R E V I E W

Regarding a Competition for an Academic Position of **"Associate Professor"**
In professional field **6.1 Plant growing**
scientific specialty **"Breeding and seed production of cultivated plants"**
published in the State Gazette no № 65 / 06.08.21

with an applicant: **Chief Assist. Dr. Nadia Georgieva Daskalova**

Reviewer: **Assoc. Prof. Dr. Miglena Atanasova Drumeva** at the Technical University - Varna; field of higher education - 6. Agricultural sciences and veterinary medicine ", professional field - 6.1 Plant growing, scientific specialty "Breeding and seed production of cultivated plants"

1. Background and biography.

The current competition for the academic position "Associate Professor", announced in SG no. 65/06.08.21, published in Internet on 06.08.2021, was initiated on the proposal of the Department Council of the Department of Plant Production, confirmed by a decision of the Faculty Council of the Faculty of Manufacturing Engineering and Technologie of Technical University of Varna (TU-Varna) and later by The Academic Council of TU-Varna. The only candidate who submitted documents is Ch. Assistant Professor Dr. Nadia Georgieva Daskalova. After consideration of the submitted documents, the applicant is admitted to the competition.

Ch. Assistant Dr. Nadia Daskalova was born in 1975. In 1997 she graduated from VSI - Plovdiv, majoring in "Agricultural Engineering - Plant Protection", and at the same time acquired pedagogical qualifications as a "Teacher of Agronomy" in high schools For 2 years and 7 months he worked as an agronomist at the Dobrudzha Agricultural Institute, General Toshevo, where he participated in selection - field, experimental and laboratory activities in the laboratory of cytogenetics. He worked as an expert in Bulgarcontrol EAD, Dobrich and Varna branches, and from 2004 to June 2011 he held the positions of expert consultant and deputy manager in the Garden sector at the Mr. Bricolage shopping center in Varna.

From September 2011 to 2016 she was appointed and worked as an Assistant in the Department of Plant Breeding at FMNE, Technical University - Varna. From 2012 to 2019 he combined the position of "Agricultural Technician" at the Training Experimental Field and Greenhouse, at the Department of "Plant Growing", applying plant protection of perennials, irrigation, phytosanitary pruning, weed control - mechanically and chemically , care for work equipment (hand tools, power tiller, cordless sprayer, hand sprayers, scissors, etc.), care for ornamental plants (roses, hibiscus, lilac, lavender, mint, rosemary, etc.). Maintenance of greenhouse, bungalow (fumigation, water supply, etc.).

In 2013 she enrolled in a doctoral program in self-study under the doctoral program "Breeding and seed production of cultivated plants" at the Agricultural Institute, Shumen. In 2015 she successfully defended her dissertation on "Team in synthetic wheat and hybrids to improve some selection features "and acquires the educational and scientific degree" Doctor ". In 2016 he acquired the academic title of "Chief Assistant" and to this day works as such in the Department of Plant Production at the Faculty of Manufacturing Engineering and Technologie of TU - Varna.

2. General description of the materials presented.

For participation in the competition for the academic position "Associate Professor" Ch. Assistant Professor Dr. Nadia Daskalova presents a dissertation and a total of 27 scientific papers, 3 teaching books, 1 textbook and a list of 14 project research participations. From the presented scientific papers, the distribution is the following: monographic work in co-authorship (attached separation protocol for 70% personal participation of the applicant) and 26 publications, divided into groups and indicators, as follows: 13 of them are published in scientific journals, referenced and indexed in world-famous databases - indicator D 4.7. and 13 - in unreferred journals with scientific review.

There are also 6 publications with which the applicant has met the minimum requirements for holding the academic position of "chief assistant" according the ZRASRB, and which do not participate in this competition and will not be reviewed.

I accept for review 27 scientific papers that are outside the procedures for acquisition of ESD "Doctor" and AP "Chief Assistant".

The following documents are also submitted:
Doc. 8.1: Report on teaching and research activities, incl. the scientific contributions of the works under the competition;
Doc. 8.2: Reference for the developed teaching materials: teaching books - 3, textbook - 1;
Doc. 8.3: List of prepared curricula - 6;
Doc. 8.4: List for participation in projects – 14, and conferences - 4;
Doc. 8.5: Certificates proving the professional qualification of the applicant.

The scientometric indicators of the presented activity are:
Group A. Dissertation thesis for awarding the educational and scientific degree "Doctor" - 50 points, with a required minimum of 50 points; **Group B - Indicator 2.3**. - 100 points, with a required minimum of 100 points, formed by a monographic work, in which the applicant certifies 70% personal contribution through an attached separation protocol; **Group G - Indicator 4.7.** - 169 points, formed by publishing articles in scientific journals, referenced and indexed in world-famous databases with scientific information (13 issues); **Indicator - 4.8**. - 34.4 points, formed by publishing articles and reports in non-refereed journals with scientific review and in edited collective volumes (13 issues); total for **Group G** - 203.4 points, with a required minimum of 200 points. **Group D - Indicator 5.12**. - 165 points, formed by 11 citations of the scientific works of Ch. Assistant Professor Dr. Daskalova in scientific publications, referenced and indexed in world-famous databases with scientific information and **Indicator 5.14.** - 25 points, formed by 5 citations of the scientific works of the applicant in non-refereed journals with scientific review; total for **Group D** - 190 points, with a required minimum of 50 points. **Group J - Indicator 7.29.** - 62 points, with a required minimum of 30 points, formed by the number of lectures given at TU-Varna for the last three years.

The scientific articles included in Group G - indicator 4.7. Have been published in the following journals: Archives of Biological Sciences, Turkish Journal of Field Crops, Cereal Research Communications (2), Bulgarian Journal of Agricultural Science, Journal of Agricultural Science and Technology, Zemdirbyste-Agriculture, Cytology and Genetics (2), Plant Sciences (4). The scientific articles from Group G - indicator 4.8., are published in the following journals and collections: Field Crops Studies (2), Proceedings of the Union of Scientists in Bulgaria - Dobrich branch, Yearbook of TU - Varna (2), Turkish Journal of Agricultural and Natural Sciences, Scientific papers of Dobrich College - University edition of Bishop Konstantin Preslavski, Shumen, and in conference proceedings (5).

The share of the applicant is clearly outlined in the presented scientific papers. Referred to the entire scientific production (1 monograph and 26 scientific publications) Dr. Nadia Georgieva Daskalova participates as the first and main author (with 70% participation) in the presented monograph, she is the leading author of 77% (10 of 13 issues) of scientific publications in scientific journals, referenced and indexed in world-famous Scopus / Web of Science databases included in group G.7., the second author is in two of this group of publications (15%), and the third author is in one of them (7.7%). In 62% of the scientific papers referred to group G.8., The applicant participates as a first and second author (in 8 out of 13 publications), in 30.7% of them he is a third author and in one of them (7.7 %) is a fourth author.

The majority of scientific papers were published in the period 2012-2021 as follows: 2 issues in 2012, 2 issues in 2013, 2 issues in 2014, 1 issue in 2015, 4 issues in 2016. ., 3 issues in 2017, 4 issues in 2018, 2 issues in 2019, 1 issue in 2020 and 3 issues in 2021. There are also two publications from an earlier period of research, one of which was published in 2002 and the other in 2004.

There are no signals of legally proven plagiarism in scientific papers.

The documents submitted by the applicant comply with the requirements of ZRASRB and the Regulations on the terms and conditions for acquisition the academic position of "Associate Professor" at the Technical University - Varna, and fully meet the minimum national requirements for acquisition the academic position "Associate Professor".

3. General characteristics of the scientific research work and implementation activities of the applicant.

In the scientific works applied by the applicant the main emphasis is on the selection-genetic studies of the cereals, related to the enrichment of the general plasma of the cultural forms in order to increase the productivity and resistance of the varieties to biotic and abiotic environmental factors. The overall scientific activity of the applicant is in the field of the announced competition and is aimed at research of specific problems and characteristic features in the field of genetics and selection of cultivated plants. The scientific works of the applicant show that all researches of the author are carried out at a high scientific and methodological level, using modern field and laboratory methods, and the data are processed by appropriate statistical methods. Discussion of the results based on the analysis of the results makes it possible to make original summaries and correct conclusions. All publications are written in good scientific language. The conclusions are well specified.

Dr. Daskalova has participated in 14 projects, 10 of which are projects funded by the state budget within the inherent research activities of the Technical University - Varna, one national and one international research project funded by the International Atomic Energy Agency, as well as in project BG161PO003-1.2.04-0045-C0001 "Modernization of the general agro-ecological laboratory for analysis of the quality of plant products and food and assessment of the components of the environment", financed under the Operational Program "Development of the competitiveness of the Bulgarian economy".

She has also implemented two mobilities within the Erasmus + program.

4. Assessment of the applicant's pedagogical training and activities.

The presented documentation shows that Dr. Nadia Georgieva Daskalova has almost 10 years of teaching experience.

Teaching activity of the applicant:

The main teaching activities of the applicant in the Bachelor's degree include laboratory exercises in the disciplines: "Genetics and Biotechnology", "Breeding and Seed Production of Cultivated Plants", "Crop Production", "Plant Protection" (Herbology ,

Phytopathology, Entomology, Integrated Pest Management), Phytopharmacy; production practices in "Plant Protection", "Plant Growing" and Training course; and a lecture course on Phytopharmacy.

In the Master's degree, specialties "Seed Production and Plant Protection" and "Production of Seeds and Planting Material" Ch. Assistant Professor Dr. Nadia Daskalova conducts laboratory exercises in the disciplines "Production of Seeds from Cereals and Fodder Crops", "Good Plant Protection Practices and Principles of Integrated Pest Management", "Plant Quarantine" and "Forecasting and Signaling", as well as a lecture course on "Phytopharmacy".

Developed curricula:

Ch. Assistant Professor Dr. Nadia Daskalova has developed 4 curricula in the Bachelor's degree in the professional field 6.1. "Plant growing" in the disciplines "Educational Practice - Plant Protection", "Production Practice - Plant Growing" "Internship" and "Phytopharmacy", as well as participated in the development of 2 curricula for Master's degree in the discipline "Phytopharmacy" for both specialties - "Seed Production and Plant Protection" and "Production of Seeds and Planting Material".

The teaching activity is complemented by the student's Diplom thesis supervision of 11 successfully graduates (9 of them in the Bachelor's degree and 2 in the Master's degree). All of the Bachelor students Diplomas theses were in the field of genetics and breeding.

Published teaching materials

Ch. Assistant Professor Dr. Nadia Daskalova is a co-author of three teaching books and the main author of one textbook, which are actively used in the educational process of professional field 6.1. "Plant growing".

The applicant has a significant personal contribution to the modernization of the material and technical base of the Department of Plant Breeding through his direct participation in research projects, ensuring the purchase of modern equipment. Many of the specialized laboratories in agronomic disciplines are enriched with a number of demonstration materials and samples as a result of the personal contribution of the applicant. The Laboratory of Plant Biotechnology is equipped with two of the projects targeted by the state budget, in which Ch. Assistant Professor Dr. Daskalova has an active participation, namely:

NP11 / 2016: Study on the genotypic responsiveness of cereals and oilseeds to in vitro techniques, a project within the inherent research activity of the Technical University - Varna, funded by the state budget, 2016.

NP10 / 2017. Application of the embryo culture method in combination with classical selection methods in cereals and oilseeds, a project within the inherent research activity of the Technical University - Varna, funded by the state budget, 2017.

The summarized teaching and pedagogical activity of the applicant illustrates the complex and wide-ranging commitment of Ch. Assistant Professor Dr. Nadia Daskalova in the educational process of professional field 6.1. "Plant growing".

5. Major scientific and implementation contributions.

The contributions submitted by the applicant are correctly determined. They are mainly in the fields of proving with new means significant new aspects of already existing scientific fields, problems, theories, hypotheses, developing new methods and obtaining confirmatory facts. The most significant among them and determining the assessment are the following:

Regarding the monograph:

- 21 amphiploids of common wheat crosses with *Aegilops* species were synthesized. New lines of bread wheat from a cross of SHP530-1 with *Albena* were selected through an

individual selection of plants possessing the pair 4t + 10.1t originating from *Aegilops tauschii*. The role of AFP8BAP in the selection for transfer of 1Ax2 * in durum wheat lines has been established. Amphiploids derived from *Triticum, Secale and Dasypyrum* species are described.

- Crosses were made between varieties of common, durum wheat and other species of the genus *Triticum* with samples of rye (*Secale sereale* L.).
- Octa- and hexaploid primary triticales with established configuration of reserve proteins in C2 were created and studied.

Regarding publications:

- A method has been developed for the production of synthetic amphiploids (AFP) with normal fertility by treating hybrid plants with colchicine in the fraternization phase.
- It has been found that when creating amphiploid × wheat crosses, straight crosses have an advantage over the reciprocal combination: they give higher seed germination and more viable hybrid plants without embryo rescue.
- As a result of biochemical analyzes of reserve proteins in different samples of *Aegilops tauschii* (2n = 14, DD), as well as in the AFP synthesized with its participation, it is confirmed that the wild diploid species is a valuable donor of specific alleles encoding interesting for selection reserve proteins other than those in bread wheat.
- The taxonomic relationships and genetic variability of wild species of the genus *Secale* L. as a source of valuable traits for the selection of rye, wheat and triticale were traced.
- The relationship between rye chromosomes and common wheat chromosomes has been confirmed in describing substituted *Triticosecale* Wittmack lines. The differences between complete and substituted triticale are outlined, as well as the importance of the introduced 1D and 6D chromosomes in triticale for improving the structural and functional properties of the flour and bread from this culture.
- The main issues of the selection of monocotyledonous einkorn are considered: origin, information on the localization of the genes responsible for the different morphological and agronomic traits in *T. monococcum* and *T. sinskajae*; qualities of einkorn; resistance to biotic and abiotic environmental factors; genetic and selection approaches to improve einkorn cultivation.
- Common wheat lines were created from a cross of *Triticum aestivum* × *Aegilops* variabilis with resistance to fungal pathogens.
- New lines of common wheat have been created, obtained with the participation of a synthetic amphiploid №530.
- Durum wheat lines with the participation of amphiploid 8BAP were selected and offspring of two-grained einkorn with the participation of amphiploid 5BAP were selected.
- Low-stemmed inbred rye lines are selected.

The applicant's contributions correspond to the requirements for acquisition the academic position "Associate Professor" and are his merit. Proof of this is the fact that in about 75% of the publications the applicant is the first author.

The citation rate of the applicant's scientific papers is also high - 11 citations are given in the world databases (D.12) and 5 citations in unreferred journals with scientific review (D.14).

6. Significance of the contributions to science and practice.

The significance of the contributions to science can be judged by the number of publications in the SCOPUS and Web of Science databases and by the number of citations of scientific papers. The applicant participates in the current procedure with 13 publications in

world databases, 8 of which are in renowned foreign journals with IF and 5 of them are published in Bulgarian journals, which are also in world databases, but do not have IF.

The citation rate of the applicant's works is very good. The applicant has indicated a list of citations, which according to the national scientometric indicators constitute 190 points, with a minimum requirement of 50.

The significance of the contributions to the practice can be indirectly judged by the applicant's participation in research projects. For the period 2012-2021, Dr. Daskalova has participated in 11 research projects - 10 of which were funded by the state budget within the research activities of the Technical University - Varna, and in project BG161PO003-1.2.04-0045-C0001 "Modernization of general faculty agro-ecological laboratory for analysis of the quality of plant products and food and assessment of the components of the environment ", financed under the Operational Program" Development of the Competitiveness of the Bulgarian Economy.

7. Critical notes and recommendations.

I have no critical remarks on the materials provided and on the applicant in the contest for "Associated Professor". I recommend to Chief Assist. Dr. Daskalova to continue her dedicated research and teaching work and maintain her high commitment and diligence in performing academic and scientific tasks.

8. Personal reviews and opinion of the reviewer.

I have personal impressions of the applicant's research and teaching activities. Over the years, Chief Assistant Dr. Daskalova has shown her high commitment and diligence in performing academic and scientific tasks.

I have the opinion that the applicant has high professional training, in-depth knowledge and is precise in performing his scientific tasks. Chief Assistant Dr. Daskalova with the developed diverse activity contributes to the establishment of the specialty.

CONCLUSION

The submitted scientific production and the applicant's documents are in accordance with the ZRASRB and the Rules for its application in the part for AP "Associate Professor". The applicant's contributions are sufficient for the AP "Associate Professor" and are his own work. The assessment of the overall activity of Dr. Daskalova is undoubtedly positive. Its scientific production is rich in original and significant scientific results with a practical focus. All this gives me reason to appreciate positively her overall research, publication and teaching.

On the basis of my acquaintance with the submitted scientific papers, the applied scientific and implementation contributions and the fulfillment of the minimum national requirements, I find it justified to propose **Chief Assist. Dr Nadia Georgieva Daskalova to ocuppy the academic position of "Associate Professor"** in in the professional field 6.1 "Plant growing", in the scientific specialty "Breeding and seed production of cultivated plants" at the Department of Plant Production, Faculty of Manufacturing Engineering and Technologie, Technical University at Varna.

04.11.2021 г. **REVIEWER:**

TU - Varna /Assoc. Prof. Dr. Miglena Atanasova Drumeva/