

REVIEW

АГРОПЕД УНИВЕРСИТЕТ ГР. ПЛОВДИВ	
Вх. № 7076	Дело № 17
Получено на 04.05.2023	

regarding the competition for "associate professor" in the scientific specialty Ecology and ecosystem protection, announced in SG no. 102123.12.2022 with candidates depending on the submitted applications - ch. assistant professor Dr. Plamen Ivanov Zorovski, Department of "Agroecology and environmental protection", Agricultural University - Plovdiv and ch. assistant professor Maria Krasimirova Chunchukova, Department of "Agroecology and environmental protection", Agricultural University - Plovdiv, appointed according to Order No. RD 16-245/22.02.2023 of the Rector of Agricultural University - Plovdiv as a member of the scientific jury

Reviewer: Prof. Katja Naneva Velichkova, Thrace University - Stara Zagora, area of higher education 4. Natural sciences, mathematics and informatics, professional direction 4.3. Biological sciences, scientific specialty Ecology and protection of ecosystems appointed as a member of the scientific jury by order No. RD-16-245/22.02.2023 of the Rector of the Agricultural University.

1. General data on the career and thematic development of the candidates

Ch. assistant professor Plamen Ivanov Zorovski was born on 22.03.1981 and in 2004 graduated from AU - Plovdiv with a bachelor's degree in General Agronomy, and in 2005 master's degree "Crop Production". From 2003 to 2006, he worked as an agronomist at the "Izgrev" CHZPPK, Knezha. In 2013, he defended his dissertation on the topic "Study on the biological and economic qualities of oat varieties in relation to their use as a healthy food for humans". In the period 2009-2011, he was an expert at the research center of AU - Plovdiv. Since 2011, he has been elected as an assistant in the department of Agroecology and protection of agroecosystems and the population; Agricultural University - Plovdiv, and in 2013 as a chief assistant. He speaks russian and english language.

Ch. assistant professor Maria Krasimirova Chunchukova was born on 11.11.1981 and in 2006 graduated with a bachelor's degree in Ecology and Environmental Protection, and in 2007 with a master's degree in Landscaping - exterior and interior design. From 2008 to 2013, she worked as a technical assistant at Filikon 97-AD and Intertorgo OOD Plovdiv. In 2017, she obtained a PhD in Ecology and Ecosystem Protection from the National Academy of Sciences, and since 2018 she has been the main assistant at AU - Plovdiv. She speaks russian and english language.

2. General description of the presented materials.

In the competition for " associate professor " ch. assistant professor Plamen Zorovski participated with 42 scientific publications and 1 published book. These posts

are grouped as follows:

Scientific publications on the nomenclature specialty - 42 issues, of which:

- *Publications related to the doctoral dissertation - 7 issues, which are not subject to consideration;*

- *Publications with impact rank – 3 items*

- *Publications in peer-reviewed and refereed scientific journals – 21 issues;*

- *Publications in conference proceedings – 11 issues;*

- Published book based on a protected dissertation work for awarding the educational and scientific degree of Doctor - 1 issue;

The personal participation of ch. assistant professor Plamen Zorovski in the mentioned 43 works is illustrated by the fact that 2 are independent, in 15 he is the first, in 11 he is the second, and in the remaining 15 he is the third and subsequent author.

Ch. Associate Professor Maria Chunchukova participated with 34 scientific publications in the current competition, which publications are grouped as follows:

Scientific publications on the nomenclature specialty - 34 issues, of which:

- *Publications related to the doctoral dissertation - 2 issues, which are not subject to consideration;*

- *Publications with impact factor and impact rank – 2 items*

- *Publications in peer-reviewed and refereed scientific journals – 21 issues;*

- *Publications in conference proceedings – 9 issues;*

The personal participation of ch. assistant professor Maria Chunchukova in the mentioned 34 works is illustrated by the fact that 2 are independent, in 18 - she is the first, in 13 - she is the second, and in the rest 1 - is the third and next author.

3. Main directions in the candidate's research work. Demonstrated skills or aptitude for leading scientific research (project management, attracted external funding, etc.).

Ch. assistant professor Plamen Zorovski participated in 17 national scientific projects (6 national projects at the Scientific Research Institute of the Ministry of Education and Culture, 4 university projects, 2 infrastructure projects, 6 projects with external organizations) and 1 international project.

Ch. assistant professor Maria Chunchukova has participated in 8 national projects (4 national projects from the Ministry of Education and Culture, 2 university projects, 2 with external funding).

4. Evaluation of the pedagogical preparation and activity of the candidate. Its role in the training of young scientific personnel.

The teaching activity of both candidates is excellent.

Dr. Plamen Zorovski has more than 12 years of teaching experience and gives an average of 500 hours of bachelor's and master's classes per year. Participated in the preparation of a curriculum for a new elective discipline: "Environment and tourism" - for the specialty "Sustainable nature use and ecological tourism", full-time studies, OCS "Master".

Dr. Maria Chunchukova has over 8 years of teaching experience and annually gives

over 650 hours of lectures, exercises and seminars at OKS Bachelor in 6 specialties and in 3 Master's programs. She participated in the preparation of the curriculum of the optional subject "Invasion Ecology" in the Bachelor's College of Economics and Business and in 4 curricula in the College of Economics Master's (Biodiversity and Ecological Risk; Biodiversity, Ecology and Conservation of Freshwater Ecosystems; Aquatic Ecosystems and Sustainable Nature Management; Protected Species in Tourist Areas).

Dr. Zorovski indicated that he was the scientific supervisor of 20 graduates from the following majors: "Ecology (Bachelor's Degree)", "Biological Agriculture" (Bachelor's Degree), Master's Course "Biological Agriculture", Master's Course "Ecology of Settlement Systems", "Plant defense" (bachelor's degree), a reference is presented for 7 of them.

Dr. Zorovski actively participates in the management of the Faculty of Plant Protection, as a member of the Faculty Council, a member of the Control Council at the Agricultural University - Plovdiv, a member of the general assembly of AU - Plovdiv, scientific secretary of the faculty council of the Department of Agroecology and Environmental Protection environment at the AU - Plovdiv, participant in a working team at the Faculty of Research and Development at the AU - Plovdiv on the preparation of a Self-Assessment Report (SAK), for program accreditation of the PN. 4.4. Earth Sciences, as well as in the Program Accreditation Self-Assessment Report of 6.2. Plant protection, senior expert in scientific research center at AU-Plovdiv.

Ch. assistant professor Maria Churchukova was the academic supervisor of 15 graduates from OKS Bachelor (6) and OKS Master (9).

Ch. assistant professor Maria Churchukova participated in 5 international conferences in Bucharest (Romania) and 1 scientific forum in Plovdiv (Bulgaria).

Ch. assistant professor Plamen Zorovski participated in 6 international conferences in Budapest (Hungary), Novi Sad (Serbia), Jahorina (Bosnia and Herzegovina), Bucharest (Romania), Edirne (Turkey) and 2 scientific forums in Plovdiv and Troyan (Bulgaria).

5. Significance of the obtained results, proven by citations, publications in prestigious journals, awards, membership in international and national scientific bodies, etc.;

The significance of the results obtained from the scientific studies in which the two candidates participate is evident from the citations of researchers from Bulgaria and abroad.

Dr. Churchukova presents 69 citations in scientific journals and dissertations, and Dr. Zorovski 21 citations in scientific journals and dissertations.

Dr. Plamen Zorovski is the author of 3 articles with an impact rank in the journals Journal of Central European Agriculture (SJR 2012 – 0.23, Q3), Bulgarian Journal of Agricultural Science (SJR 2020 – 0.248, Q3), Journal of Hygienic Engineering and Design (SJR 2021 – 0.16, Q4).

Dr. Maria Churchukova is the author of two articles - one with an impact factor (IF - 0.731) in the journal Helminthologia and one with an impact rank (SJR 2019 - 0.164, Q3) in the Bulgarian journal of veterinary medicine.

In 2014, through the Erasmus+ program ch. assistant professor Plamen Zorovski is studying at a university in Wageningen, the Netherlands. Dr. Zorovski is a member and secretary of the ecologist's club at the Regional Scientific and Technical Union - Plovdiv.

6. Significance of contributions for science and practice. A motivated answer to the question to what extent the candidate has a clearly defined profile of research work;

The scientific and applied contributions of ch. assistant professor Plamen Zorovski are in the field of biological agriculture, agroecology, product quality and are related to the following studies.

1. Organic farming

- For the first time, parameters of the growth and development of ancient forms of spelled wheat, single-grain and double-grain spelled wheat have been established in the conditions of organic farming in the country.

- The productivity of grain and straw, the harvest index and the influence of various applied products for organic farming on the ancient wheats were established.

- The technical and economic efficiency of the application of different organic fertilizers in three types of wheat *Triticum monococcum* L., *Triticum dicoccum* Sch. and *Triticum spelta* L. under organic farming conditions.

- A positive economic evaluation of the application of the organic fertilizers Amalgerol and Litovit in the production of rice (*Oriza sativa* L.) has been established.

- The influence of the biological fertilizer Amalgerol, applied through seed treatment and vegetatively on the plants, on the germination, development, productivity and some quality indicators of the grain in bare-grain oats under the conditions of organic farming was established.

- A study was conducted of the offered Bulgarian and imported organic fruits and vegetables in the large retail chains in the territory of the city of Plovdiv.

2. Agroecological protection

- The dynamics of some soil parameters were tracked during field trials for the evaluation of combined herbicide preparations for weed control in corn, winter rape and common wheat.

- The efficacy of mixtures of soil and foliar herbicides in maize, wheat and canola was confirmed, as well as their selectivity in the three crops.

- It has been proven that the active substances dimetachlor, bifenox and metazachlor do not have a negative effect on the growth, development and yield of rapeseed hybrid Xenon.

- It has been established that the soil herbicides GardoprimPlusGold, Mistralflex and Stompnow in the applied doses have no phytotoxic effect on the studied 6 hybrids of sweet corn - GSS F1, Vega F1, Erica F1, HoneyBentam F1, Denitza F1, Challenger F1.

- It has been proven that the ecological products Humustim and Immunocytophyt help to overcome the herbicide stress after treatment with the foliar herbicides Derby super and Granstarv oat crops up to the 20th day after application of Granstar and up to the 40th day after application of Derby super.

- Phytotoxicity was found in Erica F1 sweet corn hybrid after application of foliar

herbicides for fodder corn, as well as high economic efficiency and profitability of wheat after application of new herbicide combinations against weeds in wheat crops.

3. Agroecology

- A correlation was established between growth and development with basic agrometeorological parameters in spring oat varieties, and that the conditions of the year were a factor having the most significant influence on the growth and yield of winter oats, followed by environmental conditions.

- Increased microbial activity was registered in the soil after treatment of spelled (*Tr. monococcum* L.) with the product Baikal EM in biological cultivation.

- It has been proven that the created flowering grass strips increase and maintain the biological diversity of insect pollinators, and their species composition in the agroecosystems has also been determined.

- A grass mixture of different flowering species "AU mixture" suitable for the conditions of Bulgaria was made in order to maintain the biodiversity of pollinators in the agroecosystems.

- The allelopathic potential of *Cuscuta* (*Cuscuta epithymum* L.) in alfalfa and starseed varieties was established.

4. Quality of production

- The influence of the environmental products Humustim and Immunocytotif on the content of essential amino acids, protein, starch and fat in the grain of winter and spring oat varieties was established.

- The relationship between yield and grain quality of Bulgarian and new oat genotypes for the agro-ecological conditions of Southern Bulgaria was determined.

- Correlational dependences between some grain quality indicators and yield have been established.

- The positive influence of the utilization of the green plant mass of sweet corn as fodder for increasing the milk productivity of Bulgarian Rhodope cattle, a traditional breed for the country, has been proven.

The scientific and applied contributions of ch. assistant professor Maria Chunchukova are in the field of ecology, biodiversity, bioresources and biomonitoring and cover the following scientific problems:

1. Scientific studies on concentration, circulation and the bioaccumulation of heavy metals and metalloids (Pb, Ni, Cd and As) in waters, sediments, liver, muscles and skin of dominant fish species of the Danube river freshwater ecosystem and their parasites

- New data are presented on the content of nickel, lead, arsenic in waters, sediments, *Pomphorhynchus tereticollis*, tissues and organs of both parasitized and non-parasitized fish species from the Danube River.

- New data are presented on the content of cadmium in water, sediments, tissues and organs of two species of freshwater fish (morunage (*Vimba vimba*) and uklei (*Alburnus alburnus*)) from the Danube River.

2. Scientific research related to ecology, biodiversity and the bioindication of parasites and parasite communities of fish from the freshwater ecosystem of the Danube River and Maritsa River.

- *Nicolla skrjabini*, *Ligula intestinalis*, *Acanthocephalus luci* and *Contracoecum*

microcephalum (larva) were found, which are reported for the first time from the host *Alburnus alburnus* for the Bulgarian section of the Danube River.

- *P. incognitus* and *R. denudata* were established and reported for the first time by host *A. brama* for the Bulgarian section of the Danube River.

- *A. isoporum*, *L. intestinalis* and *P. laevis* were detected and reported for the first time from host *A. alburnus* and *S. erythrophthalmus* for the Bulgarian section of the Maritsa River.

3. Scientific research on biomonitoring based on biological elements - macrozoobenthos, parasites and parasitic communities for their bioindicative role in the processes of eutrophication Osam River, Luda Yana River, Stryama River, Topolnitsa River, Ogosta River, Chepelarska River, Tamrashka River.

- A trematode *I. pileatus* was found, which is reported for the first time for a freshwater ecosystem of the Osam River in Bulgaria.

- Ossum River was found to be a new habitat for *A. isoporum* and *R. hellichi*.

- The Luda Yana River was found to be a new habitat for *Caryophyllaeides fennica*, *Acanthocephalus lucii* and *Rhabdochona denudata*.

- It was established that the Topolnitsa River and the Chepelarska River are new habitats for *Pomphorhynchus laevis*.

- The established parasitic species *Nicolla skryabini*, *Rhabdochona hellichi*, *Raphidascaris acus*, *Salmonema ephemeridarum* and *Schulmanella petruschewskii* are reported for the first time from the Tamrushka River and it is a new habitat for them.

4. First studies and new data on the biodiversity of parasites communities of *Abramis brama*, *Alburnus alburnus*, *Carassius gibelio*, *Chondrostoma vardarense*, *Leuciscus aspius*, *Scardinius erythrophthalmus*, *Silurus glanis* and their bioindicative value for the intensity of intermediate host populations and the integrity of food chains in the conditions of the specific ecological conditions of Tundzha River, in the middle and lower reaches

- The established *Acanthocephalus tenuirostris*, *Philometra cyprinirutili*, *Acanthocephalus anguillae*, *Eustrongylide excises*, *Caryophyllaeides fennica*, *Nicolla skryabini*, *Contracaecum* sp. and *Pomphorhynchus laevis* are reported for the first time by hosts for the Bulgarian section of the Tundzha River.

5. Scientific research on the biodiversity and ecological indicators of different parasitic communities of Lake Srebarna, Batak Dam.

- Five types of helminths *Diplostomum paraspithaceum* (larva) were found, *Diplostomum pseudospithaceum* (larva), *Tylodelphys clavata* (larva), *Posthodiplostomum cuticola* (larva) and *Paradiplozoon homoion*, which first reported by host *Blicca bjoerkna* about the lake Silver also for the territory of Bulgaria.

- Established *D. paraspithaceum*, *D. pseudospithaceum* and *P. homoion* first reported by host *Blicca bjoerkna* for the Balkan peninsula.

6. Scientific research on the ecological characteristics of populations and communities of *Phoxinus phoxinus* from the Bezbog glacial lake with first results for risk assessment as a result of the eutrophication of the freshwater ecosystem - first study of the helminth fauna of the hazel from the Bezbog glacial lake.

7. Scientific research on the status of Panicherry dam with new data on biodiversity and ecosystem status

- It was established that the Panicheri dam is a new habitat for *Ligula intestinalis* and *Pomphorhynchus laevis*, and that *Carassius gibelio* is a new host for *Ligula intestinalis* in Bulgaria.

7. Critical notes and recommendations

My recommendations to both candidates are in their future research activity to publish their scientific results in journals with impact factor and impact rank. Both candidates should be involved in writing a major subject guide that they teach students.

8. Personal impressions and opinion of the reviewer

I do not know either of the two candidates, but the materials presented to me by them show successful scientists and teachers who are developing very well in their field.

CONCLUSION

Based on the analysis of the pedagogical, scientific and scientific-applied activities of the two candidates, I consider that they meet the requirements of the ŽRASRB, PPZRASRB and the Regulations of the Agricultural University for its application for participation in the current competition.

The active research activity, their workload as teachers, their participation in scientific forums and scientific projects prove that ch. assistant professor Plamen Zorovski and ch. assistant professor Maria Chunchukova are distinguished scientists and teachers in the field of ecology.

All this gives me reason to positively evaluate their overall activity.

Both candidates are worthy of being appointed to the academic position of "Associate professor" and are distinguished by very good scientific achievements and teaching skills. For this reason, I recommend the leadership of the Agricultural University - Plovdiv to announce another competition for Associate professor in the field of higher education 4. Natural sciences, mathematics and informatics, Professional direction 4.4. Earth Sciences, Scientific specialty "Ecology and Ecosystem Protection" so that, after the decision of the Faculty Council, the unselected candidate can receive recognition and move to a higher academic position, which will only benefit the university.

27.04.2023

REVIEWER:.....

(prof. K. Velichkova)