until now she is the Head of the Department of Plant Pathology and Chemistry.

From 1999 until now she is a member of the National Forest Protection Committee at the EFA-MAF.

Assoc. Prof. Bencheva has participated in 21 research and applied projects. She is an author of 46 scientific articles, 14 monographs, books and papers, and 2 textbooks. The scientific results published in 24 of her articles have been reflected in the scientific literature with 63 citations.

2. Compliance of the submitted documents and materials of the applicant with the required ones in accordance with the Rules for RDAS at the University of forestry (UF).

The submitted documents and materials of Assoc. Prof. Bencheva are in compliance with the requirements of the RDAS Rules of the UF. The submitted materials exceed the minimum required points by groups of indicators for occupation of the academic position "Professor" for Professional field (PF) 6.5. Forestry. Assoc. Bencheva completed 948.5 points with a required 550.

3. Assessment of the applicant's educational activity

Since 1996 Assoc. Prof. Bencheva has been a lecturer in forest phytopathology at the University of Forestry. She is an author and holder of 7 teaching courses for Bachelor, Master and PhD students as follows: (1) EDP "Bachelor", Forestry – "Forest Phytopathology", "Fundamentals of Agroforestry", EDP "Bachelor", EEP "Fundamentals of Plant Protection", module Phytopathology; (2) EDP "Master", Forestry "Forest protection", module

Phytopathology, "Agroforestry Systems"; EDP "Master", EEP "Integrated systems of plant protection", module Phytopathology, "Sustainable Land Use"; EDP "Master" AGR and PP – "Pests on Forest and Ornamental Plants", Module "Forest Phytopathology" (3) ESD "Doctor" EEP "Phytopathology".

Assoc. Prof. Bencheva is an author of the textbook "Forest phytopathology" for students of the University of Forestry studying the disciplines: "Forest phytopathology", "Forest protection", "Introduction of plant protection", "Integrated methods of plant protection", "Forest protection". She is a co-author of the textbook Agroforestry for students from the Forestry University studying the subjects "Fundamentals of Agroforestry", "Agroforestry Systems", "Agroforestry" and "Sustainable Land Management". She is also co-author of two teaching aids, which are valuable teaching aids for both students and practitioners.

He was a supervisor of two PhD students, one of which was deducted with the right of defense, as well as 66 Ph.D. graduates. She has participated in the State Examination Committees for the state examination of Bachelor's Degree Program and for the defense of diploma paper of Bachelor's Degree and Master's Degree, specialty Forestry from 2013 to 2019. She has participated 6 times in a scientific jury.

4. Assessment of the applicant's scientific, applied and publication activities

4.1. Participation in scientific, applied and educational projects

Assoc. Prof. Bencheva has participated in 6 national research projects, two of which have been led by Assoc. Prof. Bencheva. She was actively involved in the ICP Forests "Assessment and Monitoring of air pollution effects on forests - Level I and Level II"

4.2. Characteristics of published scientific results

Assoc. Prof. Bencheva participates in the competition with 39 published works, as follows: Habilitation work - monograph - 1; Articles and reports published in scientific journals, abstracted and indexed in world-renowned databases of scientific information - 6; Articles and reports published in non-refereed scientific peer-reviewed journals or in edited collective volumes - 22; Studies published in edited collective volumes – 2, Published chapter of a collective monograph - 4; Published university textbook - 4.

The scientific publications are 28 and they were published in: 7 scientific journals, one of which is foreign; 2 scientific works and 6 proceedings of scientific forums, two of which were abroad. One of the publications is published in Impact factor magazine and five in Scientific Impact rank magazine. Twelve of them are published in foreign language.

4.3. Reflection of the applicant's scientific activity in the scientific literature (Citation)

The scientific results of Assoc. Prof. Bencheva have received wide response in Bulgaria and abroad. A total of 41 citations to 24 of her works have been noted, as follows: in refereed journals - 23, in non-refereed journals – 13, in conference proceedings – 5.

4.4. Contributions to the applicant's work (scientific, scientific-applied, applied)

Assoc. Prof. Bencheva's **scientific contributions** are indisputable and can be summarized in the following 4 directions: (1) Forest phytopathology, (2) Wood-destroying fungi, (3) Forest entomology and (4) Agroforestry.

1. Forest phytopathology

The scientific results of Assoc. Prof. Bencheva in this field have been published in 12 publications (№№5, 7, 12, 13, 22, 24, 26, 27, 29, 33, 36 and 39). The major scientific contributions are: (1) The following fungal diseases have been reported as new to Bulgaria - *Cryptostroma corticale* (Ellis & Everh.) (Greg. & S. Waller), *Delphinella abietis* (O. Rostr.) E. Müll., *Scolicosporium camposperma* (Peck) Höhn., The disease of scabies is established on a new host for Bulgaria (*Sorbus aria* L.); (2) For the first time in Bulgaria a mass staining on the leaves of *Ligustrum vulgare* L. from *Ramularia ligustrina* Maubl has been detected and the species composition of the fungi causing the staining of the coniferous wood and their relationship with the birch bark beetles in Maleshevska Mountain were studied; (3) The pathogenicity of *C. chrysosperma* and *F. oxysporum* isolated from symptomatic poplar plant material along the Iskar River has been confirmed; (4) The growth of poplar crops by cultivars *P. agathe* F and P. I 45/51 has been determined on floodplain and non-floodplain areas.

2. Wood destroying fungi

The scientific results of Assoc. Prof. Bencheva in this field are published in 11 publications (№№. 1, 15-20, 23, 28, 34 and 37). Significant are the scientific contributions from the research on the wood-destroying macromycetes of fruit and forest tree species in Bulgaria. The most significant scientific contributions are as follows: (1) 40 fungi species have been identified on fruit tree species. (2) The phylogenetic, organotropic and age specialization as well as the degree of parasitic activity of the species were analyzed; (3) As a result of a large-scale study of forest tree species in the Vitosha, Stara Planina, Sredna Gora, Rodopi, Strandzha, Plana, Lozenska, Maleshevska, Ograzhden, Belasitsa, Rila and Pirin mountains, as well as in the green areas of the town Sofia, a total of 225 fungi species have been identified; (3) There are significant contributions from studies of macromycetes on common beech and dead wood.

3. Forest entomology

The scientific results of Assoc. Prof. Bencheva in this field are published in 5 publications (№№ 3, 4, 6, 21 and 25). The most significant scientific contributions are as follows: (1) *Callidium coriaceum* Paykull (Coleoptera: Cerambycidae), was first reported in Bulgaria in its southernmost habitat in Europe. (2) For the first time in Bulgaria and the Balkan Peninsula, the subfamily Histeromerinae, genus *Histeromerus* Wesmael and the species *H. mystacinus* Wesmael have been reported; (3) As a result of study in spruce forests in three Bulgarian mountains (Vitosha, Lyulin and the Western Rhodopes) new for the fauna of Bulgaria and for the Balkan Peninsula, predators on *Ips typographus* - *Medetera pinicola* and *L. fugax* have been reported. The species *Coeloides bostrichorum* and *Dendrosoter middendorffii* have been identified as new for Bulgaria parasitoids of *I. Typographus*. New locality in the country has been established for *Roptrocerus xylophagorum*; (4) 101 longhorn beetle species (Coleoptera: Cerambycidae) have been recorded in Vitosha Nature Park and 22 of them have been also found in the Bistrishko Branishte Biosphere Reserve. New host plants have been recorded for three longhorn beetle species; (5) The study on the species composition and distribution of leaf-mining insects in beech forests in Western Bulgaria revealed the widespread distribution of *Orchestes fagi* L. (Coleoptera), followed by *Phyllonorycter maestingella* Muller and species from family Nepticulidae (Lepidoptera).

4. Agroforestry

The scientific results of Assoc. Prof. Bencheva in this field are published in 4 publications (№№. 2, 8, 9, 10). The most significant scientific contributions are as follows: (1) The current conditions in Bulgaria have been found to be favorable for the development of agroforestry due to the existing socio-economic and environmental conditions, (2) it has been established that the allelopathic interaction between the poplar and barley in the early stages of their development is negative, which makes their co-cultivation unsuitable for agroforestry, but co-cultivation of poplar and peas for the establishment of agroforestry systems may be recommended, (3) The roots of barley and black pine have been found to have the most favorable influence on the presence of the spear and peas as nitrogen fixers.

Assoc. Prof. Bencheva's research in the field of forest phytopathology, wood destroying fungi, forest entomology and agroforestry also have indisputable **scientific-applied contributions** of great importance to the practice. Its participation in the ICP "Assessment and Monitoring of the Impact of Polluted Air on Forest Ecosystems - Level I and Level II" significantly contributed to published summaries and analyzes (№№ 30, 31 and 35). Assoc. Prof. Bencheva has made a significant contribution to the compilation of information and promotion of agroforestry in Bulgaria, as a result of which agroforestry training was launched at the University of Forestry and other Bulgarian higher education institutions. Significant are its scientific and applied contributions in the field of agroforestry.

The most significant scientific - applied contributions of Assoc. Prof. Bencheva are the following: (1) A forest pathological evaluation of beech stands in the Western Balkan Range has been made; (2) As a result of the assessment of the health status of coniferous stands in Bulgaria, a system of forest management, preventive and organizational measures has been proposed, aimed at suppressing pest plague and improving the sanitary and health status of forests; (3) Bark necrosis in poplar crops along the basins of major inland rivers in Bulgaria has been studied; (4) A permanent general deterioration of the status of the oaks in the plantation has been found in the Blagunovo-Cero ecosystem, Staro Oryahovo Hospital for the period 2003-2007; (5) It has been established that the phytosanitary status of the investigated *Fagus orientalis*, Hungarian oak, and *Quercus cerris* plantations in the Western Balkan Range for the period 2010-2016 is good, except for the beech plant located in the Belogradchik region. White pine culture in the Godech region in 2015 was strongly affected by an abiotic factor (snowball); (6) The abiotic factors have been found to be of major importance for the phytosanitary status of the studied plantations in the southern slopes of Stara Planina, Sredna Gora, the eastern and northern slopes of Vitosha, the northern and eastern slopes of Rila and Planina for the period 2008-2017; (7) A technological scheme has been developed for the establishment and cultivation of short-lived willow plantation, which aims to integrate the production of biomass with a protective effect against adverse environmental factors in adjacent crops (wheat, maize, peas and alfalfa); (8) The types of mushrooms most suitable for cultivation and the technologies for their extensive and intensive cultivation have been examined and described;

(9) On the basis of their own research and analysis of scientific information, teaching aids, studies and monographs have been published which are valuable aids for both students and practitioners – "The Forest Protection Guide", "Forest Phytopathology", "Atlas of Wood-destroying fungi", "Wood-destroying fungi", "Agroforestry".

5. Assessment of the applicant's personal contribution

Assoc. Prof. Bencheva's personal involvement in the scientific and applied projects and the published materials is indisputable. She is a first author of 16 of the published materials (№№1,5,7,8,11,13,19,20,22,23,27,32,33,34,35,39), second author of 12 papers (№№2,3,4,9,10,12,14,21,24,25,29,37), and third and next author of 11 papers (№№6,15,16,17,18,26,28,30,31,36,38). Most of the publications are as a result of the implementation of joint projects, two of which have been led by Assoc. Prof. Bencheva.

6. Critical notes and recommendations

I have no critical comments on the submissions

7. Personal impressions

Based on my professional contacts with Assoc. Prof. Bencheva, I would define her as a highly motivated and focused teacher, researcher and expert in the field of forest protection against diseases and pests. She is one of the leading specialists in forest phytopathology, wood destroying fungi and agroforestry in Bulgaria.

8. Conclusion

I SUGGEST the candidate Assoc. Prof. Sonya Hristova Bencheva, PhD, to occupy the academic position of "Professor" in the discipline "Forest Phytopathology" of professional field 6.5. Forestry.

Prepared by:

Prof. Rumen Tomov RND

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