REVIEW

concerning a competition for „Associate Professor" in the scientific specialty "Agriculture", announced in the State Gazette, issue 21 of 07.03.2023 with candidate Chief Assistant Professor Nesho Stoyanov Neshev, PhD, Agricultural University – Plovdiv

by Assoc. Prof. Dina Dadar-oolovna Atanasova, PhD, Institute of Agriculture – Karnobat, scientific specialty "Plant Protection" /Herbology/, appointed as a member of the scientific jury according to Order № RD 16-529/11.05.2023 signed by the Rector of the Agricultural University – Plovdiv

1. Brief presentation of the candidate

Chief Assist. Prof. Nesho Neshev, PhD, was born on April, 23, 1985 in the sity Karlovo. In 2009 he graduated as Bachelor specialty "Agronomy". In 2011 he received a master`s degree in "Plant Protection" at the Agricultural University – Plovdiv. During the period 2013 – 2016 he was a PhD student at the AU – Plovdiv. In 2016 he successfully defended a PhD thesis on the theme "Influence of mineral fertilization on productivity and quality of potatoes".

In 2019, he received an additional qualification in Professional Pedagogy at AU-Plovdiv. Chief Assist. Prof. Neshev works as an agricultural worker in construction and maintenance of drip irrigation systems, tobacco production, in a nursery for ornamental plants. Then he worked as an intern at IRGR - Sadovo. Since 2016, he has been working as an agronomist - examiner at the Center (AU – Plovdiv). After successfully passing a competition for a Senior assistant in 2019 and since 2020 to the present he has held the academic position of the Chief Assistant Professor. Dr. Neshev has good commands in English, has good computer skills, has several research awards in 2016 and 2018, participated in Erasmus+ specializations in Poland (2017) and Egypt (2019), participated in the NNP "Young Scientists and postdoctoral fellows" at AUP (2019).

2. General description of the scientific production

In the competition for the academic position of Associate Professor", Chief Assistant Professor Nesho Neshev, PhD, participates with a total production of 49 works, grouped as follows:

- *Scientific publications in the nomenclature specialty – **49** issues, including:*
- *Publications related to the PhD thesis – **8** issues that are not subject to review;*
- *Publications with IF – **9** issues;*

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

- *Publication in non-referred journal with scientific reviewing or in edited collective volumes* – **7** issues.

From the submitted certificate of compliance with the National Minimum Requirements, it is clear that the candidate covers, and in some groups of indicators, significantly exceeds the minimum number of points required to occupy the academic position of "Associate Professor".

The personal participation of Chief Assistant Professor N. Neshev PhD, in these works is illustrated by the fact that 5 are independent, in 13 – is the first, in – 22 is the second, third and next author.

The publications are written in a good scientific style, treat current issues and have a practical focus.

❖ *Teaching materials* – ***1***.

33 scientific papers are subject to analysis for the preparation of the current review.

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

Chief Assist. Prof. Nesho Neshev participates in two research projects at the Ministry of Education and Science, in 4 projects - at AU - Plovdiv, of which he was the head of one project - "Herbicide phytotoxicity in sunflower, rapeseed and ordinary pumpkin and possibilities to overcome it by means of biostimulants and foliar fertilizers" - to the Center for Scientific and Technical Research at AU-Plovdiv, 2017-2019.

4. Evaluation of the teaching activity of the candidate. His role in the training of young scientific personnel.

The general educational and teaching experience of Dr. Nesho Neshev is 4 years and 5 months and his study load for these years is a total of 2238.5 hours, i.e. he fulfills the required study load. His academic employment over the years averaged around 515 hours per year, with the last year – 560 hours.

Chief Assist. Prof. Dr. N. Neshev started working at the Agricultural University - Plovdiv as an agronomist - examiner at the CBIPRZ, Herbicides Department. Since January 2019, he has held the position of assistant, and since March 2020 - chief assistant, where he currently works and teaches the disciplines "Agriculture" and "Herbology" to students from the Agricultural University. He conducts experiments related to the subject of the department, participates in scientific research projects. He is the co-author of the study guide "Innovative plant protection products and fertilizers" (2018).

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

The number of noticed citations is 8, 6 of them are in periodicals abroad, 1 is in the proceedings of an international symposium and 1 is in the Bulgarian edition in English.
He is a member of four international organizations - European Weed Research Society (EWRS), Weed Science Society of America (WSSA), International Society for Horticultural Science (ISHS), Balkan Environmental Association (BENA). Participates in four working groups - three at EWRS and in one Excellent Science Days working group for increasing the potential of young scientists from Central and Eastern Europe,

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

The scientific research of Chief Assist. Prof. Nesho Neshev, are focused mainly on area agronomy and herbology.

The research is related to the influence of the predecessors and the monoculture cultivation of the main field crops - wheat, rapeseed and sunflower; fertilization for barley, coriander and potatoes; influence of fertilization in the cultivation of some field crops; studies on the efficacy and selectivity of herbicides in wheat, corn, sunflower and oilseed rape; herbicide phytotoxicity and possibilities for overcoming it by crop plants; the impact of herbicides on soil microbiological activity; studies on weed associations in sunflower; control of parasitic weeds in sunflower and winter oilseed rape.

Dr. Nesho Neshev has in-depth knowledge and a clearly defined profile of research work.

The candidate refers to the contributions as "scientific-applied", with which I fully agree. Some of the most important contributions, in my opinion, are the following:

1. Influence of predecessors and monoculture cultivation of the main field crops - wheat, rapeseed, sunflower and coriander;

The influence of different predecessors was investigated in winter oilseed rape, sunflower and coriander. The results show that the most suitable predecessor for these crops - winter wheat. Short monocultures with oilseed rape and sunflower are undesirable.

During a five-year cultivation of winter wheat variety Enola as a monoculture, the highest results in terms of productivity and grain quality were obtained in the first two growing years. In the next three years, these indicators begin to decrease, i.e. short wheat monoculture for two years can be used in a critical case.

2. Effect of fertilization on barley, potatoes and coriander

The efficiency of fertilizing with urea in barley variety Emon was investigated. It has been confirmed that with an increase in fertilizer rates, the content of crude protein in the grain increases.

Studied combined balanced fertilization, alone and combinations of nitrogen, potassium and phosphorus fertilization in potatoes.

It was found that when coriander was fertilized with nitrogen, the productivity and biometric indicators of the crop were best when fertilized with N80 $kg.ha^{-1}$ and the highest essential oil content was at N120 $kg.ha^{-1}$.

3. Study of agronomic and quality characteristics of a new variety of plums and the efficacy and selectivity of some herbicides in growing the crop

The resistance of the Pagane variety to frost, phenological stages, biometric and chemical indicators were established. It is reported that the variety with high productivity and large fruits.

The influence of different herbicide treatments on the main parameters of the culture was studied.

4. Influence of herbicides on the microbiological activity of the soil

Application of *Isoxaflutol* in high doses has been found to reduce the number of bacteria and increase the number of mold fungi in the soil.

5. Study of herbicide phytotoxicity and possibilities for overcoming by plants.

Prince F1 pumpkin hybrids were found to die completely after soil treatment with *pendimethalin* and *dimethenamid-P.* The Matilda F1 hybrid is sensitive to the herbicide *imozamox*, but overcomes phytotoxicity after simultaneous (reservoir mixture) or after treatment with the biostimulant Amino Expert Impulse. It has been proven that the nitrogen content in the leaves of the hybrid decreases, the phosphorus content remains stable, and the potassium content increases after treatment with the herbicides and one of the biostimulants.

Herbicide stress caused by mistreatment of ExpressSun® sunflower hybrid P 64 LE 25 with the herbicide *imazamox* was found to affect the nitrogen, phosphorus and potassium content of plant leaves. Treatment with the biosimulant Amino Expert Impulse increases the content of these elements in the leaves.

Oilseed rape damaged by the herbicide *florasulam* + *aminopyralid-K* recovers to a greater extent after the therapeutic application of the biostimulant Amino Expert Impulse.

6. Study of weed associations in sunflower crops

Weeds in sunflower crops in different regions of Bulgaria were mapped and the predominant species were identified in order to improve the fight against them.

7. Studies related to the control of parasitic weeds in sunflower and winter oilseed rape

The biological efficacy of *imazamox*-containing herbicides and application phases for control of the parasite in sunflower and winter oilseed rape were investigated. The changes in yield, absolute and hectoliter mass of sunflower hybrid "Lucia" CLP after the application of herbicides were determined.

8. Studies on the efficacy and selectivity of herbicides in wheat, corn, sunflower and oilseed rape

The efficacy and selectivity of a number of herbicides for winter wheat, as well as their action in specific agro-ecological conditions of Northern and Southern Bulgaria, were investigated; search for effective solutions to combat *Convolvulus arvensis* L.; assessed the potential of some herbicides to control self-seeding of Clearfield oilseed rape and coriander in winter wheat crops. Having found that the best control is when applying herbicides with a combined active substance, including *2,4-D* and *sulfonylureas*.

Studied the efficacy and selectivity of some soil and leaf herbicides in certain corn hybrids. It has been confirmed that in conditions of heavy mixed weed infestation, mechanized vegetation treatments successfully complement weed control.

Studied the efficacy and selectivity of some soil and leaf herbicides in certain sunflower hybrids. In heavily weed infestation experimental plots, yield, 1000-seed weight and seed oil content were higher even in treatments with the registered and double doses of the herbicides than in the control. The effect of vegetation tillage and herbicides (*tribenuron-methyl* and *flumioxazine*) on wild cannabis and the yields of "ExpressSun" sunflower was established.

Data were obtained on the efficacy and selectivity of a number of herbicides in hybrid PX11CL winter oilseed rape. An analysis of variance shows that there are proven differences between the individual variants of the trials.

7. Remarks and recommendations

Ch. Assist. Prof. Neshev has indicated a significant number of contributions. I believe that the specified contributions, coinciding with the conclusions of his scientific publications, can be summarized and formulated in a more general form.

I recommend to the Chief Assist. Prof. Neshev to direct his attention to research of a theoretical, scientific and original nature.

8. Conclusion

Based on the analysis of the pedagogical, scientific and scientific-applied activity of the candidate, I consider that **Chief Assistant Professor Nesho Stoyanov Neshev, PhD,** meets the requirements of Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations or Application of the Law for the Development of the Academic Staff in the Republic of Bulgaria and the Regulations of the Agricultural University for its application for the academic position of "Associate Professor", professional Field 6.1. "Crop production" Scientific Speciality "Agriculture".

All this gives me reason to evaluate **POSITIVELY** his overall activity.

I would like to suggest to the esteemed Scientific Jury to vote positively as well, and the Faculty Council of the Faculty of Agronomy at the Agricultural University - Plovdiv to elect a **Chief Assistant Professor Nesho Stoyanov Neshev, PhD,** in the academic position of "**Associate Professor**" in the professional field 6.1. Crop production, in the scientific specialty "**Agriculture".**

June 29, 2023
Plovdiv

PPEPARATED BY:.....

(Assoc. Prof. Dina Atanasova, PhD)