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REVIEW

Regarding the competition for the academic position of "Associate Professor" in the field of higher education 7. "Health and Sports", professional field 7.1 "Medicine" in the scientific specialty "Hygiene", for the needs of the Department of Microbiological Factors

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In the competition for the academic position of "Associate Professor" in the field of higher education 7. "Health and Sports", professional field 7.1 "Medicine" in the scientific specialty "Hygiene", for the needs of the Department of Microbiological Factors, at NCPHP, as the only candidate participates Chief. Assistant Dr. Vessela Ivanova Georgieva from NCPHA. The documents submitted for the competition have been prepared in accordance with the Law on its implementation and the Regulations for its implementation.

1.General data about the career development of the candidate

Chief Assistant Dr. Vessela Ivanova Georgieva was born on July 5, 1966 in Sofia. He graduated from Sofia University "Sv. Kliment Ohridski ", Faculty of Biology in 1991, with a master's degree in Biology and a narrow specialty "Hydrology and Water Protection". After successfully defending a dissertation on "Biological contaminants in the hygienic assessment of bottled water" received an educational and scientific degree "Doctor" in "Hygiene" in 2014 at the National Center for Public Health and Analysis /NCPHA/.

Dr. Vessela Georgieva's career development began in 1992 at the National Center for Public Health and Analysis as a biologist, where she worked in the "Analytical and Laboratory Activities" Directorate, "Microbiological Factors" Department until 1998. From 1998 to 2010 he was a research associate in the same department and directorate. From 2010 to 2013 she was appointed as a senior assistant in the same directorate. From 2014 to the present, he has been the Head of the "Microbiological Factors" Department, as a Chief Assistant, md, at the NCPHP, "Analytical and Laboratory Activities" Directorate. Dr. Georgieva has very good communication skills acquired during the entire work experience and especially in connection with the training courses. She has the skills to prioritize tasks and

a constant desire to improve the quality of work in the work atmosphere. He has a strong sense of responsibility towards both work and colleagues. The good knowledge of the normative regulation, regulating the indicators and norms in the tested samples of different nature is a result of the great practical experience in the field of sanitary microbiology. Good command of Microsoft Office - Windows, Excel, Power Point, Internet and good command of Russian and English is a guarantee for successful presentation of research results in national and international forums.

2.General description of the submitted materials

Publications:

In the competition for "Associate Professor" Ch. Assistant Professor Dr. Vessela Georgieva participates with a total production of 27 works, grouped as follows:

- 10 are published in publications, that are referenced and indexed in world-renowned databases of scientific information (Scopus and Web of science),

- 17 have been published in non-peer-reviewed journals with scientific peer-review or in edited collective volumes,

Projects:

Dr. Georgieva participates in 4 national and 3 international projects, participates in 2 national programs and in 1 program of Sofia Municipality.

Scientific conferences and congresses:

There are 14 participations with reports or posters, for 13 of which evidence is presented - programs, title pages and summaries.

The personal participation of the candidate in the reviewed total of 27 works is illustrated by the fact, that there are 5 independent articles, in 8 he is the first author, and in the others he is next.

Training courses:

Since 2014, Dr. Georgieva annually organizes training courses from the "Program of courses for continuing specialization of medical and non-medical specialists" of NCPHA. The topics of the training are related to the microbiological research and interpretation of the results in water, cosmetics, swimming pools; changes in the regulatory framework and methods; validation /verification of the microbiological methods applied in practice. They are visited with great interest by specialists from the District health inspection /RHI/ and Water Supply and Sewage Companies, as well as from other private laboratories.

- Dr. Georgieva participates as a lecturer in the basic course "Microbiology", module "Sanitary Microbiology" - for the acquisition of the medical specialty "Microbiology" at NCIPD.

Others:

Translates ISO standards from English to Bulgarian, assigned by TC 15 to Bulgarian Institute of Standardization.

The hydrobiological analyzes performed over the years in samples of dam and bottled water and in soft drinks present data that are without analogue in the system of the Ministry of Agriculture. They have been successfully advertised in scientific forums and in publications.

3. Information on fulfillment of the minimum national requirements and relevant evidence /7.1, 7.2, 7.3/.

7.1. List and copies of publications in publications, that are referenced and indexed in a world-famous database of scientific information.

- Requirement 100 points, Dr. Georgieva has 277 points.

7.2. List and copies of publications in publications in unreferred journals with scientific indexing or published in edited collective volumes.

- Requirement - 200 points, Dr. Georgieva has 228.5 points.

7.3. List of citations. Copies of citing articles. A reference from the central medical library is attached.

- Requirements - 50 points, Dr. Georgieva has 145 points.

The applicant shall meet the minimum national requirements by providing sufficient evidence.

4. List of participations in scientific projects and attached evidence for which is available.

Dr. Georgieva's participation in 4 national and 3 international projects is indicated in the report. Participates in 2 national programs and in 1 with Sofia Municipality.

In the presented list some projects are not given correctly - № 2, 5, 6. The contracting authority and the contractor are not specified. There is not enough information in the list for international projects and programs /7/.

The participation of Dr. Georgieva is documented when participating as a project manager at the research fund, under № 1 and an official note for the applicant's participation in a project with the Ministry of Environment and Water, specified, under № 5.

5. List of participations in scientific forums and copies of materials from participations in scientific forums.

Dr. Georgieva presents her scientific knowledge through participation in 13 scientific forums, through reports and posters. The programs with the abstracts from the scientific forums are presented as evidence for participation.

6. Teaching activity of the candidate

A reference for the teaching activity of Dr. Vessela Gergieva is presented. The report shows that from 2014 to 2020 and currently leads courses in accordance with the "Program of courses for continuing specialization of medical and non-medical professionals" of NCPHA, and participates as a lecturer in the main course "Microbiology", module "Sanitary Microbiology - for acquiring the medical specialty "Microbiology" at National Center for Infectiouns and Parasitic diseases.

As a supervisor and lecturer, Dr. Georgieva presents regulations, methods for testing drinking water, cosmetics and more. It also organizes individual training of employees from the company "Biochim Lab" – Montana-town, related to microbiological research in the analysis of water and food.

For the teaching activity of the candidate are presented official notes from NCPHA and NCIPD.

7. Main activities and responsibilities in the field of work

Dr. Georgieva's research activity began in 1992, when she started working at the National Center for Environmental Protection in the Department of "Microbiological Environmental Factors". Since then he has been conducting microbiological analyzes in the field of sanitary microbiology. Sanitary microbiology is a branch of medical microbiology and studies bacteria in water, soil and air, in food, in cosmetics, in environmental objects that people use in their life and work.

The main goal of the conducted sanitary-microbiological analyzes is to support the hygienic assessment of the external environment by observing sanitary-microbiological indicators and norms in order to protect human health.

In addition to microbiological tests, the nature of the problem requires conducting hydrobiological analyzes, which was helped by the acquired specialization in higher education: hydrobiology and water protection.

The whole practical and research experience of Dr. Georgieva is in the field of sanitary microbiology and is related to the protection of public health.

The main activities and responsibilities of Dr. Georgieva are related to:

- Carrying out microbiological and hydrobiological analyzes of samples from drillings, tap water, bottled water, swimming pools, cosmetic products, sludge from Wastewater treatment plants, etc.

- Research activity - participation and guidance in research topics and tasks.

- Learning activity - annual participation in training courses on current issues related to the main activity.

8. Information on the main necessary contributions of the candidate Dr. Georgieva.

- Microbiological examination of surface water bodies, water supply settlements, tap water, drilling, bottled water

Over the years, Dr. Georgieva has participated in the study of several dams for water supply – "Iskar" Dam, "Dyakovo" Dam, "Asenovets" Dam and others.

In 1999-2000 topic has been developed for the condition of the "Bebresh" dam, with a view to the water supply of the Botevgrad town. As a result of the chemical, microbiological and hydrobiological analyzes, a hygienic assessment of the condition of the dam and the three rivers feeding it was made /14/.

In order to improve the ecological status and prevent the burden of anthropogenic pollution, hygienic assessments were made in a similar way on two of the largest rivers in Bulgaria - the Iskar river and the Danube river. /1, 11/.

Microbiological analysis of water samples, especially when it comes to water consumed by humans, has always been particularly relevant. The aim is to assess whether a water meets the criteria for drinking and whether it will be harmless to human health when drinking it. In general, the water from the water supply networks of larger settlements meets the regulatory requirements. These are usually dams that have been treated or chlorinated.

The water supply of small settlements is problematic, especially when they draw water from drilling wells. Not infrequently such samples have discrepancies in microbiological indicators, which is a signal for the water companies and RHI to take timely action. Due to the importance of these tests, the candidate participates in the testing in laboratory practice of new microbiological methods /16, 17/.

Interesting and relevant for the development of active research are bottled waters - mineral, spring, table. They are the only alternative source of drinking water in many of the settlements with poor tap water quality. It is very important that this type of product meets certain requirements set out in European and national documents.

As a result of a large-scale study of Bulgarian bottled water conducted at the National Center for Public Health and Analysis, which began in 2000, over 14 years more than 3000 water samples were tested - from the deposits themselves and bottled. Thanks to this study, in which Dr. Georgieva takes an active direct part, a database has been accumulated and important conclusions have been made related to the qualities of Bulgarian bottled waters. The sources and routes of secondary contamination of these products in the bottling process are clarified and the most common deviations in microbiological parameters are established. The findings are confirmed by similar studies published by other researchers around the world. 3 monitoring schemes have been created for bottling companies. Everything that has been done on this topic is related to the practice and for the benefit of the producers /6, 21, 22/.

-Microbiological examination of cosmetic products

In recent years, very relevant among consumers are cosmetic products containing natural ingredients. This type of cosmetics turned out to have characteristic specifics that must comply with current regulations. It is in this direction are the researches that have been conducted by the candidate in the last few years, as some of them have been presented at scientific forums, and others - published /9/.

-Microbiological examination of sludge from wastewater treatment plants / WWTP /, bio-waste and soil improvers

Sludge obtained as a result of biological treatment of wastewater, such as composts, various soil improvers - liquid fertilizers, fertilizer mixtures, etc., are subject to microbiological control. In order to prevent their transformation into sources of spread of pathogenic bacteria and diseases, there are strict norms for the absence of pathogenic bacteria and helminth eggs in them, and with regard to indicator microorganisms - certain quantitative restrictions specified in the legislation.

The analyzes and researches, which have been conducted and are still being conducted by Dr. Georgieva, give results and confirm, that with proper treatment these products are a safe and good alternative to artificial fertilizers /7, 8, 15, 23, 24, 27/. Their application in agriculture restores the disturbed balance of organic matter and improves the quality of soils.

Dr. Georgieva successfully participates in conducting microbiological analyzes, aimed at hygienic assessment of children's sandstones and sand from regulated beaches on the Bulgarian Black Sea coast /10, 25, 26/. Both topics are of the Public Health and Health Risk Directorate at the National Center for Public Health and Analysis. The conducted research

and the conclusions made are of exceptional importance and scientific contribution, as for the first time such data for Bulgaria are provided.

-Hydrobiological research of surface water bodies, water supply settlements and water bodies used for recreation and fishing

In connection with the development of scientific and applied topics, in which specialists from different units of NCPHA participate, in certain stages of professional development the candidate has to perform not only microbiological tests, but also hydrobiological analyzes in studying the hygienic condition of different dams. Dams used for water supply of settlements, subject of studies in which Dr. Georgieva takes part, are "Iskar" Dam, "Dupnitsa" Dam, "Bebresh" Dam, "Studena" Dam, and for recreation and fishing – "Bistritsa" dam, "Pchelina" dam, etc. Hydrobiological analyzes are a source of data for the phytoplankton communities inhabiting the surveyed reservoirs. The best indicators of the ecological status of dams are the species of microscopic algae that have developed in one reservoir. These scientific developments aim to obtain an objective assessment of the state of water bodies, development of blue-green, algae producing cyanotoxins, quantification of cyanotoxins themselves and informing the public, relevant municipalities and institutions /2, 4, 14/.

An assessment was made of the ecological condition of the Iskar River in the conditions of anthropogenic pollution, by examining the water benthic communities of the river in the conditions of anthropogenic pollution /11/.

In a collection of methods for hygienic research - volume 3, the candidate publishes the two main hydrobiological approaches applied in the study of surface water bodies /18, 19/.

-Hydrobiological research of bottled water and soft drinks

In addition to microbiological problems, bottled water and soft drinks have been found to contain microscopic algae and various molds, that come into contact with water or the environment and make finished products unfit for consumption. Over the last ten years, a lot of interesting data on this issue have been accumulated by the candidate, thanks to the conducted microbiological and hydrobiological analyzes. They are published in publications, that are read by manufacturers of bottled water and soft drinks. The aim is for the established facts and conclusions to reach and be useful for this branch of the food industry /3, 5/.

The hydrobiological analyzes performed over the years by Vessela Georgieva in samples from drinking dams, recreational water bodies, bottled water and in soft drinks provide data, that are unparalleled in the system of the Ministry of Health.

-Other offerings

A microbiological method has been developed for the analysis of antibiotics in the air at work in a scientific topic on the content of antibiotics in the air in rooms where antibiotics are produced /12, 13/. Another interesting problem on which experience has been gained by Dr. Georgieva is a study for the presence of microorganisms of the genus *Legionella* in water samples from cooling installations in various industries. This genus of bacteria is relevant because it includes *Legionella pneumophila,* the cause of legionnaires' disease, also known as legionellosis - an infectious disease with a potentially fatal end /20/.

9. Assessment of the personal contribution of the candidate

Dr. Georgieva appears at the announced competition with a sufficient number of meaningful scientific publications, which make an impression with a well-chosen methodological approach to research, a clear goal and an in-depth interpretation of the results. This is possible with the high professional training that the candidate has. His research in collective developments stands out well and his specific participation in the study problems is clearly distinguished. The personal contribution of the candidate is strengthened by the fact that he is a leading author in a number of publications and participates in many scientific and applied contractual tasks - domestic and international. The topicality of the presented scientific articles is supported by the fact, that they are read and quoted by other scientists.

10. Critical notes

With Dr. Georgieva's participation in national and international projects, projects under № 2, 3, 4, 5, etc. were not presented correctly. The contracting authority and the contractor should be indicated.

The writing of the publications is not unambiguous. Usually the last name of the author of the article is written, followed by the first name with the first character.

11. Personal impressions

I know Dr. Georgieva after defending her doctoral dissertation. She quickly grew up as a researcher. He built himself as a good scientist - a microbiologist, characterized by high professionalism and extensive research experience. She is a respected colleague in the ranks of the team where she works. It strives to apply the innovations in its research work and to pass on its experience to younger scientists, which shows the good professionalism and high responsibility of scientists.

12. Conclusion

I positively evaluate the overall scientific, scientific-applied, publishing and pedagogical activity of the candidate, due to the scale of the research and the significance of the received scientific and scientific-applied contributions.

The candidate for the competition Chief Assistant Professor Dr. Vessela Georgieva presents a rich scientific production with original scientific and applied contributions in the field of microbiology and hygiene. Dr. Georgieva manages to create a good collaboration for collective development with scientists and specialists from other institutes. Her successful work and the obtained results allow her to participate in many forums.

With her overall scientific, teaching and publishing activity she fully meets the requirements of the academic position "Associate Professor", according to the Law for the development of the academic staff in the Republic of Bulgaria.

This gives me reason to propose to the esteemed members of the scientific jury of the competition Chief Assistant Professor Dr. Vessela Ivanova Georgieva to be elected "Associate Professor" in the field of higher education 7. "Health and Sports", professional field 7.1 "Medicine" in the scientific specialty "Hygiene", for the needs of the department "Microbiological factors".

20.05.2021

REVIEWER:

Prof. Dr. Svetla Marinova