

OPINION

from Prof. Marina Ivanova Stanilova, PhD

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Regarding the awarding of the educational and scientific degree "Doctor", in the field of higher education: 4. Natural sciences, mathematics and informatics, Professional direction 4.3. Biological Sciences, Scientific specialty Botany (01.06.03), to **Vladimir Metodiev Ilinkin**, based on his dissertation work on the topic: "**Biotechnological approach for cultivation of *Tanacetum cinerariifolium* (Trevir.) Sch.Bip. (Asteraceae)**", with scientific supervisor Prof. Dr. Marina Stanilova and scientific consultant Prof. Dr. Strahil Berkov.

This opinion was prepared on the basis of Order No. 35/11.04.2024 of the Director of IBER - BAS and according to the rules for scientific juries of doctoral students enrolled before 05.05.2018, according to which the scientific supervisor or scientific consultant is legally included in the scientific jury, if they are habilitated persons, and their opinion has the character of the opinion of the scientific supervisor and is mainly aimed at the qualities demonstrated by the doctoral student in the course of the doctoral studies, without evaluating the nature of the scientific contributions (Art. 9, Item 16 from the Regulations on the terms and conditions for acquiring scientific degrees and for occupying academic positions at IBER - BAS).

This opinion is focused on the qualities demonstrated by the doctoral student, according to the above requirements in cases where the scientific supervisor is a member of the scientific jury. Vladimir Ilinkin graduated from Forestry University - Sofia in 2010, with a master's degree in “Landscape Architect”. From 2012 to 2016, he was an Assistant in Forest Soil Science at FU, participated in the training of students in the disciplines “Forest Soil Science” and “Soil Science with Fertilization Basics”, and for some time he was the Head of the “Central University Laboratory of Ecology and Environmental Protection”. My first impressions of him are from the beginning of 2016, as a young inquiring scientist with established organizational and communication skills, highly motivated to build a scientific career related to the plant world. In September 2016, Ilinkin was enrolled in full-time doctoral studies in a scientific specialty 06.01.03. “Botany”. Throughout the period of his doctoral studies, he showed initiative, enthusiasm for experimentation and high efficiency in work. He

participated in the planning of large-scale laboratory experiments on *in vitro* propagation of the plants subject to his research and successfully applied statistical processing of the obtained results. Thanks to his deep knowledge in various scientific fields and his impressive logical thought, Ilinkin correctly established the cause-and-effect relationships in the difficulties that arose during experimental work and found appropriate solutions to overcome them. As a result, he obtained 15 *in vitro* clones of pyrethrum consisting of over a thousand individuals, selected 4 clones and created an efficient protocol for *in vitro* propagation of *Tanacetum cinerariifolium* using a modified nutrient medium.

The diverse scientific interests of Vladimir Ilinkin diverted him to a certain extent from the specific tasks of summarizing the results on the topic of his dissertation, and in September 2019 he was dismissed from doctoral studies with the right to defense his PhD thesis. Ilinkin chose a form of dissertation work with linked publications, which further delayed the start of the dissertation defense procedure, but on the other hand gave him the opportunity to expand his research with tasks that required a significantly longer technological period: acclimatization of *in vitro* obtained plants from the selected clones to the conditions of the *ex situ* outdoor collection and determination of the pyrethrins content in the flower heads of the acclimatized plants. The financial support of a project developed under the National Scientific Program “Healthy Foods for a Strong Bioeconomy and Quality of Life” (WP 2.3 “Ensuring plant health and safety of plant production”, 2019-2023) was also important for the successful implementation of these tasks, in which Ilinkin was a major participant.

During the development of the dissertation, Vladimir Ilinkin also acquired new skills as the head of a project funded by the BAS under the Program to Support Young Scientists and Doctoral Students - 2017, on the topic “Obtaining and phytochemical evaluation of *in vitro* clones of pyrethrum (*Tanacetum cinerariifolium* (Trevir.) Sch.Bip., family Asteraceae”. Within the framework of this project, he also carried out a 10-day specialization in Croatia, University of Zagreb, Faculty of Agriculture in November 2018, under the scientific guidance of Dr. Martina Grdiša, with whom he had, on his own initiative, established a fruitful contact during the 10th CMAPSEEC international conference (Conference on Medicinal and Aromatic Plants of Southeast European Countries, 20-24 May, 2018, Split, Croatia).

During the short three-year period of his stay at IBER, Ilinkin was also involved in other current projects of the department, in parallel with the work on his dissertation (KII-06-H26/6 dated 13.12.2018, financed by the National Scientific Research Fund, and others), as well as in discussions related to other plant species where his knowledge of soil science was useful.

From October 2019 Ilinkin works at the Institute of Soil Science, Agrotechnology and Plant Protection “Nikola Pushkarov”, initially as an assistant, and from 09.10.2023 he is a Chief Expert, and his work is related to the analysis of micro- and macro elements in plant samples, as well as physical and chemical soil indicators of soil samples. Although he left IBER, he remains open to working in partnership and joint research in future scientific projects. My recommendation to him is for greater consistency in performing the planned tasks and completing the experiments on time.

In conclusion, the doctoral student has accumulated a total of 630 credits under the BAS credit system (130 from the educational component, 272 from the approval of the implementation of the scientific program and 228 from publications on the topic of the dissertation), which significantly exceeds the required minimum of 250 credits. The results of his research on the topic of the dissertation have been summarized in 4 printed publications, mainly in the field of plant biotechnology, including the phytochemical analyzes necessary to achieve the set goals. Three of the publications were in quartile journals (2 with ISI IF and SJR and 1 with SJR). He attended 9 scientific forums, 4 of which were abroad or international in Bulgaria, which helped him to create contacts with famous scientists and to establish himself in the scientific space.

All this gives me reason to confidently recommend to the respected members of the Scientific Jury to vote positively and to award Vladimir Metodiev Ilinkin the Educational and Scientific Degree “Doctor” in the scientific specialty 01.06.03 “Botany” of the professional direction 4.3. Biological Sciences.

Sofia, 14.05.2024

Signature:
(Prof. M. Stanilova)