REVIEW

Concerning: Competition for occupation of the academic position "**Associate Professor**" in: field of higher education *6. Agricultural sciences and veterinary medicine*; the professional field *6.1. Crop Production*, scientific specialty *Agrochemistry*, announced in the State Gazette No. 98 of November 11, 2020 by the Agricultural University – Plovdiv, Bulgaria

Candidate for the competition: Chief Assistant Professor PhD Nikolai Momchilov Minev from the Agricultural University – Plovdiv

Reviewer: Prof. PhD Svetla Stoyanova Kostadinova, Agricultural University - Plovdiv, field of higher education *6. Agricultural sciences and veterinary medicine*; professional field: *6.1 Crop production*; scientific specialty *Agrochemistry*, appointed as a member of the scientific jury according to order № RD 16-51/22.01.2021 of the Rector of the Agricultural University – Plovdiv

One candidate Chief Assistant Professor PhD Nikolai Momchilov Minev is participating in the competition for the academic position of "Associate Professor", announced for the needs of the Department of Agrochemistry and Soil Science at the Agricultural University - Plovdiv. The documents for the competition are prepared in accordance with the requirements of the Law for development of the academic staff in the Republic of Bulgaria and the Regulations for application of the law in AU - Plovdiv.

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

Nikolai Momchilov Minev was born on August 13, 1976 in the town of Veliko Tarnovo. In the period 1999 - 2005 he worked as a medical assistant in the Center for Emergency Medical Care in Veliko Tarnovo; the branch in Pavlikeni. In 2005 he graduated from the Agricultural University - Plovdiv, specialty General Agronomy. In 2007 he received a Master's degree in "Agi-food Technologies and Biotechnology" from the Agricultural University of Plovdiv. Since 2007 he has been a full-time PhD student in the field of Forage Production, Pasture Breeding at the Department of Crop Production at the AU-Plovdiv. In 2013 he successfully defended a dissertation on "Study on the productivity and quality of grain legumes treated with new growth regulators" and acquired ONS "Doctor". Since 2009, after winning a competition, he started working as an Assistant Professor in the Department of Agrochemistry and Soil Science and since 2013 he has been a Chief Assistant Professor in the same department. He speaks English and Russian very well.

2. General description of the scientific production.

Chief Assistant Professor PhD Nikolai Minev is presented materials for this competition, which are described in a list of 22 titles. The applicant's publications are

grouped as follows:

- *Publications related to the doctoral dissertation - 2 issues that are not subject to review*
- *Monograph - 1 issue*
- *Articles and reports published in scientific journals, referenced and indexed in world-famous databases with scientific information - 12 issues*
- *Articles and reports published in non-refereed journals with scientific review or published in edited collective volumes - 5 issues*
- *Books - 2 pieces*

***18 scientific papers** are subject to analysis for the preparation of the review*

The monograph presented by the candidate has a volume of 190 pages and meets the requirements of ZRASRB. The monograph examines the overall agricultural techniques of the lavender crop with a focus on foliar fertilization with new fertilizers and soil fertilization with the main macronutrients phosphorus and potassium. It is in the interest of producers, specialists and students studying at the faculties of agronomy.

The personal participation of Chief Assistant Professor PhD Nikolai Minev in the mentioned scientific papers in the competition for "associate professor" is as follows: he is an independent author in 5 articles (29%); first author is in 4 articles (24%); second author is in 5 articles (24%); third author and after third author is in 4 publications.

The scientific papers of Chief Assistant Professor PhD Minev have been published mainly in scientific journals (68.4%) and in conference proceedings (31.6%). Scientific articles have been published in the journals Scientific Papers Series A. Agronomy (5 issues), Journal of Mountain Agriculture on the Balkans (4 issues), Agricultural Sciences (2 issues), Agricultural Science and Technology (1 issue), Journal of Research in Agriculture and Forestry (1 issue), Journal of International Scientific Publications, Agriculture & Food (1 issue).

The publishing activity of the candidate Chief Assistant Professor PhD Nikolai Minev is mainly in English 85 % of the articles and the remaining 15 % of the scientific papers are in Bulgarian and Russian.

Fulfillment of the requirements for the academic position "Associate Professor"

Chief Assistant Professor PhD Nikolai Minev presented an Individual Information on the implementation of the minimum national requirements for holding the academic position of "Associate Professor" in scientific field 6. Agricultural Sciences and Veterinary Medicine, professional field 6.1. Plant growing, according to the requirements of ZRASRB and Annex to Art. According to this report, the applicant submitted evidence on a group of indicators as follows:

Indicator A with minimum requirements 50 points - Presented materials for 50 points. Compliance – 100 %. Publications related to ONS "Doctor" - 2 issues (33.3 points), which cover the national minimum scientometric requirements for acquiring ONS "Doctor". They are not subject to consideration.

Indicator B with minimum requirements 100 points - Monograph is presented - 1 issue (100 points). Compliance - 100%.

Indicator Г with minimum requirements 200 points - Presented materials for 216.48 points Compliance - 108.2%. The points under Indicator Г are formed by Indicator Г7 with 204.5 points and Indicator Г8 with 11.98 points.

Indicator Д with minimum requirements 50 points - Presented materials for 120 points. Compliance - 2.4 times above the requirements.

The submitted documents and materials of the candidate Chief Assistant Professor PhD Nikolai Minev indicate that they cover in Indicators A, B and Г and exceed in Indicator Д the requirements of ZRASRB and the Regulations for implementation of ZRASRB of the Agricultural University - Plovdiv for participation in a competition for academic position "associate professor" in a professional field 6.1. Crop Production.

3. Main directions in the research work of the candidate. Demonstrated skills or talents for conducting research (project management, attracted external funding, etc.).

The main scientific directions in the majority of the publications of the Chief Assistant Professor PhD Nikolai Minev are related to research work in the field of fertilization. The candidate focused on the problems related to the effect of soil and foliar fertilization on growth, development, some physiological and biochemical parameters, the size of yields and the quality of production in major legumes and field crops. The percentage of tested foliar and soil biostimulators and fertilizers by crops is as follows: peas, vetch and other cereals - 6 pieces (30 %); corn - 4 pieces (20 %); lavender - 3 pieces (15 %); alfalfa - 2 pieces (10 %). The candidate has also submitted 4 publications (13 %), which are related to the analysis and survey of agrochemical and soil conditions in areas for growing vines, fruit and essential oilseeds. The publications are well designed, include appropriate literature, in-depth analytical work and conclusions.

Chief Assistant Professor PhD Nikolai Minev has participated in a total of 13 competitively funded projects. He is a participant in a national project "Support for the development of young scientists and post-doctoral students in the field of "Agricultural Sciences" and is the manager of 12 implementation projects at the CNI at the AU-Plovdiv:

1. "Testing of foliar fertilization schemes for maize using new products"
2. "Testing of sunflower foliar fertilization schemes using new products"
3. "Monitoring the impact of Timak Agro products on the development of sunflower in conditions of water stress"
4. "Monitoring the impact of Timak Agro products on the development of corn for grain under water stress"
5. "Monitoring the effects of the application of new granular fertilizers and biostimulants on the growth and yield of winter wheat grown in the field in Bulgaria"
6. "Technology for soil and foliar fertilization of lavender through products of Timak Agro Bulgaria"
7. "Technology for soil and foliar fertilization of lavender through products of Timak Agro Bulgaria"
8. "Technology for soil and foliar fertilization of lavender through the use of root and foliar stimulants of Timak Agro Bulgaria"

9. Determining the effect of organic and organo-mineral fertilizers Italpollina, Guanito, Sonar on wheat productivity '

10. "Technology for soil and foliar fertilization of lavender, through products of Timak Agro Bulgaria"

11. "Testing of maize fertilizers"

12. "Testing of fertilizers for wheat and oilseed rape"

All implementation projects are directly related to solving current problems of fertilization, research of new fertilizer products and their effect on the yield and quality of production of major field crops. The attracted external financing from the project activity of Chief Assistant Professor PhD Nikolai Minev is about BGN 105,000. All this contributes to a very good attestation of the research activity of the candidate and his formation as a scientist.

4. Assessment of the pedagogical preparation and activity of the candidate. His role in the training of young scientists.

Chief Assistant Professor PhD Nikolai Minev has 11 years and five months of teaching experience as a lecturer in the Department of Agrochemistry and Soil Science at the AU- Plovdiv at the moment. His study load for the period 2015 - 2020 is 2064.8 hours or an average of 413 hours for each school year.

Chief Assistant Professor PhD Nikolai Minev is actively involved in the training of agronomic staff from the Bachelor's degree, Master's degree and foreign students in the Erasmus program. He conducts practical classes in the disciplines of Agrochemistry and Soil Fertility and Fertilization. Chief Assistant Professor PhD Nikolai Minev gave 48 hours of lectures on the subject Soil Fertility and Fertilization in the academic years 2018/2019 and 2019/2020. In English he conducts exercises in the discipline of Agrochemistry with foreign students majoring in Plant Protection and students in the Erasmus program.

The role of Chief Assistant Professor PhD Nikolai Minev for the training of young people is illustrated by the fact that under his leadership seven students from the Bachelor's Degree have successfully defended their dissertations and are currently supervising three current graduates in Agronomy and Agriculture.

The analysis of the pedagogical activity and the presented materials from ch. Assistant Professor Dr. Nikolay Minev point out that he has a significant contribution to the education of students in the field of crop production and enjoys the respect of his colleagues and students.

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

Chief Assistant Professor PhD Nikolai Minev presented eight citations from three of his scientific publications for this competition, which indicate the interest in the topic and scientific results of the candidate. The citations are in the Journal of Balkan Ecology, Journal of Mountain Agriculture on the Balkans, Trakia Journal of Sciences, Banat's Journal of Biotechnology, Scientific Papers Series A. Agronomy. The candidate has scored 120 points in category E with a minimum requirement of 50 points, or has

exceeded the threshold.

Chief Assistant Professor PhD Nikolai Minev has participated in three national and five international scientific forums that contribute to promoting the results of his research.

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

I. Scientific contributions.

1. Fertileader Vital and Fertileader Alpha foliar fertilizers have been found to have a high stimulating effect on physiological parameters in Jubilee lavender. More assimilates and hydrocarbons are formed to structure the essential oil (**B3.2; Г7.10**).

2. Varietal reaction of fodder peas to five foliar products for foliar application has been proved. The growth regulators RENI D and RENI in budding in fodder pea variety Mir increase the photosynthetic activity, and in pea variety Vesela the highest levels of photosynthesis were registered during treatment with Molybdenite and Mn chelate. A positive effect of the action of RENI-1, RENI-A and RENI-D on the photosynthetic activity in peas, fodder peas and oats has been established. Increased photosynthetic activity enhances nitrogen fixation and nitrogen metabolism (**Г8.19**).

3. The addition of zinc to RENI increases the proportion of essential amino acids and improves the biological value of alfalfa proteins. RENI alone and RENI + Zn affect the primary light reactions and electron transport processes in alfalfa thylakoids, which has a positive effect on the efficiency of nitrogen fixation and nitrogen exchange (**Г8.17**).

4. Fertilization with Bormax, Mn chelate and RENI D increases nitrogenase activity in peas (**Г7.12**). The positive effects of the products on basic enzymes in peas and alfalfa have been established.

5. Bormax and RENI D were found to increase the methionine content in the pea grain and increase the EAAI index. (**Г7.12**). Bormax, RENI D and RENI increase the protein content of spring vetch grain. RENI D, Mn chelate and Bormax increase the content of Fe and Mg in the grain of spring vetch. RENI increases the amount of the essential amino acids lysine and phenylalanine, and RENI D and Bormax increase the methionine content. RENI-1 RENI-A and RENI-D increase the essential amino acids in the grain of garden and fodder peas, in the hay and the vegetative mass of alfalfa (**Г7.5, Г8.19**).

II. Scientific and applied contributions.

1. Foliar fertilizers Fertileader Alpha, Fertileader Viti and Feriactyl Trium + Fertileader Vital in the case of lavender variety 'Jubilee', applied foliar in the budding phase, have a positive effect on the yield of flowers and essential oil (**Г7.13**). Fertileader Gold (with B and Mo) has a strong positive effect on the growth, development and yield of color and essential oil (**B3.2**).

2. The term and the form of the imported fertilizer nitrogen in maize for grain have been studied. It was found that fertilization with NH_4NO_3 according to the scheme 1/3 before sowing, 1/3 in the phase of the 5th leaf and 1/3 at the beginning of silking leads to

high additional grain yield (**Г7.6**). Double application of nitrogen in the form of urea (½ from the norm before sowing and ½ in the phase of the 10th leaf) increases more than three times the grain yield (**Г7.8**).

3. A weak effect of nitrogen fertilization (N_0, N_8, N_{16} and N_{24}) of maize grown under non-irrigated conditions for the region of Plovdiv has been proven. A rate of 16 kg N / da increases grain yield by 3 - 8% in favorable years and only 2% in dry years. A proven relationship between the relative yield and the nitrogen norm R^2 = 0.732 has been established. Fertilization of maize with high nitrogen norms under non-irrigated conditions is an inefficient activity (**Г7.14**). For three Pioneer maize hybrids (P9241, P9900 and P0023), the highest yield was found at a sowing density of 69,000 plants per hectare (**Г7.9**).

4. The import of Bormax and RENI D-containing preparations significantly increases the grain yield of veal (**Г7.11, Г7.15**). The positive influence of RENI-1, RENI-A and RENI-D on the grain yield of garden and fodder peas and vetch, hay and vegetative mass of alfalfa (**Г8.19**) has been established.

5. The agrochemical conditions of soils for creation of vineyards for quality white and red wines in the regions of Archar, Chernogorovo and Kavarna are analyzed, the specific needs for fertilization are established, as well as the appropriate variety and substrate (**Г7.7, Г8.20, Г8.21**). The agrochemical and soil parameters of terrains in the land of the town of Elena for the establishment of plantations of berry and medicinal-aromatic species have been studied and relevant recommendations for organic and mineral fertilization have been given (**Г7.6**).

7. Critical remarks and recommendations.

I have some remarks and recommendations for the presented scientific production by the candidate Chief Assistant Professor PhD Nikolai Minev:

1. There are inaccuracies in the submitted documentation for the competition, which makes it difficult to work on the evaluation of the candidate. References are attached, which differ in terms of the number of publications and observed citations. A technical error was made in the Individual reference for fulfillment of the minimum requirements (Document № 14) - two articles are under number 6 in indicator Г7.

2. In a number of publications (Г7.6, Г7.7, Г7.8, Г7.10, Г7.12, Г7.13, Г7.15, Г8.19) the abstracts do not give an idea of what exactly the obtained scientific results are, there are no concrete data from the conducted researches.

3. Results for the content of nutrients in the soil are discussed without indicating and quoting in the literature exactly which method is used and for which forms of the elements the results refer.

4. Incorrect terminology has been used and a number of technical and methodological errors have been made - "total nitrogen" is indicated instead of mineral nitrogen; "Production productive experience" to be replaced by fertilizer experience; "Treatment" to be replaced by foliar fertilization; Replace "granular product" with complex fertilizer; "Ammonium saltpeter" with ammonium nitrate; in the scheme of the field experiment to indicate in addition to the variants and the number of repetitions; it is obligatory to use mathematical processing of the obtained results in order to prove the

established conclusions, etc.

5. I recommend to Chief Assistant Professor PhD Nikolai Minev to concentrate and deepen his future research work mainly in the field of agrochemistry, fertilization and plant nutrition, related to the scientific specialty in which he is applying for the competition; to direct his publishing activity in scientific journals with impact factor; to participate as an author or co-author in writing a textbook; to promote more widely the results of his scientific developments among agricultural producers.

8. Personal impressions and opinion of the reviewer

I have known Nikolay Minev since 2008 and my personal impressions are completely positive. He is an excellent teacher. He knows how to work in a team, he is ethical and correct in his relations with his colleagues.

CONCLUSION

Based on the analysis of the pedagogical, scientific and scientific-applied activity of the candidate, I believe that Chief Assistant Professor PhD Nikolai Momchilov Minev meets the requirements of ZRASRB and the Regulations for implementation of ZRASRB of the Agricultural University - Plovdiv. The scientific production presented by him and his overall activity indicate that Chief Assistant Professor PhD Nikolai Minev is a very well-prepared lecturer and a proven professional in the field of research.

All this gives me reason to **POSITIVELY** evaluate his overall activity and to propose to the esteemed Scientific Jury to vote positively, and the Faculty Council of the Faculty of Agronomy at the Agricultural University - Plovdiv to choose **Nikolai Momchilov Minev** for the academic position of "Associate Professor" in the scientific specialty Agrochemistry.

Date: 22.02.2021
Plovdiv

REVIEWER:
(Prof. PhD. Svetla Kostadinova)