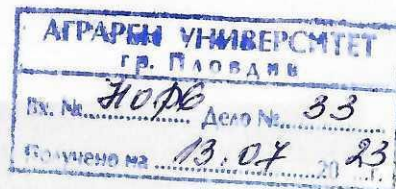


REVIEW



by **Prof. Maya Dincheva Dimitrova, Ph.D**

from the Agricultural University - Plovdiv, appointed as a member of the scientific jury by order of the Rector of AU RD-16-529/11.05.2023, regarding the materials submitted for participation in a competition for the academic position "Associate professor" in the field of higher education

6. Agricultural Sciences and Veterinary Medicine;

professional field 6.1. Plant breeding

scientific specialty: General Agriculture,

with **candidate: Chief Assistant Nesho Stoyanov Neshev, Ph.D**

1. General data about the career and thematic development of the candidate

In the competition for "Associate professor" in the scientific specialty General Agriculture, announced in the State Gazette, No 21 of 07.03.2023 and on the website of the Agricultural University for the needs of the Department of "Agriculture and Herbology" at the Faculty of Agronomy, as a candidate participated Ch. Assistant Nesho Stoyanov Neshev, PhD, lecturer from AU.

Chief Assistant Neshev, Ph.D was born on April 23, 1985. He received his higher education at the Agricultural University, Plovdiv. He graduated as a bachelor - agronomist, majoring in Horticulture in 2009, and then continued his education in a master's degree in Plant protection, which he graduated in 2011. Since 2013, he has been a full-time doctoral student at the Department of Agrochemistry and Soil Science and successfully defended his doctoral dissertation in the scientific specialty Agrochemistry, professional direction: 6.1 Plant growing.

In the period 2016-2018, he worked as an research-agronomist at the Center for Biological Evaluation of Plant Protection Products (Herbicides Department), at AU - Plovdiv. After successfully passing the exam, he was appointed as an assistant in the Department of Agriculture and Herbology of the same University (January 7, 2019), and since March 2020 he has been Chief assistant. The candidate has good computer literacy and a fluent level of speaking and writing in English (C2) according to the common European criteria. In 2017–2019, he participated in specializations under the Erasmus+ program in Poland and Egypt.

2. General description of the presented materials.

Nesho Neshev, PhD, participates in the competition for "Associate Professor" with a total output of **41 papers**, grouped as follows:

- Publications related to the doctoral dissertation – **8 items** that are not subject to consideration.

Scientific publications on the nomenclature specialty - **33 items**, of which:

- Publications with an impact factor – **9 items (5 items with Q4 and 3 items with Q3)**

- Publications in refereed scientific journals, indexed in global databases with scientific information - **21 items**;

- Publications in non-refereed journals with scientific review – **3 items**;

To prepare the review, 33 scientific publications are subject to analysis.

The personal participation of Chief Assistant Nesho Neshev, PhD, in the mentioned **33 works** is illustrated by the fact that **5 are independent**, in **9** he is **the first**, in **2 - the second**, and in the remaining **17** he is **the third and subsequent author**. Independent articles represent 15% of the total scientific output of the candidate, and those in which he is the first author are 27%. This gives me reason to highly appreciate the candidate's participation in the current competition.

- *Textbooks (practical aid) - 1 issue (co-author)*

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

During the period 2017-2020, Chief Assistant Nesho Neshev, PhD, participated in two research projects, funded by the Research Fund of the Ministry of Education and Science, in 2 scientific research projects at the Research Center of the Agricultural University (one of which he is the head of - 08/17), as well as in 2 implementation projects with external funding at the Agricultural University: "Maize - queen of the fields" and "Herbitour". This defines him as an active and responsible scientist.

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

The total teaching experience of N. Neshev, Ph.D, from his appointment as an assistant at the Department of Agriculture and Herbiology to the present moment is 4 years and 5 months, with a teaching load of 2238.5 hours, it exceeds the annually approved horary at the Agricultural University.

During this period, the candidate taught the disciplines of Herbology, Agriculture, Weed Control Systems for Field Crops, full-time and part-time education in all specialties at AU, Plovdiv.

Leads a lecture course on the discipline "Herbicide-tolerant varieties and hybrids" and exercises on the discipline "Herbicide phytotoxicity - evaluation and possibilities of overcoming" in Master course "Integrated Production of field Crops".

He is the supervisor of a large number of successfully defended graduates, both in the master's and in the bachelor's degree. Leads the participation of university students in international scientific forums.

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 noted citations of N. Neshev's scientific works is in **8 scientific articles**, 7 of which are in our and foreign journals with an impact factor and 1 in the proceedings of a symposium abroad.

He is a member of 4 international organizations - European Weed Research Society (EWRS), Weed Science Society of America (WSSA), International Society for Horticultural Science (ISHS), Balkan Environmental Association (BENA).

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 main directions in which N. Neshev, PhD, works are in the field of plant growing science and are aimed at establishing the influence of the preceding crops and monoculture cultivation of main field crops on the productivity and quality of agricultural production, the spread of economically important weed species, studies on the efficacy and selectivity of different herbicidal products in the main field crops and their effect on yield and various biometric indicators. Some of the studies are related to the application of herbicide mixtures and preparations for foliar nutrition, herbicide phytotoxicity and its overcoming, the effect of fertilization in some agricultural crops, etc. The candidate has a broad profile of research work with scientific and applied contributions. The obtained results provide a basis for formulating recommendations for practice.

I could point out the following summarized more important contributions from Nesho Neshev's research work:

- **Related to ancestral influences and monoculture in major field crops**

The influence of different preceding crops was investigated in winter oilseed rape, sunflower and coriander.

The data confirmed that the highest results of the studied indicators were obtained in the rotation of winter wheat ("Enola") with winter oilseed rape ("PT 228" CL). (28)

The highest results in terms of yield and grain quality of wheat (variety "Enola") grown as a five-year monoculture were obtained during the first two growing seasons. In the next three experimental years, these indicators were reduced, which gives reason not to recommend longer monoculture for wheat cultivation. (29)

The influence of predecessors was investigated in sunflower ('SY Bacardi' CLP) and coriander (variety 'Mesten drebnoloden'). The highest results in the conditions of field experiments were obtained in the rotation of winter wheat ("Enola") with sunflower. Winter wheat has been shown to be a more suitable precursor to coriander than sunflower. (30, 9)

- **Related to the fertilization of some crops**

The effect of urea fertilization on barley, variety "Emon", was investigated. It has been confirmed that with an increase in fertilizer rates, the crude protein in the barley grain increases. (31)

The combined balanced fertilization of potatoes and fertilization with different rates of fertilizers containing one nutrient were studied. The highest yields were obtained with balanced fertilization with NPK. (6)

The influence of four levels of nitrogen fertilization on coriander grown after two predecessors (winter wheat and sunflower) was investigated. The highest results in terms of productivity and biometric indicators were reported at the nitrogen rate of 80 kg ha⁻¹, and the essential oil content had the highest values at the rate of 120 kg nitrogen ha⁻¹. (9)

The influence of fertilizing with different rates of potassium fertilizers on quality parameters of tubers was studied in four varieties of potatoes under the conditions of a pot trial and one variety under the conditions of a field trial. Under field conditions, the highest dry matter content was reported after fertilization with 20 kg/ha K₂SO₄, and the content of starch and vitamin C in all varieties of the vascular trial decreased after fertilization with KCl. (12)

- **Related to agronomic and quality characteristics of the fruits of a new plum variety**

The agronomic and economic qualities of a new Bulgarian plum variety "Pagane", which is characterized by high productivity and large fruits, have

been studied. Its resistance to frost, phenological development, biometric and chemical indicators were established. (7)

- **Related to the impact of herbicides on microbiological activity in the soil**

Application of *isoxaflutol* in high rates has been found to reduce the number of bacteria and increase the number of mold fungi in the soil. (22)

- **Related to herbicide phytotoxicity and possibilities for its overcoming by plants**

Pumpkin plants, hybrid 'Prince' F1, were shown to die completely after soil treatment with *pendimethalin* and *dimethenamid-P*. (19)

It has been established that the herbicidal phytotoxicity caused by the herbicide *imazamox* is overcome by pumpkins, hybrid "Mathilda" F1 after simultaneous (in a tank mixture) or by medicative treatment with Amino Expert Impulse. The influence of different biostimulants on the content of N, P and K in plants has been proven. (3, 5, 27)

Herbicide stress caused by mistaken treatment of sunflower ExpressSun® hybrid P 64 LE 25 with the herbicide *imazamox* affects the content of nitrogen, phosphorus and potassium in plant's leaves. Treatment with the biosimulant Amino Expert Impulse increases the content of these elements in the leaves. (26)

It was established that oilseed rape plants damaged by herbicide drift caused by *florasulam* + *aminopyralid-K* recovered to a greater extent after the medicative application of Amino Expert Impulse. (4)

- **Related to the control of parasitic weeds in sunflower and winter oilseed rape**

The biological efficacy of *imazamox*-containing herbicide products and application phases for control of the parasite in sunflower, hybrid 'Lucia' CLP and oilseed rape "PT 228" CL were investigated. The changes in yield, absolute and hectoliter mass of sunflower were determined after the application of herbicides to control the parasite. (1, 33)

- **Related to weed control in major field crops and their impact on plant development and productivity**

- **Wheat**

The efficacy and selectivity of a number of herbicides with different active substances under specific agro-ecological conditions of Northern and

Southern Bulgaria were investigated. Their impact on productivity, growth and various biometric indicators has been established. (13, 20, 25)

The potential of some herbicides to control volunteers of Clearfield oilseed rape and coriander in winter wheat was evaluated. (32)

➤ **Maize**

The efficacy and selectivity of 3 soil and 10 foliar herbicides and their influence on maize grain yields were determined. (10, 16, 18)

Weed control has been studied by applying some soil herbicide (*mezotrione* + *terbutylazine*; *mezotrione* + *terbutylazine* + *clomazone*; *S-metolachlor* + *terbutylazine*) in different phases of crop development (24)

➤ **Sunflower**

The efficacy of low rates of the herbicides *metolachlor* + *terbuthylazine* and *dimethenamid-P* and their influence on sunflower yields were established. (17)

The effects of different doses of the herbicide *imazamox* on weed control, yields, physical parameters and seed oil content were demonstrated. (21)

The effect of vegetation tillage and herbicides (*tribenuron-methyl* and *flumioxazine*) against wild hemp and the yields of "ExpressSun" sunflower was established. (11)

➤ **Winter oilseed rape**

The biological efficacy and selectivity of 7 herbicides on winter oilseed rape, hybrid 'PX 111' CL, was studied. Their positive influence on the oil seed rape yields has been proven. (14, 15)

➤ **Plums**

The efficacy and selectivity of the herbicides were studied: *pendimethalin*; *flumioxazin*; *diquat*; *glyphosate* and *eucalyptus oil* and their influence on phenological indicators, growth, stem diameter and crop productivity. (8)

• **Associated with weed associations in sunflower**

Weeds in sunflower crops in different regions of the country were mapped and the prevailing species and the effect of the application of different technologies in order to improve their control were determined. (23)

I accept the submitted report on the contributions from the research and scientific production of the candidate.

Research conducted in the above thematic areas is a good starting point for the further development of knowledge in the field of crop science and integrated methods of weed control.

7. Critical notes and recommendations.

I would like to make some notes and recommendations to the candidate:

- In a small part of his scientific publications, the candidate substantiated the obtained results with meteorological data for the relevant year, which I consider a necessary addition and recommend that he pay attention to this in his future scientific articles.
- In some scientific works (8, 23) there are incompleteness in presenting the working methods, which should be avoided.
- I recommend to the Chief Assistant Nesho Neshev, Ph.D, to direct his attention to the development of scientific topics and tasks related to modern trends for sustainable agriculture.

8. Personal impressions of the reviewer.

I have personal impressions of the work of Chief Assistant N. Neshev, Ph.D, from 6 years. He is an extremely communicative, creative teacher, capable of leading graduate students, working in a team with other scientists in various scientific researches and projects. His responsibility and ability to present to a wide audience is impressive.

His participation in national research projects, as well as the successful management of graduate students characterize Nesho Neshev, Ph.D, as a good teacher and scientist in the field of crop science.

CONCLUSION

Based on the analysis of the candidate's pedagogical, scientific and scientific-applied activities, I believe that Chief assistant Nesho Stoyanov Neshev, PhD meets the requirements of ZRASRB, PPZRASRB and the Regulations of the Agricultural University for its application, for occupying the academic position "Associate professor" in General Agriculture.

The presented scientific output, his active participation in scientific and innovative projects, as well as his responsible attitude to teaching work, give me a reason to evaluate **POSITIVELY** his overall activity.

I allow myself to suggest to the esteemed Scientific Jury also to vote positively, and the Faculty Council of the Faculty of Agronomy at the Agricultural University - Plovdiv to elect Chief assistant **Nesho Stoyanov Neshev, Ph.D** as an "**Associate Professor**" in the Scientific specialty: **General Agriculture**.

12/07/2023
Plovdiv

REVIEWER: 
(Prof. Maya Dimitrova, Ph.D)