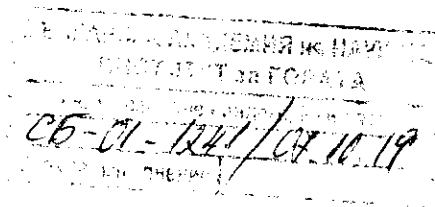


REVIEW



on the materials presented for the entering a competition for an occupation of an academic position “**Associate Professor**”, field of higher education 6.5. Forestry, subject **Forest management and dendrometry**, announced by the Forest Research Institute – BAS and State Gazette Nr. 44/04.06.2019

Candidate for participation in the competition: chief assistant Angel Atanasov Ferezliev, PhD

Reviewer: Prof. Dr. Hristo Ivanov Tsakov, DSc

1. Short biography of the applicant

Angel Atanasov Ferezliev was born in 1969. Graduated the Higher Institute of Forestry and Forest Industry (today University of Forestry) in 1995 as forestry engineer, MSc. Since 2011 has the academic rank chief assistant.

Since 1999 is an assistant forester in State Forestry Velingrad, and since 2006 works in the Forest Research Institute, BAS. In the period 1999-2006 he is a lecturer in the Professional School of Forestry “Hristo Botev” in Velingrad and assistant director of the school in 2005.

Currently the applicant is head of the Experimental Station of Coniferous Forests in Velingrad, which is part of FRI-BAS.

Member of the Union of Scientists in Bulgaria and the Chamber of Independent Valuers in Bulgaria.

2. Educational and professional background

Dipl. Eng. Dr. Angel Ferezliev has the following qualifications in the field of forestry:

- Technician forester in the Professional School of Forestry “Hristo Botev” in Velingrad (1984-1988);
- Forestry engineer – Higher Institute of Forestry and Forest Industry (1990-1995);
- Lecturer – forestry, dendrometry with forest management, soil science and erosion control, mechanisation of forestry, forest constructions – Professional School of Forestry “Hristo Botev” in Velingrad (1999-2006);
- Specialist forester – Forest Research Institute, BAS (2006-2010);
- Researcher – dendrometry – FRI-BAS (2010-2011);
- Chief assistant – dendrometry – FRI-BAS (since 2011);
- PhD – Bulgarian Academy of Sciences (2012);
- Professional qualification in assessment of forests and lands in forest fund – University of Forestry, Sofia (2005);
- Registration in the public register of physical persons for carrying out of forestry practice – Ministry of Agriculture and Forests – Executive Forest Agency (Nr. 1429/05.01.2012);
- Certificate for evaluator’s capacity for assessment of land properties in forest territories (reg. Nr. 820100134/06.02.2012, Ministry of Agriculture and Forests).

Additional education

- Engineer journalism and photography – Higher Institute of Forestry and Forest Industry – 1994;

- Professional qualification in pedagogical capacity – University of Food Technologies, Plovdiv – 2004;
- Certificate for professional user of products for plant protection, according to article 83 of the Law for plants protection – 2018.

Language and computer competence

- Graduated English language course – 100 school hours – level Preintermediate, language school Prestige – Sofia (2003)
- Completed training in basic and specific competence – 40 school hours, Sofia, 2007
- Work with Windows, Word, Excel, Power Point, SPSS, SVS (Stand Visualization System).

Technical skills and competence

Skills for carrying out of forestry practice:

- Planning and organisation of afforestation activities;
- Marking of stands foreseen for cuttings;
- Planning and organisation of wood production and non-wood forest products;
- Work out of forest management plans and programmes for inventory of forest territories;
- Work out of projects and plans for erosion and torrent control for biological reclamation of damaged terrains;
- Work with normative-and-reference database on dendrometry and methods for inventory of tree stands with the help of modern tools and instruments in forest territories;
- Experience and practice in the field of landscaping and forestry activities in nursery production and fungal protection.

3. Conformity of the documents and materials submitted by Dr. Angel Ferezliev with the minimal requirements according to the Regulations for the occupation of the academic rank associate professor in the Forest Research Institute – BAS.

In relation with the procedure and according to the minimal national requirements for the academic rank associate professor in higher education field 6. Agrarian sciences and veterinary medicine, professional area 6.5. Forestry (article 26 of the Law for the Growth of the Academic Staff in the Republic of Bulgaria), production of 35 scientific publications is presented, from which 29 are included in this application.

Besides the above-mentioned publications for the application, 5 more are presented together with an abstract, all of them related to the applicant's PhD thesis.

Lists of popular scientific articles, posters, abstracts, reviews, public contributions related to the applicant's activity and papers from national and international forums, provided with the relative evident materials.

Information about participation in the preparation of 4 disapproved scientific projects (1 in operative programme Development of human resources of the European Social Fund – 2011 and 3 – to the National Scientific Fund – 2014, 2015 and 2016).

In table 1 the applicant has presented information in groups of indices related to the minimal requirement for the relevant scientific area and professional field. The achieved points exceed the minimal required ones for each group of indices. Generalised, the obtained points after the criteria are 971,73, while the required minimum is 500.

Table 1. Minimal required points in groups of indices for the different scientific degrees and academic ranks

Chief assistant Dr. Angel Atanasov Ferezliev

| Group of indices | Content | Doctor | DSc | Chief assistant | Associate professor | Achieved |
|------------------|--------------------------------------|--------|-----|-----------------|---------------------|---------------|
| A | Index 1 | 50 | 50 | 50 | 50 | 50 |
| Б | Index 2 | - | 100 | - | - | - |
| B | Indices 3 or 4 | - | - | - | 100 | 180.07 |
| Г | Amount of indices 5 to 12 | 30 | 100 | - | 200 | 211.66 |
| Д | Amount of indices 13 and 15 | - | 100 | - | 100 | 270 |
| E | Amount of indices from 16 to the end | - | - | - | 50 | 260 |
| Total | | | | | 500 | 971.73 |

Dr. Ferezliev has also provided extended habilitation information about his scientific contributions after group of indices B.4., which gives short description of the essence of investigated scientific problems related to the specific of growth and development of Douglas fir plantations and its dendrometric indices, generalised with the help of mathematical relations and analyses. The European and local experience has been reviewed in the application of low-stem and medium-stem management of forests for more rational utilisation of forest resources and biomass. The basic scientific-and-methodic and applicable contributions have been described and the literature sources were pointed out, which have supported his studies.

After getting familiar with the materials, in the end of the review (Conclusion) I will ground my decision about the scientific production, expert skills and qualities of the applicant for occupation of the academic position "Associate Professor" in the scientific subject Forest management and dendrometry for the needs of the Forest Research Institute – BAS.

4. General description of presented materials (according to kind, importance, publication, language, number, co-authors)

Dr. Ferezliev has presented general list of articles in scientific journals and proceedings from national and international forums, on himself or in co-authorship, in the field of forestry, forest resources, ecology and agroforestry, media publications, as follows:

Publications for obtaining PhD degree (out of the competition) – scientific journal Nauka za gorata (Forest Science), Integral Protection of Forest Scientific – Technological Platform, Proceedings – Belgrade, Jubilee scientific conference with international participation "Man and universe", Union of Scientists in Bulgaria, Smolyan.

According to group of indices „B” – scientific publications in issues, reviewed in worldwide databases with scientific information: 10 journals – Silva balcanica, Nauka za gorata (Forest Science), Annals of Forest Science, iForest, Ecologia Balkanica.

In Bulgarian language – 5 articles: in co-authorship with first author A. Ferezliev – 4, in English – 5, from them with first author A. Ferezliev – 3.

According to number of co-authors – with one – 1 article; with more than two – 9 articles.

According to group of indices „Г”- articles in scientific issues, reviewed in worldwide databases with scientific information and distributed according to protocols of the contribution – 7 in Nauka za gorata (Forest Science), Folia oecologica, Ecologia Balkanica.

In Bulgarian language – 4 articles, in English – 3.

Of his own – 2, first author – 1 and 4 – in co-authorship with one or two.

In point 8 – group „Г” – articles and papers published in non-refereed journals with scientific reviewing or published in edited collective volumes or distributed on the basis protocol for contributions – 12.

In journal Nauka za gorata (Forest Science), 2012 – 1.

Published chapter of collective monograph in Springer Hadcover eBook, 2017 – 1.

In scientific proceedings of the jubilee scientific conference with international participation “Traditions, directions, challenges”, natural sciences, Union of Scientists in Bulgaria, Smolyan; international scientific conference “Ecologisation”, New Bulgarian University – Sofia; Proceedings of the Forest Research Institute “145-th anniversary of the Bulgarian Academy of Sciences”; Proceedings “Challenges – nature, forest, society”- Sofia; National scientific conference “Education and science for personal and social development”, natural sciences and informatics – Smolyan; Proceedings of the international scientific conference “90 years Forest Research Institute – for society and nature”, Sofia – 10.

In Bulgarian – 10. From all these: 3 – of his own; first author – 4, in co-authorship with two or more persons – 5.

Out of the competition are presented:

- List of 27 reports presented on various national and international scientific forums;
- Presented posters – 6;
- Published 10 scientific popular articles in various mass media;
- 12 abstracts of papers and posters on national and international forums.

5. Basic directions in the research activity of Angel Ferezliev and most important scientific contributions

Forest inventory is a science, which studies **regularities** in structure, growth and increment of forest stands depending on site conditions and carried out forestry activities for creating of methods for material assessment of forest resources.

Object of investigation in forest inventory are: single tree, tree stand – as one whole and element of forest stands, yielded production (wood) as separate timber assortments.

The history of the subject gives knowledge about the past, understanding of the present and foreseeing of the future of forest resources.

Due to this reason forest inventory (as a science) is interdisciplinary – closely related to silviculture, forest management, dendrology and plant systematic, ecology, pedology, mathematical statistics, phytopathology.

With regard to thus formulated subjects of forest inventory, scientific investigations of Dr. Ferezliev are directed to studying of the development and status of natural and artificially established managed stands, as follows:

- Growth and peculiarities of the structure of Douglas fir stands in North-West Rhodopes (Kraishte – Chepino);
- Regularities in growth in diameter, height and volume of Macedonian pine plantation in Vitosha Mt.;
- Peculiarities in growth in height and volume of tree stand, damaged by tornado (wind erosion) in Western Rhodopes;

- Determination of biometric parameters and profile characteristics of the crowns of Douglas fir, common and Moesian beech, Scots and Austrian black pine and mixed pine-spruce stands;
- Structure in diameter, height and volume of Scots pine plantations with the help of applicable software;
- Ecological investigations of forest resources and optimisation of the management of forests;
- Potential capabilities of the quantity of accumulated carbon in above-ground phytomass and in the soil in land use;
- Assessment of the introduction of medium-stem forest system and economic efficiency of its application in our country.

Scientific novelties as a result of investigations

- Methodological novelty is the establishment of growth model for form factors and heights for the Douglas fir in the North-West Rhodopes;
- Increment coefficients in early and medium age of the Douglas fir and its swelling in the region of Chepino;
- Statistical investigations of the “density” of distribution of diameters of medium-aged Douglas fir plantations;
- Ages of qualitative maturity, peak stability of average increment in diameter and volume of the Douglas fir;
- On the basis of the Stand Visualization System (SVS) programme, profile diagrams were obtained for spatial structure of trees in process of growth and competition for the Douglas fir and Moesian beech;
- Results were published with methodological contribution related to equalisation of correlations of various character, analysis and comparison of statistical quantities.

Scientific-and-applied achievements and implementation activities

Determined regularities in the development of pure and mixed Douglas fir stands in the region of Chepino show specific growth course and significant size in medium age;

- Quantitative data was obtained about the increment of Douglas fir plantations and the maximum of the current height growth was established ($Z_{\text{тек}}$ according to height) between the 15-20 year of age;
- The average height growth (Z_{cp} in height) has highest values towards 20-th or 25-th year of age and the quantitative maturity of the Douglas fir appears within the range 20-35 years of age. These are new facts which confirm the hypothesis for high productivity of the introduced species in the studied region;
- The use of height groups (I–V), binding the dominating height and indices of temperature and moisture regime (I_w and I_t) allow more precisely to determine the growth of the Douglas fir plantations in the investigated region. The conclusion was made that the highest productivity in volume (stock) of the plantations has not yet occurred;
- The investigated relation between average and dominant height allows to calculate the dominant height when establishing local growth table for the Douglas fir according to stand quality;
- Biometric parameters and profile characteristics of the tree crowns in medium-aged Douglas fir plantations will extend the knowledge and will

methodologically and practically support forestry decisions in management of this type of stands, which grow on higher altitude;

- The developed table of form factors of the Douglas fir in the Western Rhodopes has been approved by an expert council of the Ministry of Agriculture and Forests – Executive Forest Agency and can be applied in forestry practice;
- The methodologically determined growth model for establishing of form factors table can be used for the establishment of taper and volume table for the Douglas fir in the Western Rhodopes and for supplements in the normative-and-manual basis of this tree species.

6. Participation in scientific and applied projects

Participation in scientific projects (BAS – Forest Research Institute, department Forest Resources) – budget subsidy

- Close-to-nature utilisation, assessment and management of forest resources – 2009 – 2011;
- Technologies and assessment of forest resources – 2012 – 2013;
- Resource evaluation of forests and forest land – 2014 – 2016;
- Evaluation and management of forest territories – 2016 – 2018;
- Structure and evaluation of natural and artificially established dendrocoenoses in Shumensko plateau – team leader Prof. Hristo Tsakov, DSc.

Participation in international scientific or educational project

- Lifelong Learning Programme „Case Forest – pedagogies towards sustainable development”, team leader for Bulgaria: Prof. Nikola Stoyanov, University of Forestry, 2009 – 2010, EU.
- RTD Framework Programme: FP-1001-USEWOOD „Improving Data and information on the Potential Supply of Wood resources: A European: Approach from Multisource Inventories”: Prof. Nikola Stoyanov, 2010 – 2014, COST – EU.
- IZEBZO 142972/1, financed by the Bulgarian-Swiss programme Investigations (SNCF and Ministry of Education, Youth and Science) - Land-use and management impacts on carbon sequestration in mountain ecosystems, team leader Assoc. Prof. Miglena Zhiyanski, FRI-BAS, 2013 -2016.
- Project for international collaboration between the Bulgarian Academy of Sciences and the Slovak Academy of Sciences. Structure, health status and regeneration capability of dendrocoenoses damaged by wind invasion in the Rila-Rhodopes massif, Vitosha Mt. and the High Tatras; team leader: Prof. Hristo Tsakov, DSc, 2015 – 2017.

Leadership of national scientific or educational project

- Development of scientific-and-apply thesis for implementation in practice: Determining of the average form factors and making up of a table of form factors for the Douglas fir in the Western Rhodopes. Leader: chief assistant Dr. Angel Ferezliev, Forest Research Institute – BAS, 2009 – 2010
- Growth peculiarities and trends for management of the Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) in the Western Rhodopes. Leader: chief assistant Dr. Angel Ferezliev, Forest Research Institute – BAS, 2007 – 2010

- Growth peculiarities of the Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco), budget subsidy. Leader: chief assistant Dr. Angel Ferezliev, Forest Research Institute – BAS, 2010 – 2012
- Growth, structure and productivity of the Douglas fir in the North-West Rhodopes, budget subsidy. Leader: chief assistant Dr. Angel Ferezliev, Forest Research Institute – BAS, 2012 – 2014
- Growth, structure and productivity of artificial coniferous ecosystems, established in the North-West Rhodopes, budget subsidy. Leader: chief assistant Dr. Angel Ferezliev, Forest Research Institute – BAS, 2014 – 2016

7. Noticed citations of the scientific publications of Dr. Ferezliev in specialised literature

Representative excerpt of cited works and the PhD thesis of the applicant is enclosed:
Journal of Forest Science, Journal of Agricultural Science and Technology, Annals of Forest Science, iForest, Italian Society of Silviculture and Forest Ecology, Agricultural and Food Science, Folia Oecologica, Наука за гопара.

Proceedings: 90 Years Forest Research Institute, Proceedings of the Forest Research Institute “145-th anniversary of the Bulgarian Academy of Sciences”.

Issues – Avangard Prima – Sofia.

According to kind and specific of publishing journals

Journals with IF – 7

8. Учебно-преподавателска дейност – консултант на докторанти и студенти

- Lecturer activity in the Professional School of Forestry “Hristo Botev”, Velingrad (today National Professional Secondary School) for the period 1999 -2006 in fundamental subjects: silviculture, forest inventory and management, soil science and erosion control, utilisation of forests, mechanisation of forestry, constructions in forests. Besides theoretical training in the field of forest science, the applicant gets practical and pedagogical experience in training of future technicians foresters.
- After a decision of the scientific council of the Institute of Biodiversity and Ecosystem Investigations, the applicant was chosen as second scientific consultant of the PhD student Lyudmila Lozanova, whose thesis is The role of the underground biomass of tree plants for the accumulation of carbon in mountainous forest ecosystems (protocol Nr.25/26.10.2016)
- Scientific consultant of dipl. eng. Krum Karov, MSc thesis: Health status and structure of middle-aged Douglas fir plantations in the region of State Forestry Alabak, University of Forestry – Sofia, certificate dated 29.06.2017
- Operative Programme Human Resources Development at the European Social Fund – establishment of a training centre for PhD students, post-doc and post-graduate students in the field of ecology and management of forests – project proposal – 09.06.2014
- Preparation of training materials and carrying out of specialised training of members of forest co-operatives – 2018

9. Evaluation of the personal contribution and impressions from the candidate

From a point of view of the etymology, the Latin word „**doceus**” (associate professor) means „**who teaches**”, which is also related to the term „**habilis**” (fitted, suitable, capable).

An ancient thought says “Who searches for, he finds”. What has Angel Ferezliev searched for getting of knowledge in the field of forest science? And what has he achieved?

Education – technician forester, forestry engineer, PhD in forestry;

Practical experience – work in a state forest enterprise and practical training of pupils of the professional school of forestry;

Researcher – in the Forest Research Institute, BAS.

Works and contributions of his own

Subject: Dendroecological analysis of the Sots pine status in the region of Training-and-Experimental Forest Enterprise Yundola and State Forest Enterprise Velingrad – MSc thesis, University of Forestry

Subject: Growth peculiarities of the Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) in North-Western Rhodopes – PhD thesis, 10 publications in forest science literature

Essay on the PhD thesis

Contract with the Executive Forest Agency – Determining of the form factors and working out of a form factor table for the Douglas fir – leader

Presented 10 papers on national and international scientific forums

Presented a project “Wind erosion in the Rhodopes” on a round table in State Forest Enterprise Selishte, 13.05.2017

Abstracts and posters – scientific forums

Reviews – 5 for scientific journals

Scientific-popular articles related to the research activities of the Experimental Station for Coniferous Forests in Velingrad and forestry labour in Kraishte - Chepino.

All above-mentioned works and contributions of his own are a result of many efforts, experience and intellect and financially personally supported by the applicant from his own budget.

Attempt for a character sketch of the applicant

I know Angel Ferezliev from my professional contacts and work with lecturers from the Professional School of Forestry “Hristo Botev” in Velingrad. After my visits to the Experimental Station for Coniferous Forests in Velingrad in 2006 our meetings got more frequent to solve the numerous administrative and legislative problems. For a short time the applicant succeeded to solve the problem with the property and financial disorders with the tenants and administrative authorities in the town. Since 2007 he showed interest to carry out investigations in the field of forest plantations and we decided that these studies should grow up into PhD thesis about the newly established Douglas fir plantations in the upper part of the medium mountain belt in Chepino. Thanks to the obtained practical experience and his interest to the dendrometry, he passed numerous exams and became a researcher in the department Forest Resources.

The applicant has skills for both of his own and team work, shows interest to self-education and evaluates what people in the past have done in his professional field. I – Hristo Tsakov – am his adviser and colleague and some inaccuracies and imperfections in our mutual work are due to my role as a tutor. I would like to ask him a basic question:

In spite of the economic situation and project financing, will he continue to work for solving the problems related to studying on the regularities in tree stands; will he use and further develop the classical methods in dendrometry?

I wish him and people next to him good health!

10. Critical notes and recommendations

Style – this is man. The researcher, who always has doubts about the rightness of decisions; authenticity of the internet culture; about the ego of the leading figures and the

working team, is quite vulnerable and lonely. Each opinion, discussion, assessment, criterion is always a bit subjective, as well.

I think that Angel Ferezliev gained experience, acquired the academic word and style. Sometimes, willing to clear up determined methodological approach, he tries to go deep in details, to be right understood, forgetting about his professional training, the elitism of the auditorium and reader.

It is true that the written word overcomes time but, in spite of the market and competition, we should publish according to the modernity of the moment.

11. Conclusion

I think that the production presented for discussion in this competition is closely related to the scientific subject forest management and dendrometry and the processes running in forests, as well as the peculiarities in structure, growth and development of tree stands in the period of market economy and climatic anomalies.

Dr. Ferezliev proved his professional forester's training, showed maturity and responsibility for work – on his own and in a team – in carrying out of his administrative duties and research activities and tasks.

The form factors table has been accepted by the expert council of the Executive Forest Agency and is a good basis for the establishment in the future of a local normative basis for the Douglas fir plantations growing in the North-Western Rhodopes.

I propose chief assistant Dr. Angel Atanasov Ferezliev for the occupation of the academic position “Associate Professor” on the subject Forest management and dendrometry for the needs of the Forest Research Institute, BAS.

September 2019
Sofia

Reviewer:

(Prof.  Aristo Isakov, DSc)