



SCIENTIFIC STATEMENT

ABOUT COMPETITION FOR THE ACADEMIC POSITION OF "ASSOCIATE PROFESSOR"
in the professional direction 4.3. Biological Sciences (Plant Physiology – Symbiotic Relationships in Plants), announced by the Department of Plant Physiology, Faculty of Biology of Sofia University "St. Kliment Ohridski" in State Gazette no. 32 of 09/04/2024 "

Candidate: Assist. Prof. Dr. Marieta Georgieva Hristozkova, Department of Plant Physiology, BF, SU

Member of the Scientific Jury: Assoc. Prof. Dr. Miroslava Konstantinova Zhiponova, Department of Plant Physiology, Faculty of Biology, Sofia University, member of the Scientific Jury appointed by order № РД-38-304/10.06.2024 г. of the Rector of Sofia University.

1. General data about the candidate

Biography. The candidate Marieta Hristozkova graduated from the High School of Natural Sciences and Mathematics in the city of Vratsa, after which she continued her education at the Faculty of Biology, SU "St. Kl. Ohridski" and acquired a Master's degree in "Molecular Biology" with a specialization in Plant Physiology. Then, at the Institute of Plant Physiology and Genetics (Bulgarian Academy of Sciences), Mineral Nutrition and Water Regime section, she successfully developed and defended her doctoral dissertation on the topic "Influence of molybdenum deficiency on nitrogen uptake in nitrogen-fixing plants, pea and alfalfa. Investigation of the general stress response in *Sinorhizobium meliloti* under conditions of nitrogen and carbon starvation". In the same section of IPPG-BAS, since 2002 she has been appointed as a specialist biologist, and since 2008 she has become an Assistant Professor. At the same time, she was a part-time lecturer in the Department of Plant Physiology, BF, SU. In 2018, Dr. Hristozkova started working as an Assistant Professor in the Department of Plant Physiology of BF, SU. The candidate specialized abroad in 2005 - at the Laboratory of Plant and Microbial Relationships (LIPM) at UMR INRA /CNRS, Toulouse, France, and in 2008 - at "George August" University, "Plant Nutrition" Section, Göttingen, Germany. The professional competencies and interests of Assist. Prof. Marieta Hristozkova include research on mineral nutrition, plant-microbial relationships, abiotic stress, physiological parameters of plants with economic value.

General scientific production and scientific activities. The general scientific output of Assist. Prof. Dr. Hristozkova includes 35 works, of which 27 are with IF and/or SJR, 1 is a book chapter, 1 is in a conference proceedings. A check of the citations in Scopus showed over 250 citations. Dr. Hristozkova has presented her scientific results at 19 scientific conferences. The candidate participates in the editorial board of the journals: Genetics and Plant Physiology; Agriculture (MDPI; in the special issues "Arbuscular Mycorrhiza in Cropping Systems" and "Arbuscular Mycorrhiza and Its Influence on Crop Production"); Microorganisms (Special Issue "Research on Mycorrhizal Fungi"). She regularly participates as a reviewer of scientific works for publication in international publications. In the last four years, Dr. Hristozkova has also been involved in the activities of two scientific networks under COST programs: "Trace metal metabolism in plants - PLANTMETALS" and "Beneficial root-associated microorganisms for sustainable agriculture". In terms of project activity, the applicant has provided evidence of participation as a member in 5 national and 3 international projects.

Assessment of educational and pedagogical activity. Assist. Prof. Dr. Hristozkova develops and conducts lecture courses, practical exercises, electronic learning resources, the summer training practice for various specialties from the Bachelor degree. The general and auditorium teaching employment in the last 5 years significantly exceeds the required minimum workload. Nevertheless, Assist. Prof. Dr. Hristozkova successfully supervises graduate students, students' practical, and coursework in the Department of Plant Physiology, reviews diploma theses, and participates in events to popularize science and present the department (Biofests, International Day of the Fascination of Plants).

Assessment of administrative commitment. In the last 5 years, Assist. Prof. Dr. Hristozkova is the secretary for the educational and scientific activities of the Department of Plant Physiology, as well as the secretary of the Master's Program in Plant Physiology. Assist. Prof. Dr. Hristozkova participates in candidate-student campaigns as a questor and examiner and in committees for the examination of written papers from the state exams of the specialty Molecular Biology. She also participated in a commission for the preparation of a self-assessment report for the accreditation of a doctoral program in the Department of Plant Physiology.

2. Compliance with the minimum state requirements for holding the academic position "Associate Professor"

The report on the implementation of the minimum national requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB/ZRASRB) for scientific area 4. Natural Sciences, Mathematics and Informatics; Professional Direction 4.3. Biological Sciences shows quantitative indicators that fully cover these criteria as follows:

Group A Indicators: Dissertation - **50** pts.

Group B Indicators:

	<i>List of publications for the contest [10B.SelectedPublications]</i>	Total points
3 publications Q1 (25 pts each)	№ 7, 9, 15	75
2 publications Q2 (20 pts each)	№ 1, 2	40
Total group of indicators B (at a minimum of 100 pts each)		115

Group G Indicators:

	<i>List of publications for the contest [10B.SelectedPublications]</i>	Total points
1 publications Q1 (25 pts each)	№ 19	25
3 publications Q2 (20 pts each)	№ 11, 18, 26	60
4 publications Q3 (15 pts each)	№ 6, 16, 21, 23	60
2 publications Q4 (12 pts each)	№ 24, 25	24
8 publications SJR без IF (10 pts each)	№ 3, 4, 5, 8, 10, 12, 13, 14	80
Others (no points are given)	№ 17, 22, 27, 28	
Published book chapter (15 pts each)	№ 20	15
Total group of indicators G (at a minimum of 200 pts each)		264

Group D Indicators:

	Total points
149 citations in Scopus (2 pts each)	298
244 citations in other publications (1 pts each)	244
Total group of indicators D (at a minimum of 50 pts each)	542

According to indicators G and D, the candidate significantly exceeds the regulatory requirements. In more than 50% of the publications, Dr. Marieta Hristozkova is the first or second author.

3. Scientific, scientific-applied and methodological contributions of the candidate

The scientific activity of Assist. Prof. Dr. Hristozkova has contributions of scientific and scientific-applied value. The main contributions are in the area of plant-microbial relationships in plants as a biostimulator for growth and resistance. On the one hand, the impact of arbuscular mycorrhizal fungi on plant development has been investigated. On the other hand, symbiotic relationships between legumes and nitrogen-fixing bacteria have been analyzed. A second direction is the assessment of the influence of abiotic stress conditions (salt stress, heavy metals) on plant development. The third direction includes methods for improving the quality and evaluating the antioxidant activity of medicinal and aromatic plants, and a comparative analysis was made between in vitro propagated plants and those grown from seeds or wild growing medicinal and aromatic plants.

CONCLUSION

I conclude that the candidate has significant professional experience in the field of plant physiology and in particular in symbiotic relationships in plants. The scientific output is significant, the candidate actively participates in research activities, exhibits highly active educational and pedagogical activity, as well as administrative commitment. The candidate meets and exceeds the minimum national requirements of LDASRB/ZRASRB for occupying the academic position "Associate Professor". My conclusion is that the scientific production of Assist. Prof. Dr. Hristozkova satisfies the recommended criteria of the LDASRB/ZRASRB, the Regulations for its implementation and the Regulations for the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski", which gives me reason to evaluate it POSITIVELY.

Based on the above, I propose to award Assist. Prof. Dr. Marieta Georgieva Hristozkova the academic position "Associate Professor" in professional direction 4.3. Biological Sciences (Plant Physiology - symbiotic relationships in plants).

22.07.2024
Sofia

Member of the Scientific Jury:
(Assoc. Prof. Dr. Miroslava Zhiponova)