

REVIEW



regarding a competition for occupying the academic position of “Associate Professor” in the field of higher education 6. Agrarian Sciences and Veterinary Medicine; professional area 6.2. Plant Protection (Phytopathology), announced in the State Gazette, issue number 62 from 21.07.2023, with an only candidate applying for the position – chief assistant professor Neshka Georgieva Piperkova, PhD from the Agricultural University of Plovdiv (AU Plovdiv)

worked out by professor Petar Nikolov Chavdarov, PhD, from the Institute of Plant Genetic Resources in the town of Sadovo, who has been assigned a member of the scientific panel in accordance with Order № ПД-16-902/25.09.2023 issued by the Rector of AU Plovdiv

Brief introduction of the candidate:

The candidate applying in the present competition was born in Plovdiv on 22.08.1961. In 1987 she graduated from *Vasil Kolarov* Higher Institute of Agriculture in Plovdiv in *Plant Protection* major. Since 1988, for a period of 10 years, she has worked as a professor assistant in the Phytopathology Department, and in 1999 she acquired the position of chief assistant professor. In 2013 the candidate successfully defended a dissertation work entitled *A Study on Peach Curliness* and was awarded the educational and scientific degree of “Doctor”. Chief Asst. Piperkova has supervised more than 25 graduates; she has been a leader of various Master`s degree courses.

Scientometric indicators:

Chief Asst. Neshka Piperkova, PhD, participates in the present competition with the following: a dissertation work for awarding the educational and scientific degree of “Doctor”; 24 research papers, published in scientific journals referenced and indexed in the relevant databases, as well as non-referenced journals with scientific review. Seven of the research papers have been published in journals being included in the web of science quartiles – two in Q1 (European Journal of Plant Pathology, Plants), three in Q2 (Plant Disease, Molecules, Acta Agrobotanica), one in Q3 (Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis) and one in Q4 (Ecologia Balkanica). Six of the papers have been published in impact factor journals, and the rest – in Agrarian Sciences journal, Turkish Journal of Agricultural Science,

Phytomedica, Plant Protection, etc. In most of the research articles Chief Asst. Piperkova has been presented as a first author.

In the period 2017-2019 the candidate was a leader of a project financed by AU Plovdiv, as well as a participant in one national and one international project. From 2016 to 2019 she participated in a mutual project with the Fruit Growing Institute – Plovdiv.

Plant diseases contribute to the limitation of plant species variety being cultivated in a particular region or country, especially when plants are highly sensitive and susceptible. The type and quantity of losses depend on plant type, the pest, the environmental conditions, the control measures, as well as the combination of all factors.

The scientific works submitted for review in the present competition represent research data in three main directions:

- Diagnostics and determination of aetiology of new plant diseases;
- Clarifying the pathologic changes in the system plant-pathogen;
- Identifying the potential of some essential oils and antagonists in order to include them as bio-pesticides into the integrated control against fungal phyto-pathogens.

Due to different research directions, the scientific contributions can be divided into the following groups:

► **Original scientific and applied contributions**

- *Dactylonectria pauciseptata* plant pathogen fungus has reported for the first time in Bulgaria, which causes *Black Foot* – a black root rotting on grapevines and plums. The identification has been done on the basis of morphological and cultural features, Koch's postulates (incl. pathogeny tests) and genome sequencing. *Dactylonectrya pauciseptata* represents a potential risk for the above mentioned plant species cultivated in greenhouses and on the field.

- *Cherry virus Trakiya* (CVT) has been reported for the first time in Bulgaria and worldwide, which was found on the cherry crops, more especially on their leaves (different malformations and chlorotic spots). This new two-cistronen virus probably refers to *Picornavirales* order. It has been identified by the method of Next Generation Sequencing – NGS after analysing common RNA extracted from cherry plants, which showed viral symptoms (stunted growth, abnormal development of buds, decreased fruit quantity) and which were cultivated in the southern and central part of Bulgaria.

- For the first time there have been registered symptoms of powdery mildew on Myrobalan 29C branched rootstock (*Prunus cerasifera* Ehrh.) The preliminary study related to *Podosphaera* sp. outbreaks on Myrobalan 29C brings up a matter about the health status of the planting material, as well as the crops of stone fruits, taking into consideration the potential host plants – cherry and plum.

- For the first time in Bulgaria it has been reported about outbreaks of *Pestalotiopsis* sp. on American blueberry (*Vaccinium* spp.). The pathogen causes stem and branch cankers and leaf spots. Its presence, as well as the presence of the rest pathogens, provokes the need of regular monitoring on blueberry crops, which have been grown on larger areas over the last few years.

► **Confirmed scientific and applied contributions**

- In the process of examination of biochemical parameters (including the activity of antioxidant enzymes, guaiacol peroxidase, syringaldazine peroxidase and catalase; the concentration of free proline and antiradical activity) it has been reported for the first time that biochemical changes could be found not only on infected leaves, but also on distally located healthy leaves. The researcher has assumed that *Taphrina deformans* probably goes under systemic development, which has changed the assumption about its pathogenesis.

- The researcher has confirmed other authors' results, who have established the antagonistic activity of *Trichoderma viride* (isolate Tr 6) towards *Macrophomina phaseolina*, *Fusarium* spp.. An original study has been provided on the activity towards *Taphrina deformans*.

- *Juniperus* spp. essential oils have been studied and was established that they show temperate activity against some pathogens: *Fusarium* spp., *Botrytis cinerea*, *Colletotrichum* spp., *Rhizoctonia solani* and *Cylindrocarpum pauciseptatum*.

Nine of the candidate's research papers have been used as reference sources in 42 national and international indexed journals.

Recommendations: I would recommend Chief Asst. Neshka Piperkova to expand her future work with supervising doctoral students, if possible, who could continue research studies in the particular scientific field. I do not have any critical notes or questions to the candidate.

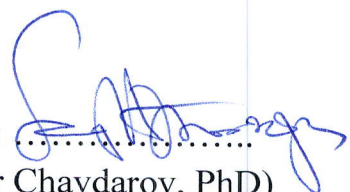
Conclusion: Taking into account the analysis on the candidate's academic, research and applied work, I consider that Chief Asst. Neshka

Piperkova, PhD, meets the requirements of ADASRB, RAADARB, and the Regulations of AU Plovdiv for its application.

The above mentioned gives me ground to evaluate **POSITIVELY** the candidate's whole work.

I allow myself to propose the honourable Scientific Panel to vote also positively, and the Faculty Council of the Faculty of Plant Protection and Agroecology at AU Plovdiv to select Chief Asst. Neshka Piperkova, PhD, for the academic position of "**Associate Professor**" in the professional area 6.2 Plant Protection; scientific specialty: Phytopathology.

Date: 10.11.2023
Sadovo

Review created by: 
(Professor Petar Chavdarov, PhD)