

Review

by Prof. Dr. Strahil Berkov

Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences (IBER-BAS)

Member of the Scientific committee appointed by decree № 16/23.01.2024 of the director of IBER-BAS for selection of an Associate Professor of Botany for the Research Group "Plant Diversity and Local Development", section "Applied Botany" at the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences. Dr. Teodora Ivanova is the only candidate.

General information on the applicant's career development

Dr. Teodora Ivanova graduated from the Faculty of Biology at Sofia University "St. Kliment Ochridski" in 2003 with a degree in Plant Biotechnology. She defended her PhD thesis "*In vitro* cultivation of *Ruscus aculeatus* L. and *Ruscus hypoglossum* L. (Liliaceae)" in 2013 and received the educational and scientific degree "Doctor" at the Institute of Biodiversity and Ecosystem Research at the Bulgarian Academy of Sciences. Teodora Ivanova was a specialist-biologist from 2003 to 2006, and held the positions of Assistant Professor in 2010 and Senior Assistant Professor in 2013 at the aforementioned institute. Dr. Teodora Ivanova had a short overseas specialization in Micropropagation/Seed Conservation at Millennium Seed Bank, Royal Botanic Gardens, Kew, UK in 2009. She received an award named after prof. "E. Palamarev" for young researchers in 2009. Fluent in English and German.

Evaluation of the candidate's research activities

The main research activity of Dr. Teodora Ivanova is in the field of ethnobotany. Ethnobotanical research in Bulgaria is mainly focused on medicinal plants, while wild and cultivated plants used for food are poorly studied. This allows the candidate to do interdisciplinary research on interrelated topics, the focus of which are biocultural diversity (ethnobotany and cultural anthropology) and the transformation of traditional knowledge about plants preserved in Bulgarian society.

Scientific contributions

Dr. Teodora Ivanova presents 15 contributions in three research themes: plant diversity in Bulgarian song folklore; plant diversity of home gardens; (bio)cultural aspects/measurements of plants - identity and valorization, sustainable development and socio-economic aspects - ecological agriculture, food production and nutrition.

As main scientific contributions of an original nature I would highlight:

- Contribution number 3 (identification of the most significant Bulgarian plants in the different song types - *Rosa*, *Malus*, *Prunus*, *Triticum aestivum* and *Vitis vinifera* and taxonomic diversity in local species - 93 wild and cultivated taxa) showing that Bulgarian song folklore reflects the cultural significance of plant diversity from before the 17th century.
- Contribution number 5 (new data collected on the use of 235 taxa of cultivated and wild plants in gardens for a variety of purposes - food, ornamental, medicinal, spice, fodder, technical and insecticidal), which provides new empirical data and enriches our knowledge in a little-studied scientific area.
- Contribution number 10 (identifying the main factors and threats to the conservation of inherited indigenous plant genetic resources), which demonstrates that fewer species and varieties/forms are being grown in gardens and that there is an urgent need to develop policies for inventorying, collecting and promoting the genetic resources conserved in them. It is noted that the introduction of alien plant materials is leading to genetic erosion of the conserved indigenous varieties and forms. There is little commitment of the

farmers to the conservation of indigenous plant genetic resources and the responsibility for this is expected to lie with scientific or government institutions. This is a contribution that is directly linked to the conservation of valuable local genetic resources that have been neglected in research.

Applied science contributions

As contributions of scientific and applied nature I would highlight:

- Contribution number 1 (creation of an ethnobotanical database with 10113 Bulgarian folk songs collected since the 19th century from the whole territory of Bulgaria and among the historical diaspora abroad in the Balkans and within the borders of Ukraine and Moldova). This database can be used by a wide range of researchers and specialists, as well as for educational purposes.
- Contribution number 2 (documentation of 4788 Bulgarian phytonyms /plants and their products/, assigned to 146 plant taxa belonging to 109 genera). Our knowledge of plant taxa in Bulgarian folk songs has been supplemented and significantly enriched compared to previous ethnographic studies.
- Contribution number 12 (study of the peculiarities of plant components of traditional meat products). It was found that industrial production reduces the variety of plant ingredients used, which deprives products of their taste and regional specificity and negatively affects their popularity and demand.

I accept the 'Statement of Contributions' presented by the applicant, which contains the most significant results and conclusions of Dr Theodora Ivanova's research.

Significance of the results obtained

Dr. Teodora Ivanova has submitted 26 scientific papers for this competition, with a minimum requirement of 20, of which 17 are in journals with impact factor, with a minimum requirement of 10. In eleven of the publications she is the first author. Indicative of the importance of the scientific papers is their distribution in the quartiles

according to the Scimago Journal Rank (SJR) metric for Scopus refereed scientific journals. Eight publications fall in Q1, three in Q2, four in Q3 and two in Q4.

The interest in the candidate's work is evidenced by a "Citation List" containing 37 citations, against a requirement of 20, of which 33 are in journals with Impact factor, against a minimum requirement of 10.

In the 'Reference for Relevance' the distribution of points is: A - 50 points, C - 110 points (with a minimum requirement of 100), D - 277 points (with a minimum requirement of 200), E - 77 points (with a minimum requirement of 60). The total number of points for the different sections is thus 507, with a minimum requirement of 430 points.

Project activity

Dr. Teodora Ivanova has participated in seven projects funded by ministries and the National Science Fund, as well as in five international projects funded under FP6, NATO, etc.

Research work profile and personal contribution

The number of scientific papers, including those in which Dr. Teodora Ivanova is the first author, is indicative of a clear scientific profile in the field of ethnobotany. Her participation in numerous national and international projects is a proof that she is an active scientist, accepted as a welcome partner because of her expertise, experience and willingness to collaborate.

Personal impressions

I know Dr. Theodora Ivanova as a serious, energetic, erudite and responsible colleague with a desire to work and ability to learn new methods to apply in her research. These qualities portend her rapid development as a successful scientist.

Conclusion

Taking into account the quality and volume of the scientific production, the scientific contributions, the response in the international scientific literature and the participation in scientific projects, I conclude that Dr. Teodora Ivanova fully meets and exceeds the requirements of the Law on Academic Staff Development in the Republic of Bulgaria and the criteria of the Scientific Council at the Institute of Biodiversity and Ecosystem Research. The candidate is an established scientist with international standing and with the potential to be one of the leaders in the field of ethnobotany in the country. Therefore, I recommend to the scientific jury and to the Scientific Council of the institute to elect Dr. Teodora Ivanova as an "Associate Professor in Botany" for the needs of the Plant Diversity and Local Development Research Group at the Institute of Biodiversity and Ecosystem Research.

Sofia

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Prof. Dr. Strahil Berkov