

## REFeree REPORT

Regarding the competition for the selection of an "**Associate Professor**" in the professional field **4.3 Biological Sciences**, specializing in "**Genetics**," for the needs of the Laboratory of Genome Dynamics and Stability at the Institute of Plant Physiology and Genetics - Bulgarian Academy of Sciences (BAS), as announced in the Official Gazette, issue No. 24/17.03.2023.

Author of the position:

Prof. Milena Georgieva Vasileva, PhD

Member of the Committee

from

Laboratory of Molecular Genetics, Epigenetics, and Longevity,

Institute of Molecular Biology "Acad. R. Tsanev,"

Bulgarian Academy of Sciences

### General section:

The only candidate who submitted documents for the competition was Assist. Prof. Georgi Nikolaev Bonchev, PhD, from the Institute of Plant Physiology and Genetics, BAS (IPPG-BAS). During the first meeting of the scientific committee, it was unanimously agreed that Dr Georgi Bonchev is eligible for evaluation in the announced competition. The review of the documents showed that the procedure for opening and announcing the competition for the position of "**associate professor**" has been followed and is following the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (amended and supplemented in Official Gazette, issue No. 102/23.12.2022) and the Regulations on the Specific Conditions and Procedure for Acquiring Academic Degrees and Occupying Academic Positions at the IPPG-BAS (Protocol 6/10.05.2023).

### Brief biographical data of the candidate

Georgi Bonchev graduated from the Faculty of Biology and Soil Science at the State University of St. Petersburg, Russia, specializing in "Plant Physiology and Genetics" in 1993. In the same year, he began his Master's degree in the field of "Biotechnological Processes and Apparatus," specializing in "Genetic and Cellular Engineering," at the Faculty of Biology of Sofia University "St. Kliment Ohridski." In 1995, he defended his diploma thesis and obtained a Master's degree.

From 1999 to 2002, Georgi Bonchev held the position of biologist specialist at the Institute of Genetics, BAS. From 2002 to 2014, he was an assistant at the same scientific institution. Meanwhile, in 2002, he started his PhD studies in the scientific speciality "Genetics" at the Institute of Plant Physiology and Genetics, BAS. He successfully

defended his doctoral thesis on the topic: "Molecular Genetic Characterization of Mutant Forms of *Sphaerococcum* Type in *Triticum aestivum* L. and Triticale Using Transposons," under the supervision of Prof. Sevdalin Georgiev, PhD, and Assoc. Prof. Lyubomir Stoilov in 2011. Since 2015, he has been an associate professor in the scientific speciality "Genetics" at the Laboratory of Genome Dynamics and Stability at IPPG-BAS. Since 2017, he has been the head of the same laboratory. The candidate has a total scientific experience of over 20 years.

### **Scientific contributions and bibliometric indicators of the candidate scientific contributions**

The scientific interests and contributions that Dr Bonchev presents in this competition are in modern genetics. They are focused on studying the structural dynamics of the plant genome under natural and stress-induced conditions. This research activity encompasses several directions that can be summarized as follows:

1. *Development of DNA markers for genotyping and assessment of natural and mutant genetic diversity in plants*

This direction involves in-depth research on mobile genetic elements and their structural dynamics. It includes the development and application of transposon-based marker methods. The research work has been extended and enriched with taxonomic studies using DNA barcoding methodology. This represents a pioneering application of transposon-based marker methods and DNA barcoding in the mentioned areas, with great added value for the scientific development of the candidate.

2. *Genomic selection in cereals*

New loci for resistance to powdery mildew caused by *Blumeria graminis* have been identified in the tetraploid wheat *Triticum turgidum* subsp. dicoccum (race GZ1). It has been demonstrated that the dominant locus QPm.GZ1-7A determines up to 20% of the variation in the trait, while the recessive locus QPm.GZ1-2A determines up to 40% of the trait variation. It provides complete resistance at all stages of plant development: the dense genetic map created and the additional saturation of the new effective recessive locus QPm.GZ1-2A with molecular markers serve as a basis for its cloning, further detailed study, and a prospect for its effective use in breeding programs.

In summary, I believe that all the scientific contributions of Assist. Prof. Georgi Bonchev are correctly presented and accurately reflect the research results. Additionally, Georgi Bonchev invests his time and effort in establishing networks of collaboration at the national and international levels in DNA barcoding technologies, aiming to study and preserve plant biodiversity. In 2023, Dr Bonchev initiated coordinating meetings between scientific organizations in Bulgaria for the establishment of the National DNA Barcoding Network.

### **Bibliometric indicators**

The reference for meeting the minimum national requirements of the Higher Attestation Commission for Scientific Degrees and the Regulation on Specific Conditions

and Procedures for Appointing an Academic Position of "Associate Professor" at the Institute of Plant Physiology and Genetics - Bulgarian Academy of Sciences (IPPG-BAS) shows that Assist. Prof. Georgi Bonchev exceeds the points for indicators G, D, and E of the "Associate Professor" procedure criteria at the same scientific organization.

The overall scientific output of Dr Georgi Bonchev includes 23 scientific publications and reviews, eleven of which Bonchev is the first author. The total impact factor (IF) of his scientific activity is 61.222.

In the "Associate Professor" competition, Dr Bonchev participated in sixteen research works, thirteen of which are scientific articles and three are scientific reviews. Bonchev is the first or corresponding author in eleven of these scientific publications. The distribution by quartiles of these scientific publications is very positive: eight articles are in Q1, four in Q2, two in Q3, and two in Q4. The total IF of the publications for the competition is 55.553, and they have been cited 66 times, according to the data from the Web of Science as of April 10, 2023.

Dr Bonchev has participated in implementing seven national scientific and educational projects. In two of them, he is the project leader, while in the others, he is a team member. The participation of Assist. Prof. Georgi Bonchev, in implementing three international scientific and educational projects, where he is a team member, is also noteworthy. This is a very good attestation of his active and successful project activity.

### **Conclusion**

Assist. Prof. Georgi Bonchev presents scientific research in a well-defined area of modern plant genetics that fully corresponds to the announced competition. The scientific contributions, the number and quality of published scientific articles, and their good international response meet the minimum required points for acquiring the academic position of "**Associate Professor**" in the professional field of genetics. The candidate's ability to lead a research team and attract funding through project financing has been demonstrated, which undoubtedly meets and even exceeds the requirements for habilitation as an "Associate Professor" at the Institute of Plant Physiology and Genetics, Bulgarian Academy of Sciences (IPPG-BAS).

All of this gives me the basis to express my positive assessment and confidently recommend to the esteemed members of the scientific jury, appointed by Decree No. 01-35 on May 11, 2023, issued by the Director of IPPG-BAS, Prof. Valya Vasileva, PhD, to select Dr Georgi Bonchev for the academic position of "**Associate Professor**".

Sofia, Bulgaria

2023/07/06

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/ Prof. Milena Georgieva, PhD/