

# CRITICAL REVIEW

by Assoc. Prof. Milka Asparuhova Nashar, PhD

Department of Biochemistry, Molecular Medicine and Nutrigenomics, Faculty of Pharmacy  
at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna,

in relation with a procedure for the award of the educational and scientific degree "Doctor"  
Field of higher education: 4. Natural Sciences, Mathematics and Informatics,  
Professional field: 4.3. Biological Sciences, Doctoral program: *Botany*

**Author:** Petya Boycheva Atanasova

**Department:** Department of Biology, Faculty of Pharmacy, Medical University of Varna

**Dissertation title:** "ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS IN THE  
REGION OF THE NORTH BLACK SEA COAST"

**Research Supervisor:** Prof. Dimcho Zahariev, PhD

**Scientific Consultant:** Prof. Dobri Ivanov, PhD

## 1. Overall presentation of the procedure

According to Order № P-109-333 / 06.08.2021 of the Rector of the Medical University - Varna I am assigned as a member of the Scientific Jury under the procedure for award of educational and scientific degree "DOCTOR" with candidate Petya Boycheva Atanasova.

The presented set of materials is in accordance with the requirements of the Law of the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for its the implementation and the specific requirements of the Regulations for the Development of the Academic Staff in Medical University - Varna. The dissertation was discussed and scheduled for defense on 27.07.2021 by the Council of Biology Department at Medical University - Varna.

The doctoral student participates in the procedure with 5 full-text publications that are related to the dissertation.

## 2. Biographical data and career development

In 1999 Petya Atanasova earned Master's Degree in Ecology at the Technical University of Varna. Between 2005 and 2019 she worked as a biologist and curator of plant collections and herbariums in the Botanical Garden of Sofia University "St. Kliment Ohridski"

Atanasova demonstrates her professional skills and competence in determining plant species, control and organization of production and cultivation of ornamental plant species, collection and storage of seeds, plant protection, agricultural techniques, conducting talks.

From March 2019 until now Petya Atanasova works as a biologist in the Department of Biology at the Medical University - Varna, where she is responsible for preparation of exercises in pharmaceutical botany for students in pharmacy and for assistant pharmacist students. In addition to the educational process she is engaged in the preparation and maintenance of herbarium specimens stored in the Department of Biology. Since August 2019, Petya Atanasova has been enrolled as a full-time doctoral student in the doctoral program "Botany" at the same department.

### **3. Relevance of the topic and expediency of the set goals and objectives**

The purpose of the submitted dissertation is to be made an ethnobotanical study on the use of medicinal plants for prevention, treatment and in the life of local residents of the Northern Black Sea Coast of Bulgaria (NBSC). Atanasova and her colleagues are engaged to conduct a survey about use of medicinal plants by the local population in everyday life, human and veterinary medicine, for culinary purposes, in folk traditions and rituals and others.

The use of medicinal and aromatic plants is deeply rooted in Bulgarian traditions. However, due to the factors such as world globalization, the overall impact of high technologies, urbanization and active migration processes there is increasingly noticeable loss of ethnobotanical knowledge about the medicinal plants and their use by the local population.

That is why I find this dissertation relevant and even significant from the point of view of the needs of recording of folk knowledge and preserving it for the future generations. In addition, the information gathered in this scientific work can be a valuable starting point for further research in the field of phytotherapy and ethnopharmacology.

In order to be achieved the aim of the study 5 tasks were set.

The work on the dissertation was supported from two research projects.

### **4. Analysis of the dissertation**

#### *Technical description*

The dissertation submitted for review was written on 177 standard pages, distributed in the separate chapters, as follows: Introduction with formulated aim and tasks - 2 pages, Review - 31 pages; Materials and Methods - 8 pages; Results and Discussion - 104 pages; Conclusions and Contributions - 2 pages; list of publications and participations related to the dissertation - 2 pages; References - 28 pages. The list of references includes a total of 354 titles (172 in Cyrillic and 182 in Latin). In addition, 12 legislative documents and 16 Internet sites were cited. The dissertation is illustrated with a total of 68 figures, 13 tables, as well as 8 appendices, containing photographic material and documentation related to the research.

#### *Literature review*

The literature review is presented in four chapters. In the first one the author makes a comprehensive review of the knowledge and use of medicinal plants in Bulgaria, referring to a lot of historical evidences and documents. Some of the subjects discussed in this part of the review are the taxonomic diversity of medicinal plants in Bulgaria the knowledge of poisonous, cultivated and imported from other geographical regions plants, as well as different areas of their usage. In addition, an overview of legislation and regulation documents is made.

In the next chapter, Atanasova reviews the state of ethnobotanical research in Europe, on the Balkan Peninsula, logically narrowing the focus to the state of the problem concerning ethnobotanical research in Bulgaria. The last two chapters are devoted to the geographical and demographic characteristics of the NBSC, respectively.

Literature review is written competently with accessible language and is an interesting and fascinating compendium of monographs value.

#### *Research methodology*

The applied methods are informative and adequate to the set aim and the set tasks. A face-to-face survey was conducted among 709 local residents from 32 settlements in the NBSC, and the manner of conducting the survey and the groups of questions included in it are routine for



this type of survey. In addition to field ethnobotanical work, a documentary method has been applied by which the author integrates information about demographic factors, taxonomical determination of samples, including the identification of poisonous plants and last but not least for elucidation of the conservation status of medicinal plants indicated by the respondents. The applied statistical analyzes and post-statistical tests are adequately selected and ensure the reliability of the results.

#### *Results and discussion*

The results are presented in 14 sections, systematized according to the set tasks. A total of 333 species of medicinal plants have been described in terms of the recorded knowledge about their usage by the locals. All quantitative data documenting the answers given by the respondents are presented in electronic form to one of the appendices.

The diversity of medicinal plants in the NBSC was assessed by taxonomic indicators, diversity of life forms, biological types, phytogeographical origin, conservation status. All presented data are compared with those relating to the nearest floristic region - Northeastern Bulgaria. A detailed demographic analysis of the respondents included in the survey was also made. The data from the survey are analyzed and presented in separate parts, according to the areas of application. The analysis covers a total of 10 different areas of application of medicinal plants by local residents based on different demographic factors. At the end of each section a summary is made in the form of ethnobotanical analysis and comparison of the obtained results with other similar ethnobotanical studies.

The most medicinal plants pointed by the respondents are reported for use in human medicine followed by the application for culinary purposes. Some of the most interesting and informative results are: the pointed some typical spice plants for phytotherapy usage that is not described so far by other similar studies in Bulgaria; 98 species of medicinal plants are identified, as new for the region of the NBSC in ethnobotanical terms; some interesting culinary applications of medicinal plants specific to certain settlements in the NBSC are documented, as well as some applications preserved by folk beliefs and rituals.

In almost every section of this chapter, the author presents data on the level of awareness of local residents about the species that have a special regime of conservation and collection. Not without concern the author raises the question about the low level of awareness among locals concerning conservation status of some plant species.

The section "Results and discussion" ends with a conclusion, which is an integrated summary of the most significant results and is a link to conclusions and contributions.

#### *Conclusions and contributions*

The conclusions are presented clearly and logically in accordance with the obtained results. I accept the formulated contributions without remark. In my opinion the recommendations made by the author emphasize the relevance and importance of the research and the contribution of the results.

### **5. Evaluation of publications related to the dissertation**

Petya Atanasova applied for the procedure with 5 full-text publications related to the dissertation. Three of them are published in journals indexed in Scopus / Web of Science and have a Q4 according to SJR, which meets the required scientometric minimum for the award of Doctoral degree. The results of the dissertation have been reported in 3 scientific forums - one

abroad and two in Bulgaria. In the in the author list of three of the publications and in the conference participations Atanasova is at first place, which emphasizes her personal contribution to the development of the dissertation.

#### **6. Abstract**

I am familiar with the content of the abstract and I find that it is made according to the requirements and reflects the main results achieved in the dissertation.

#### **CONCLUSION**

In my opinion the presented dissertation could be considered as a source of rich database of ethnobotanical knowledge about the use of medicinal plants by locals on the North Black Sea Coast. Moreover, the obtained results could be a start point of further investigations in ethnopharmacology and phytotherapy fields. I confidently give my positive assessment of the research presented by the above peer-reviewed dissertation, abstract, results and contributions, and I propose to the Scientific Jury to award the educational and scientific degree "DOCTOR" to Petya Boycheva Atanasowa in a doctoral program "Botany".

September 17, 2021  
Varna

Reviewer:



/Assoc. Prof. Milka Nashar, PhD/