

REVIEW

on the competition to hold an academic position "**Associate Professor**", Field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional direction 6.1. Crop production, Scientific specialty Agrochemistry, announced in State Gazette № 98 of 17.11.2020 with candidate Chief Assistant Dr. Nikolai Momchilov Minev

by Associate Professor Dr. Galya Dimitrova Panayotova - Trakia University, Stara Zagora, field of higher education 6. Agricultural Sciences and Veterinary Medicine, professional direction 6.1. Crop production, scientific specialty Agrochemistry, appointed as a member of Scientific jury according to Order № RD-16-51 / 22.01.2021 of the Rector of the Agricultural University - Plovdiv

1. General information on the career and thematic development of the candidate

In the announced competition for a Associate professor of scientific specialty "Agrochemistry" documents has submitted from one candidate - Chief Assistant Dr. Nikolai Momchilov Minev. The submitted documents and materials required by the announced competition are in accordance with legal requirements arising from the Law for Development of Academic Staff (Art. 29, paragraph 1), the Regulations to it (Art. 60) and the Regulations of the Agricultural University- Plovdiv.

Ch. Assistant Dr. Nikolay Momchilov Minev was born on August 13, 1976 in the city of Veliko Tarnovo. In 2005 he graduated the Agricultural University - Plovdiv with a Bachelor's degree, majoring in Agronomy (Farming), agronomist qualification. In 2007 he acquired a Master's degree in "Agricultural Sciences and Biotechnology" at the Agricultural University - Plovdiv. In 2013 he successfully defended doctoral degree at the Agricultural University - Plovdiv, professional field 6.1. Crop production, scientific specialty "Fodder production, meadow farming" with a thesis on "Study on the productivity and quality of Leguminous crops treated with new growth regulators". The total length of service of N. Minev as a lecturer at the Department of Agrochemistry and Soil Science is 11 years. The professional interests of the candidate are related to the main problems in the technologies of cereals and leguminous crops, lavender and vines, agrochemistry and soil fertility. The candidate has increased his competencies and skills through a number of participations in international and national scientific forums, has led and participated in national and implementation projects. According to the candidate, in his scientific work he speaks English and Russian at a good level and has competencies for using various computer programs.

2. General description of the presented materials

For participation in the competition for "Associate Professor" Ch. Assistant Dr. N. Minev did not prepare correctly presented materials.

In Application under № 6 "General list of scientific papers" Ch. Assistant N. Minev presents a total of 22 scientific papers. According to this application 20 papers are subject to analysis for the preparation.

Application № 7 of the set of documents is "List of scientific publications and works of Ch. Assistant Dr. N. Minev". According to this application, the submitted papers cover the national minimum scientometric requirements for acquiring the academic position of "Associate Professor" in the professional direction 6.1. Crop production. The total number of points for publication activity of the candidate (G7 + G8) is 234.81 points.

According to the summary Application № 14 "Individual reference of Dr. N. Minev for the implementation of the minimum requirements for the academic position" Associate Professor" the total number of points on indicators G7 + G8 is 216.48.

There are also differences with regard to Application № 9 "List of noticed citations" and Application № 14 (135 points and 120 points respectively).

The final evaluation of the scientific production of Ch. Assistant Dr. N. Minev is made according to the summary Application № 14.

The total output of the nomenclature specialty is 20 scientific publications, grouped as follows:

- *Publications related to the doctoral thesis - 2 publications that are not subject to review;*
- *Monograph - 1;*
- *Articles published in referenced and indexed world-renowned scientific information databases - 12 publications (from G7.5 to G7.15);*
- *Articles and reports published in non-refereed scientific peer-reviewed journals or published in edited volumes - 5 publications (from G8.17 to G8.21).*
- *Books - 2 pieces.*

For the preparation of the review I accept 18 scientific publications for review.

The numbering from "Individual reference of Dr. N. Minev" was used.

The minimum requirements for **indicator "A"** have been met - a dissertation has been successfully defended and two publications with a total number of 33.3 points have been submitted with a requirement of 30 points. These publications are not subject to discussion.

Indicator B3 presents a Monograph titled "Lavender (*Lavandula angustifolia* Mill.)", which covers the required 100 points.

Under **point G7.** (publications in referenced and indexed world-renowned scientific information databases) the candidate presents 12 publications with a total of 204.5 points.

Under **point G8.** (Articles and reports published in non-refereed journals with scientific review or published in edited collective volumes) the sum of the presented 5 publications is 11.98 points.

According to indicator **G**, the minimum requirements are for a total of 200 points. The total number points of candidate (G7 + G8) is 216.48 points, i.e. the overfulfillment is with 16.48 points (8.24%).

Analyzing the fulfillment of the requirements, in accordance with Art. 26 of the Law on the Development of the Academic Staff, I conclude that by all indicators the candidate meets the necessary requirements.

The personal participation of Ch. Assistant N. Minev on the 17 publications on this

competition is illustrated by the fact that 5 scientific papers (29%) are personal, on 4 papers he is the first author (24%), on 4 - second, and in the rest 4 publications is the third and next author.

Well-designed scientific publications have been published in referenced and indexed journals and conference proceedings such as Scientific Papers Series A. Agronomy in 2016, 2019 and 2020; Journal of Mountain Agriculture on the Balkans; Agricultural Science and Technology; AGRISAFE Final Conference 2011, Budapest; 6th Agricultural Symposium "Agrosym 2015", Jahorina; 52nd Croatian and 12th International Symposium of Agronomists, 2017, Dubrovnik, Croatia.

Articles have been published in non-refereed journals with scientific review and collective volumes such as the Journal of Mountain Agriculture on the Balkans in 2009 and 2011, Proceedings of the Conference 2011, Irkutsk; Journal of Research in Agriculture and Forestry; Journal of Scientific Publications, Agriculture & Food.

The presented monograph with a volume of 190 pages summarizes research related to the importance, origin, distribution, botanical characteristics, agricultural technology and factors influencing the quantity and quality of lavender. The influence of fertilization on the quantity and quality of the production, as well as the requirements of the lavender to the soil and climate are studied. The personal participation of the candidate is expressed in summarized studies with foliar fertilizers Fertileader Axis, Fertileader Alpha, Fertileader Gold, Fertileader Trio, Fertileader Trium, Fertileader Viti and Fertileader Vital, applied at a dose of 300 ml/da.

The monograph meets the requirements of Law for Development of Academic Staff and the Regulations of the Agricultural University-Plovdiv.

The results on the influence of foliar fertilization on growth, development, yield of flower and essential oil, as well as the quality of production are popularized through two publications in the Journal of Mountain Agriculture on the Balkans and in Scientific Papers Series A. Agronomy.

The candidate states that he is a co-author of two books on pests, diseases, weeds and fertilizing of corn, as well as wheat and barley, which are not attached.

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

The main directions in the research work of the candidate are related to testing of types of fertilizers for foliar and soil fertilization and growth regulators at different crops, which gives him the opportunity to gain knowledge about their biological reaction.

In 6 publications (33.3%) (G7.5, G7.11, G7.12, G7.15, G8.17, G8.19) the influence of growth regulators in fodder peas, vetch and alfalfa on the growth, photosynthetic activity, nitrogen fixation, biological value of protein, yield and quality of production. Four publications (22.2%) for maize hybrids are related to the influence of nitrogen fertilization level, nitrogen fertilizer type and planting density on growth, structural elements and yield (G7.6, G7.8, G7.9, G7.14). In one scientific paper (5.6%) the content of crude protein and amino acids in the grain of five cereals was analyzed (G8.18). The influence of foliar fertilization on the growth, yield and quality of flower and

essential oil of lavender is reflected in 3 scientific papers (16.7%) (B3.2, G7.10, G7.13), and in 4 articles (16,7%) (G7.7, G8.20, G8.21) a soil assessment has been made for vineyards, fruit and medicinal plants and relevant recommendations have been given. All publications are in Latin - 16 pieces in English and 1 piece in Russian, only the monograph is in Bulgarian.

The candidate has increased his competencies and skills by participating in national and implementation **projects**. Ch. Assistant N. Minev has participated in one national project related to support for the development of young and post-doctoral researchers in the period 2009-2011. His participation as a leader in the implementation of 12 implementation projects with companies for testing of fertilizers, organic and organo-mineral fertilizers, as well as biostimulators for wheat, corn, sunflower, rapeseed, lavender is extremely active. The participation and management of tasks in these projects is an attestation for the importance of the candidate's research activity and for his growth and upgrading as a scientist.

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

Chief Assistant Dr. N. Minev is a university lecturer for 11 years in the Department of Agrochemistry and Soil Science at the Agricultural University. In my opinion, the taught lecture courses and exercises are in the field of the competitive specialty Agrochemistry, but the candidate has not indicated in which disciplines and at which educational degrees he conducts sessions.

During the last two school years the lecture courses are 18 and 30 hours, respectively. For the last 5 school years the annual occupancy is from 364 (2015/2016) to 502 hours in the 2018/2019 school year. The classroom occupancy of the candidate exceeds the required.

The candidate has not published teaching materials for the competition.

The teaching activity is complemented by the training of young researchers and the candidate is the head of seven successfully defended graduates of the Bachelor's degree. The presented certificate does not reflect the topics of the diploma theses in order to assess the field of research. Since 2019, the candidate is the head of three new graduates, Bachelor's degree.

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

The candidate has submitted 8 citations of 3 of his publications, documented with copies of the articles in which the citations are included. These citations show the interest at home and abroad to 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 works G7.5 and G8.19 are cited 3 times. The total number of indicator D13 is 120 points with a 50 points, ie. these citations exceed the requirement by 140%.

The candidate has increased his competencies by participating in the work of 5 international and 3 national scientific forums - Conference AGRISAFE, Hungary; Symposium "Agrosym 2015", Bosnia and Herzegovina; 52nd Croatian and 12th International Symposium of Agronomists, 2017, Croatia; Conference, 2011, Irkutsk, Russia; Conference "Agriculture for life, life for agriculture" in 2016, 2019, 2020, Bucharest, Romania; Eco Mountain Conference 2009, 2011, 2014 in Troyan, of which oral or poster has reported his results.

6. Importance 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 accept the reference for the contributions from the scientific output of the candidate.

I. Scientific contributions

1. It was found that the foliar fertilizers Fertileader Vital and Fertileader Alpha have a high stimulating effect on the physiological parameters of lavender cultivar Jubilee. More assimilates and hydrocarbons to structure the essential oil are formed (B3.2; G7.10).
2. It was found that the growth regulators RENI D and RENI 1 in budding at fodder pea variety Mir increase photosynthetic activity, and at pea variety Vesela the highest levels of photosynthesis were registered when treated with Molybdenite and Mn chelate. A positive effect of the RENI-1, RENI-A and RENI-D on the photosynthetic activity at peas and oats has been established. Increased photosynthetic activity enhances nitrogen fixation and nitrogen metabolism (G8.19).
3. RENI and RENI+Zn affect the primary light reactions and electron transport processes in alfalfa, which has a positive effect on the efficiency of nitrogen fixation and nitrogen exchange (G8.17).
4. High nitrogenase activity was found during treatment with Bormax, Mn chelate and RENI D in peas (G7.12). The positive effects of the products on basic enzymes in pea and alfalfa have been proven.
5. Bormax and RENI D in pea grains increase the methionine content and the EAAI index. Bormax, RENI D and RENI increase irreplaceable amino acids phenylalanine and methionine in fodder peas (G7.12). Bormax, RENI D and RENI increase the protein content in the 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 (G8.18). RENI-1, RENI-A and RENI-D increase the irreplaceable amino acids in the grain of garden and fodder peas, in hay and the vegetative mass of alfalfa (G7.5, G8.19).

II. Scientific-applied contributions

1. The products Fertileader Alpha, Fertileader Viti and Feriactyl Trium + Fertileader Vital at lavender, applied foliar in the budding phase, have a positive effect on the yield of flowers and essential oil (G7.13). Fertileader Gold (with B and Mo) has a strong positive effect on the growth, development and yield of flowers and essential oil (B3.2).

2. It has been confirmed that nitrogen fertilization as NH_4NO_3 applied by scheme 1/3 - before sowing, 1/3 in the 5th leaf phase and 1/3 at the tasseling stage significantly increases the yield elements (G7.6). Pre-sowing application of 1/2 of N as urea and the remaining 1/2 as NH_4NO_3 in later stages increases three times the grain yield (G7.8).
3. It was found that the grain yield of corn increases when fertilized with N_{16} by 3-8% in favorable years and by 2% in dry years. N_{24} has no effect on yield compared to N_{16} . A proven relationship between the relative yield and the nitrogen norm ($R^2 = 0.732$) has been established. Fertilizing maize with high N levels under non-irrigated conditions is an inefficient activity (G7.14).
4. It has been found that at three maize hybrids increasing density increase plant height. The highest grain yield was obtained at sowing 69,000 plants/ha. At a sowing density of 40,000 plants/ha the highest was of hybrid P0023 was reported, (G7.9).
5. Boron-containing products Bormaks and RENI-D increases significantly seed yield of vetch (G7.11, G7.15). The positive influence of RENI-1, RENI-A and RENI-D on the grain yield of garden and fodder peas, vetch, hay and vegetative mass of alfalfa has been proved (G8.19).
6. 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, and the specific rates for fertilization are established, as well as the appropriate variety and pad (G7.7, G8.20, G8.21). The agrochemical and soil parameters of terrains in the land of the town of Elena for the creation of plantations of berry and medicinal species have been studied and relevant recommendations have been given (G7.6).

7. Critical remarks and recommendations

1. The set of documents on the competition are not prepared correctly by the candidate. There are differences between the individual applications both in terms of the number of publications and the number of citations. The order and numbering of the publications and the citations should be the same in the different applications. In addition, in the summary application № 14 to indicator G7 reflects twice publications with № 6, which does not allow indicating and commenting on the articles under the number
2. An abstract of the dissertation for the scientific degree "Doctor" is not presented, and this would help to assess the extent to which the attached publications are not included in it and evaluated in advance (G7.5, G7.11, G7.12, G7.15, etc.)
3. The presented monograph on lavender summarizes a large number of data from all areas of production and processing, but very few are the candidate's own research (15 pages of a total of 190 pages).
4. The rules of the Agricultural University there is no a mandatory requirement that candidates for the academic position "Associate Professor" have developed a educational manual or textbook, but I think that the candidate for this academic position must be the author (co-author) at least one guide.
5. The abstracts of the large number of publications (G7.6, G7.6a, G7.7, G7.8, G7.10, G7.12, G7.13, G7.15, G8.19) are not representative, inform about the obtained results without concrete data.

6. I recommend the candidate to focus his research activity mainly in the field of agrochemistry, fertilization and plant nutrition, related to the scientific specialty Agrochemistry.
7. I recommend that the results of future research are published primarily in journals referenced in SCOPUS and Web of Science.
8. Incorrect terminology has been used in the published materials and a number of technical and methodological errors have been made, the units of measurement must be indicated according to the International System of Units (SI), mandatory statistical processing of results, etc. I recommend the candidate to apply the generally accepted manner of citation a publication, starting with the author's surname.

8. Personal impressions and opinion of the reviewer

I do not know personally the chief assistant. Dr. N. Minev, and only indirectly through his scientific work. My impressions are that he is an executive, correct scientist and I think he has the potential to develop as a promising researcher and teacher in the field of agrochemistry.

CONCLUSION

On the basis of the analysis of the overall pedagogical, scientific and applied science activity of the candidate, I consider that Ch. Assistant Dr. Nikolay Momchilov Minev satisfies the requirements for occupying the academic position of "Associate Professor" under the Law for Development of Academic Staff in Bulgaria, Regulations to it, and the Regulations of the Agrarian University - Plovdiv.

The candidate is presented with a sufficient volume of scientific output, which meets Indicators A, B and G and exceeds in Indicator D the requirements of the Law for Development of Academic Staff in Bulgaria and the Regulations for application of Law for Development of Academic Staff in AU - Plovdiv to participate in a competition for the academic position of "Associate Professor" in professional direction 6.1. Crop. production, Scientific specialty Agrochemistry. The developed research tasks are current with scientific and scientific-applied contributions.

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

Having considered the above, I would like to recommend the honorable Scientific Jury also to vote favorably, and the Faculty Council of the Faculty of Agronomy at the Agricultural University - Plovdiv to elect **Nikolai Momchilov Minev** as "**Associate Professor**", in the scientific specialty of **Agrochemistry**.

20.02.2021
Stara Zagora

REVIEWER:.....
(Assoc. prof. Galya Panayotova, PhD)