

STATEMENT

on the materials for participation in a competition for the academic position of "Associate Professor", field of higher education 4. Natural Sciences, Mathematics and Informatics, PF 4.4. Earth sciences, scientific specialty "Ecology and protection of ecosystems", in the discipline "Microbiology", announced by the University of Forestry in SG no. 27 / 2.4.2021, procedure code FOR-AsP-0321-54.

Candidates for participation in the competition are:

1. Chief Assistant Dr. Boyka Zdravkova Malcheva

Statement is prepared by:

Prof. Dr. Mariana Genova Doncheva - Boneva, Professor of PF 4.4. Earth Sciences from the University of Forestry

1. Brief biographical data about the candidate

Ch. Assistant Professor Dr. Boyka Zdravkova Malcheva was born on March 23, 1980 in the town of Sandanski. In 2003 she obtained a bachelor's degree from University of Forestry, specialty "Ecology and Ecosystem Protection". In 2005 she completed a master's program in "Settlement Ecology" and acquired a master's degree in ecology - also in University of Forestry. During her studies at University of Forestry, in the period 2002-2004 she acquires the professional qualification "teacher" in the specialty "Engineering pedagogy". In 2012 she defended a dissertation on "Soil-microbiological indicators for the establishment the status of anthropogenic soils in the Municipality of Sofia" and received PhD at the University of Forestry in the scientific specialty "Ecology and Ecosystem Protection".

In the period 2012-2018 she worked as an assistant, and from 2018 is a senior assistant at the Department of Soil Science at University of Forestry and conducts lectures and exercises in the disciplines: "Microbiology", "Microbiological control of the environment" and "Soil microbiology". In the period 2010-2019 she is a chief expert in the Sofia Regional Health Inspectorate as the work is related to chemical control of air pollutants, air at work, dust, soils and cosmetics, sanitary-microbiological control of food, water, cosmetics and industrial environment.

She speaks English, French and Russian. She has a qualification "Computer Operator" (presented Certificate of Professional Qualification). Good command of Microsoft Office Word, Excel, Power point, GIS, Internet.

She is a member of the Board of Directors of the non-governmental organization "Continuing Education" - a branch of the Japanese organization "Nomura - Integrated Lifelong Learning".

2. Conformity of the submitted documents and materials of the candidate / s with the required ones according to the Regulations for Development of the Academic Staff (RDAS) in University of Forestry

Presented by Ch. Assistant Professor Dr. Boyka Zdravkova Malcheva documents for participation in the competition for academic position of "Associate Professor" fully meet the number and content of the minimum national requirements included in the Regulations for the development of the academic staff of University of Forestry – 2019. The "Information-self-

assessment" submitted by the candidate for fulfillment of the minimum national requirements (under art. 60, paragraph 4 of RDAS of University of Forestry) includes information about the scientific and scientific-applied activity and is correctly filled in. It can be seen from the Information that Chief Assistant Dr. Malcheva exceeds the requirements for holding the academic position of "Associate Professor" in PF 4.4 "Earth Sciences" (Appendix to Article 1a, paragraph 1 of the Application of RDAS). She participates with 563.1 points with a required minimum of 400. The distribution of points by groups of indicators is presented in the table.

Indicator Group	Number of minimum points for "Associate Professor"	Completed number of points
A	50	50
B	100	100
G	200	321,1
D	50	92
Total	400	563,1

3. Evaluation of the teaching activity of the candidate

The educational employment of the chief assistant Dr. Boyka Malcheva includes conducting lectures and exercises in the disciplines "Microbiology" for students majoring in "Ecology and Environmental Protection", "Agronomy" and "Plant Protection" - for a bachelor's degree. In the master's program "Settlement Ecology" teaches the discipline "Microbiological control in the environment", and for the specialty "Forest Management" - the discipline "Soil Microbiology".

She is the author of a curriculum. She participated in the creation of a training laboratory. There are issued (printed) three manuals for exercises in co-authorship - 2 on "Microbiology" and 1 on "Microbiological control of chemical contamination of plant products and the environment" and one electronic on "Sanitary Microbiology". She is the supervisor of 2 graduates from TU-Varna, who have successfully defended their thesis.

4. Evaluation of the scientific, scientific-applied and publishing activity of the candidate

4.1. Participation in scientific, applied and educational projects

From the documents submitted under the competition it is established that Ch. Assistant Professor Dr. Boyka Malcheva has participated in scientific and scientific-applied projects and tasks, funded respectively - 8 from University of Forestry, 2 from TU Varna, 1 – Ministry of Agriculture, Food and Forestry, 8 - High-tech park - TU-Varna. All projects are in the field of competition, related to microbiological analysis, testing of various fertilizer products and more. The candidate also participates in 2 educational projects under OP "Human Resources Development" and OP "Science and Education for Smart Growth", co-financed by the European Social Fund of the European Union, developed at University of Forestry.

Ch. Assistant Professor Dr. Boyka Malcheva has participated in 8 national and international conferences and 21 courses and seminars for professional development, which are related to the main activities of the positions held (certificates attached).

4.2. Characteristics of the published scientific results

Ch. Assistant Professor Dr. Boyka Malcheva participated in the competition for AF "Associate Professor" with 31 scientific papers. The presented list of scientific papers also includes a dissertation (A1), the abstract on it and 6 pcs. publications related to the dissertation, which are not considered in the statement.

Among the scientific works with which the candidate participates in the competition for AF "Associate Professor" are included:

- Monograph entitled "Microbiological activity of soils in an urban ecosystem" (B3). The monograph presents data and analyzes from studies of the microbiological activity of roadside anthropogenic soils with different vegetation in the region of Povdiv.
- Published book based on the dissertation (G6).
- Publications - 29 pcs. publications in scientific journals, referenced and indexed in world-famous databases - 10 pcs. (G8) incl. 2 issues in journals with impact factor. Publications in unrefereed journals with scientific review or in edited collective volumes - 19 pcs.

From the presented publications it is established that those in a foreign language and in foreign journals predominate – 24 pcs. There are 5 independent publications, 4 with two co-authors and 20 with three or more co-authors, as in 10 of the collective works Chief Assistant. Dr. Malcheva is in the first place.

The presented scientific and scientific-applied works present data from studies in various fields, which are directly related to the announced competition.

The main direction of the scientific activity of Chief Assistant Dr. Malcheva (21 publications) covers studies to determine the microbiological and enzymatic status of anthropogenically affected soils in the cultivation of various crops (G8.4, G8.6, G8.7, G8.11, G8.12, G8.14, G8.15, G8.19), as well as in the development and application of compost and biochar (G7.5, G7.6, G7.7, G7.9); in case of reclamation of disturbed lands (G7.1, G7.2, G7.4); in the construction of wind turbines (G8.5); in case of heavy metal pollution (B3, G6, G8.1, G8.10, G8.13), as well as study of the microbiological status and enzymatic activity of soils in conditions of natural processes or phenomena (6 pcs.) - in coniferous crops (G8.16); in case of floods (G8.2, G8.3); in forest fires (G8.17, G8.18) and polar soils (G7.3).

Another area of research includes sanitary-microbiological control of food additives, validation and verification of chemical microbiological methods (G7.8, G7.10).

As a separate direction can be referred the scientific works related to the development of statistical models for data processing (G8.8, D8.9).

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

The scientific activity of the candidate is known and is reflected in the research work and literature of Bulgarian and foreign scientists. The presented reference for quoting the scientific works of Chief Assistant Dr. Malcheva shows the following:

- in "Scientific publications, referenced and indexed in world-famous databases with scientific information or in monographs and collective volumes" - 7 pcs. (D10);
- in "Monographs and collective volumes with scientific review" - 17 pcs. (D11)
- in "Non-refereed journals with scientific review" - 3 pcs. (D12).

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

I accept that the scientific activity of the candidate Chief Assist. Dr. Boyka Malcheva is in main and scientifically significant areas, the results of which are fundamental, methodological and applied contributions:

- A complex methodological approach and assessment is applied to determine the microbiological and enzymatic status of soils of different types, with different vegetation and geographical location, taking into account the physico-chemical properties.
- Microbiological and biochemical indicators have been identified as indicators for the biological condition of soils. Integral coefficients have been developed to account for the microbiological and enzymatic activity of urban soils, which can be used for any soil type.
- A comparative assessment of the humification and development of the soil microcoenosis in technosols reclaimed under different schemes, regenerated substrate mine, soil depot and tailings pond was prepared. The relationship between biomass carbon of microbial origin and enzymes that break down carbohydrates has been proven.
- Analyzed in dynamics is the microbiological status of forest soils affected by fires, as well as soils subject to water erosion, wind erosion and heavy metal pollution, which are poorly studied problems in our country. Indicator groups of microbes and enzymes have been identified.
- The influence of the type and concentration of fertilizer products on the microbiological and enzymatic status of agricultural soils with different crops has been established. Indicator groups of microorganisms and enzyme activities have been determined to assess fertilization on soil fertility.
- Microbiological dynamics has been studied and in the phases of formation of different compost variants. The influence of the created compost variants and biochar on the soil microflora has been established.
- 3 validated and verified chemical and microbiological methods for control of food additives are offered, which can be used in determining the health risk for humans.
- Soil-microbiological maps have been developed for the dependence of the degree of soil contamination with heavy metals and the amount of total microflora.
- Created statistical and mathematical model for predicting soil microbial activity by indirect signs, including four factors: sampling depth, soil moisture and temperature, lead content.

5. Assessment of the personal contribution of the candidate

Due to the complex nature of the research in the presented scientific papers, the participation of several co-authors in the publications is established. Nevertheless, the personal contribution of Chief Assistant Dr. Malcheva clearly stands out in the content of the presented monograph and the publications of which she is the sole author (5 pcs.), and is the first author in 10 of the collective works. For co-authored publications, I accept that participation is equal.

6. Critical notes and recommendations

I have no critical remarks about the candidate.

I recommend for the future Chief Assistant. Dr. Malcheva to systematize and present the contributions of her scientific works in a more generalized form, which will distinguish even more clearly the scientific than the scientific-applied ones.

7. Personal impressions

I know Ch. Assistant Professor Dr. Boyka Malcheva from the time when she was a student and doctoral student at University of Forestry. My impressions of her are excellent. She is responsible and precise in her work, built scientist, ethical, correct in relations with colleagues and students. She is a sought-after partner for teamwork, as evidenced by her participation in many collective projects and co-authored publications.

8. Conclusion

The materials submitted for participation in the competition, the review of the scientific papers regarding the set goals, their implementation, applied modern methods in the conducted research, scientific and scientific-applied contributions, the pedagogical activity of the candidate, as well as the overfulfilled minimum requirements of Regulations for Development of the Academic Staff the scientometric indicators give me grounds and I **PROPOSE the candidate CH.AS. DR. BOYKA ZDRAVKOVA MALCHEVA to take the academic position of "Associate Professor" in the discipline "Microbiology" from PF 4.4. Earth sciences.**

The statement was prepared by:

(Prof. M.Doncheva-Boneva)

The statement is delivered: 9.8.2021.