



REVIEW

regarding the competition for "Associate Professor" in the scientific specialty "Soil Science", announced in the State Gazette No. 7 of 23.01.2024 with candidate Assis. Prof. PhD Mladen Pavlov Almaliev from the Department of "Agrochemistry and Soil Science", Agricultural University – Plovdiv

Reviewer: Prof. Ekaterina Georgieva Filcheva PhD, ISSAPP "N. Poushkarov" (Retired)), field of higher education 4. "Natural sciences, mathematics and informatics", professional field 6.2. Plant Sciences, specialty "Soil Science" appointed as a member of the scientific jury by Order No RD-16-407/20.03.2024 of the the Rector of the Agricultural University - Plovdiv.

1. General data on the career and thematic development of the candidate;

Assis. Prof. Dr. Mladen Almaliev was born on 18.03. 1976 in the city of Plovdiv. He received his secondary education in 1989 - 1994 in "Vasil Levski" Secondary School - Plovdiv. In the period 2000 – 2004 he acquired a Bachelor's degree "Farming" at the Agricultural College in Plovdiv. In 2004-2008 he acquired a Bachelor's degree in "Vine and Horticulture" at the Faculty of Vine and Horticulture, Agricultural University - Plovdiv with very good results (5.0) and state exams – with excellent results (5.50). Master's degree "Tourism Management" he received in 2008-2010 at the Faculty of Economics, Agricultural University - Plovdiv with a excellent results of 5.60 and a total results in graduation with very good results (5.0). In the period 2011-2013 he is a PhD student with the titled "Agrochemical assessment of certain genotypes of durum wheat" at the Faculty of Agronomy, Agricultural University - Plovdiv. In the period 2008-2010 he acquired additional professional qualification "Computer Systems and Technologies" at the Center for Continuing Education, Agricultural University - Plovdiv. In the years 2003-2010 he was Head of the Production Sector with main activities and responsibilities "Agrotechnics of Ecological Crops", which contributes to the enrichment of his knowledge and skills.

From 12. 09. 2014 to date Assis. Prof. PhD Mladen Almaliev is in Department of Agrochemistry and Soil Science – teach exercises in Soil Science, for which documents are presented. Assis. Prof. PhD Mladen Almaliev has the following special skills: good presentation skills; good communication as a result of teaching work; Very good computer skills.

As an advantage in the scientific expertise to the above mentioned is the excellent level of English language.

2. General description of the materials presented.

In the competition for "Associate Professor" Assis. Prof. PhD Mladen Almaliev participates with a total output of 46 articles, grouped as follows:

Scientific publications in the nomenclature specialty – 46 pieces, of which:

- Publications related to the PhD Thesis – 8 issues that are not subject to consideration;

- Articles in peer-reviewed and refereed scientific journals – 10 issues (indicator B3). In this group, 2 of the papers were published in journals with Quartile Q3 (B3-8 - SJR 0.25 and B3-9 - SJR 0.29), four with quartile Q4 (B3-10, IF - 0.3; B5, B6, B7). The total number of points for evaluation of this category of publications - indicator B3 is 139.5 (the minimum number of points is 100, which exceeds the minimum, according to the requirements of Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation, as well as the criteria presented in an annex to the Regulations for the Application of the Law in the Agricultural University - Plovdiv for the Academic position "Assoc. Prof").

- A book based on the PhD Thesis (G6) is presented.

- Publications in peer-reviewed and refereed scientific journals - 8 (G7). The total number of points on this indicator is 125.

- Publications in non-refereed journals with scientific review or published in edited collective volumes – 19 issues (indicator G8- 77.54 points).

The minimum number of points required is 200) and the applicant collects **242.54** points (**G6+ G7+G8**), which covers and exceeds the minimum requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation.

The works have been published in the following journals:

Scientific papers series A. Agronomy-University of Agronomic Science and Veterinary Medicine of Bucharest Faculty of Agriculture – 9 issues, Agricultural Science and Technology – 3 issues, Scientific work - Agriculture University-Plovdiv – 3 issues, Bulgarian Journal of Agricultural Science-1 issue, Agriculture & Forestry - 1 issue, Agronomy Research – 1 issue, International Journal of Research in Agriculture and Forestry - 1 issue, Agriculture & Food - 3 pcs

The personal participation of the applicant in the 38 works mentioned is illustrated by the fact that 5 are independent, in 9 - is first, in 4 - is second, and in the other 20 - is the third or next author. 25 of the materials are in English and the rest 13 - in Bulgarian language.

Textbooks - none. Study guides — none

I have 2 common publications with the candidate (**B3-2**: R. Ilieva, E. Filcheva, I. Iliev, M. Todorova, R. Popova, V. Valcheva, M. Almaliev, K. Trendafilov. 2015. Chemical and instrumental methods for determining the organic component of soils. Agricultural University-Plovdiv, Scientific Papers, vol. LIX, vol.5, Jubilee Scientific Conference with International Participation, p. 331-337, DOI:10.22620/sciworks.2015.05.038, ISSN:1312-6318; and **G8-5**: E. Filcheva, R. Ilieva, K. Chakalov, T. Popova, V. Savov, M. Hristova, M. Almaliev. 2015. Characterization of humus system of natural and artificial soil improvers. International Conference, Soil and Agrotechnologies in a Changing World, Institute of Soil Science, Agrotechnologies and Plant Protection "Nikola Poushkarov" 11-15 May, Sofia, electronic collection, 2015, ISBN: 978-619-90560-0-4, pp. 337-343, (which does not exceed 10%, as required by the Rules of Procedure).

For the preparation of the review, 36 works are subject to analysis.

A list of papers (1) and posters - 14 in Proceedings of World and European Congresses, and International Symposia, and 1 paper and 17 posters for participation in forums held in Bulgaria is presented. The reports and posters represent mainly the works published in prestigious journals. This makes it possible for the wider scientific community to get acquainted with the research conducted.

The articles for participation in the competition are indexed as follows AGRIS, CABI, EBSCO - 4; CABI - 5; AGRIS - 2; WEB of Science - 2; EBSCO, CABI - 5; EBSCO, Google Scholar - 5.

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

The directions in which Assis. Prof. Dr. Mladen Almaliev works and publishes the results of his research activities are as follows:

A. Studies relating to the suitability of land for the establishment and cultivation of perennials:

1. Erosion terrains in the land of the town of Elena have been studied. The aim of the study is to assess their suitability for the creation of new fruit plantations of sour cherries and plums, as a soil-climatic characteristic has been made in the region (**G7 4**).
2. A soil-climatic characteristic of part of the lands in the town of Aytos has been made, in order to assess their suitability for the establishment of cherry plantations (**G7 6**).
3. The soil and climatic conditions in the land of the town of Radomir have been studied, in order to create fruit plantations. The studied terrains belong to the European-continental climatic area (**G8 12**).
4. The suitability of the land in the city of Elena has been studied for growing berries and medicinal plants. The potential of the land in the village of Archar for the creation of vineyards for high quality wine grape varieties has been studied. It was found that the studied terrain is suitable for the establishment and cultivation of plantations, and fertilization rates for individual crops have been proposed (**G8 3**).
5. The potential of the land in the village of Archar for the creation of vineyards for high quality wine grape varieties has been studied (**B3 3**).
6. A study of the soil-climatic conditions and an assessment of the suitability of terrains located in the land of the town of Kavarna for growing vineyards (**G8 8**).
7. A land evolution of the soil-climatic conditions in a complex of partially eroded soils was made to create a viticulture terroir in the region of the town of Chirpan (**G8 13**).
8. A study has been carried out on the suitability of a terrain complex from the point of view of its erosion conditions in terms of its suitability for its transformation into a vineyard terroir (**G8 7**).
9. The peculiarities in the construction of Cinnamonic forest soils with a differentiated profile in the region of the Sungular valley have been studied, defining a unique specificity of the region for growing wine varieties (**G8 16**).

B. Studies related to the investigation of soil acidity in wine vineyards.

1. In the field experiment, the influence of liming with $\text{Ca}(\text{OH})_2$ and increasing doses of mineral fertilization on the content of the main nutrient macronutrients – nitrogen, phosphorus and potassium in the grapes of four wine grape varieties – Chardonnay, Sauvignon Blanc, Merlot and Cabernet Sauvignon has been studied (**G7 5**).

2. The influence of liming with $\text{Ca}(\text{OH})_2$ on the calcium and magnesium content of grapes of wine grape varieties has been studied (B3 1).

3. The influence of liming on the content of total sugars, titratable acids and pH in the wine grape varieties in the land of the village of Mezek has been studied (G8 9).

C. Studies related to tracking the change of indicators characterizing the acid-base balance in the soil after the application of amendments.

1. The dynamics of movement of micronized limestone used as a chemical amendment to neutralize the harmful acidity along the profile of Deluvial soils was studied (G8 4).

2. The influence of liming with different forms of chemical amendments applied into the soil on the calcium and magnesium content in the leaves of wine grape varieties in the land of the village of Mezek, Svilengrad municipality has been studied (G8 6).

The studies are methodically correctly placed and conducted, and the results obtained have been discussed in depth and at a high scientific level.

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

Assis. Prof. Dr. Mladen Pavlov Almaliev has 9 years and 4 months of teaching experience, which he has passed at the Department of Agrochemistry and Soil Science, Agricultural University – Plovdiv. During this period, he has performed exercises for full-time and part-time students from Bachelor's and Master's Degree. For a period of the last five years (2018-2023), the applicant has a total of 2889.45 hours.

The teaching activity of Assis. Prof. Dr. Mladen Pavlov Almaliev is complemented by the fact that under his scientific guidance 15 students have been trained and trained: 9 successfully defended students, 7 from the Faculty of Vine and Horticulture and 2 from the Department of "Agrochemistry and Soil Science". Currently assis. prof. Dr. Mladen Almaliev manages 6 graduates, of which 5 have upcoming defense from the Faculty of Vine and Horticulture, and 1 graduate from the Faculty of Agronomy.

From the attached reference for participation in projects it is clear that Assis. Prof. Dr. Mladen Almaliev participates with 11 projects, grouped in FOUR groups: Internal research projects – 1; Implementation projects – 7; International project to NSF-1, Participation in projects at the Faculty of Agronomy at the Thracian University, Stara Zagora – 2. The latter is a confirmation of the candidate's ability to successfully manage to conduct research with external funding outside the teaching activity.

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

Documents for participation in the "Associate Professor" competition are attached. confirming 6 citations (without auto citations), of which 4 in refereed and indexed journals, and 2 in non-refereed journals with scientific review. Total number of points D- 70.

As a President of the Bulgarian Humic Substances Society of (BHSS) I present additional information, namely that, Assist. Prof. Dr. Mladen Almaliev is a member of the Bulgarian Humic Substances Society and the Bulgarian Branch of the International of Humic Substances Society and has been actively involved in the activities of BHSS.

6. Significance of contributions to science and practice. Motivated answer to the question whether the applicant has a clearly defined profile of the research work;

15 contributions have been formulated but not given separately as original, scientific-theoretical, methodical and scientific-applied. They correctly reflect the results of the conducted studies and I accept the reference prepared by the candidate with some corrections and their grouping as original, scientific, methodical and scientifically applied.

As a specificity of the attached documents for participation in a competition for "Associate Professor" of the applicant is the preparation of the contributions to the research work, some of which are presented very descriptively. My opinion on dividing the contributions according to the requirements of Rules of the Law in the Agrarian university is as follows:

I. ORIGINAL CONTRIBUTIONS

1. It was found that liming with micronized limestone on the indicators of acid-base equilibrium in the soil achieves a full melioration effect already in the first year at a depth of up to 40 cm of the studied soils, and the crops studied: lavender, roses and vineyards have shown a stable habit as lavender show an increase in quantitative and qualitative indicators of yield and biological melioration effect over a short period of time. Due to the low hygroscopicity it is applicable to centrifugal and strip spreaders (**G8 4**).

II. METHODOLOGICAL CONTRIBUTIONS

1. It was found that in the area of the town of Elena soil and climatic conditions are suitable for growing berries and medicinal plants, and based on soil indicators, fertilization standards for individual crops have been developed (**G8 3**).

2. It was established that the land in the village of Archar is suitable for the creation and cultivation of vineyards in the direction of high quality red and white wines. Liming is carried out on the plots with harmful soil acidity (**B3 3**).

3. It has been established that the soil-climatic conditions of the city of Kavarna are suitable for growing vineyards for the production of quality wines - white wines, such as Sauvignon Blanc, Chardonnay, Traminer, for growing medium-early varieties for quality red wines, such as Cabernet Sauvignon, Merlot, Pinot Noir and others. It is not recommended to grow late and very late vine varieties. When absorbing the areas with established hard rock at a depth of 70 cm, it is necessary to carry out for meliorative measures to increase the depth of the root-inhabited soil layer (**G8-8**).

4. It was found that the soil texture in partially eroded soils in the region of the town of Chirpan is heavier than optimal for the cultivation of vineyards. The cultivation of vines in the area is not recommended on areas where soils are formed on limestone or other hard rock and profile depth is less than 70 cm (**G8 13**).

III. SCIENTIFIC CONTRIBUTIONS

1. It was found that liming in low rates leads to a legitimate and proven increase in the concentration of potassium in the leaf mass. Grapes in white varieties contain more potassium than red varieties, with the highest average amount in Sauvignon Blanc grapes. It was found that liming of acidic soils in wine-growing areas should be limited to the detoxification of harmful concentrations of easily mobile exchangeable aluminum, hydrogen and manganese, but it should not be allowed to completely change the soil-chemical environment. The highest nitrogen content was found in the grapes of the Sauvignon Blanc, Chardonnay and Merlot varieties, and the lowest in Cabernet Sauvignon. White varieties contain a 30% higher amount of phosphorus in grapes than red ones, and this trend is evidenced in the volume of the entire sample (**G7 5**).

2. The Ca content of the leaves of fruitful wine grape varieties has been found to be significantly affected by the content of this element in an easily accessible form in the soil. The application of calcium-containing mineral fertilizers and especially chemical amendments leads to a significant increase in the Ca content of foliage (**D8 6**).
3. The application of calcium-containing amendments has been found to increase the degree of heterogeneity of calcium content in the foliage, due to the positional inaccessibility of lime materials in the soil. The increased rate of absorption of Ca in the leaf mass of the vines also leads to an increase in the intensity of the uptake of magnesium, although its content in the soil does not change (**G8-6**).
4. It has been found that in grapes in white wine varieties liming causes a proven increase in the level of total sugars. Relatively persistent is the tendency to decrease the content of titratable acids, simultaneously with an increase in the lime rate. In the second year, an increase in the content of total sugars and a decrease in the level of titratable acids in white varieties shall be found only at the highest applied meliorative lime rate of 500 kg/da. Relatively stable is the tendency to reduce the content of titratable acids, simultaneously with an increase in the lime rate (**G8 9**).

IV. APPLIED CONTRIBUTIONS

1. It has been found that the content of total carbonates and active calcium in the Leached Cinnamonic forest soils in the land of the village of Chernogorovo does not limit the choice of rootstock. It is recommended to use propagating material grafted on a Berlandieri x Ripariapad selection Openheim 4 (SO 4) or other suitable ones. In highly eroded Leached Cinnamonic forest soils, shallow soils have a higher content of total and active carbonates, therefore it is recommended to use a resistant substrate has a higher content of total and active carbonates, therefore it is recommended to use a resistant pad - Chassla x Berlandieri 41B (**G8 7**).
2. It was found that erosion terrains in the land of the town of Elena are suitable for growing fruit plantations of sour cherries and plums. The structure of the harmful acidity and the degree of saturation of the soil with bases was determined and a plan for the melioration of the plots and recommended norms for the introduction of lime amendments into the soil was proposed (**G7 4**).
3. It was found that the soil-climatic conditions in the land of the town of Aytos are suitable for growing cherries, and some soil and climatic features of the region must be observed when creating the plantation (**G7 6**).
4. It was found that the suitability of Cinnamonic forest soils with a differentiated profile in the Sungulare valley area for growing vines is limited. In the complex of Cinnamonic forest soils for growing vineyards, it was found that, despite some limitations resulting from the acid reaction, the degree of soil erosion and the depth of the soil profile for part of the terrains, these soils are the main soil resource for the cultivation of vineyards within the boundaries of Sungurlare District. With appropriate agro technics, erosion control practices and models of organo-mineral fertilization, they are suitable for growing vineyards for winemaking (**G8 16**).
5. Significant restrictions have been identified as regards the suitability of the soil in the land of the town of Radomir for growing fruit species, due to the limited depth of the soil profile and the high carbonate of Ca and Mg (**G8 12**).
6. Change in the Ca content in the composition of the fresh grape mass was found, and at the highest meliorative lime rate of 500 kg/da was lower than what was found for the lower meliorating lime rates. In magnesium it is negligible. The differences between limed variants and the control in the second year with respect to Ca content of grapes have been demonstrated. Liming in the conditions of field experience affects the composition of grape production and leads to a positive

change in the calcium content of the grape composition. The grape varieties differences in Ca and Mg content in grape composition are negligible (B3 1).

7. Critical remarks and recommendations

Despite the previously noted good introduction to the directions in the research work, it seems very descriptive and detailed.

Some of the contributions have been formulated extended and are not given separately: Original, Methodological, Scientific, Applied, according to the of Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation, as well as the criteria presented in an annex to the Regulations for the Application of the Law in the Agricultural University - Plovdiv for the Academic position "Assoc. Prof".

When citing the soil name, it is good to write the classification system and the year of the respective version.

The remarks noted can be taken as recommendations and do not reduce the value of the materials submitted for review.

8. Personal impressions and opinion of the reviewer

Assis. Prof. Dr. Mladen Almaliev shows awareness, thoroughness, correctness, with extensive experience in teaching activities in conducting exercises with students, as well as in the management of graduates.

My personal impressions of my joint work show that he is a consistent, persistent and thorough scientist – an experimenter, who has precisely prepared the materials for applying for the academic position of "Associate Professor". Positive in the work of the candidate is the formulation of more than one contribution from the one and same experiment - III-1 and III-4 (G7 5, G8 9) or two contribution (III-2, 3) from one article.

CONCLUSION

Based on the analysis of the pedagogical, scientific and applied activities of the candidate, I believe that Assis. Prof. Dr. Mladen Pavlov Almaliev covers the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria and the Regulations for its implementation, as well as the criteria presented in an annex to the Regulations for the Application of the Law in the Agricultural University - Plovdiv for the Academic position "Assoc. Prof as Assis. Prof. Dr. Mladen Almaliev fully cover and exceed the requirements for the administrative position "Associate Professor" and the collected points are 502.04 (A-50; B-139.5; G6 - 40, G7 -125, G8 – 77.54, D – 70), it is required 400 points, i.e. the requirements are cover and exceeded.

All this gives me a reason to evaluate POSITIVELY the overall activity of the candidate in the competition for "Associate Professor" at the Agrarian University of Plovdiv Assist. Prof. Dr. Mladen Almaliev.

I would like to propose to the esteemed Scientific Jury also to vote positively, and the Faculty Council of the Faculty of Agronomy at the Agricultural University - Plovdiv to choose Assis. Prof. Dr. Mladen Pavlov Almaliev as "Associate Professor" in the scientific specialty "Soil Science", Department of Agrochemistry and Soil Science, Agricultural University - Plovdiv.

Date: 4/15/2024
Sofia

REVIEWER
(Prof. Dr. E. Filcheva)