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REVIEW

on the materials submitted for participation in a competition for an academic position "Associate Professor" in professional area "6.5 Forestry", scientific specialty "Forest organization and mensuration" declared by the Forest Research Institute – BAS in State Gazette, № 44 / 04.06.2019

Applicant for the position: Chief Assistant Angel Atanassov Ferezliev, PhD

Reviewer: Prof. Alexander Haralanov Alexandrov, D.Sc.

1. Brief biographic information about the applicant.

Angel Ferezliev was born on 29 January 1969 in Velingrad. He got a secondary education in Forestry technical school in his native town and he graduated from the Higher Institute of Forestry (HIF) as "Master" on specialty "Forestry" in 1995 with average score - Very good (4.84) and Excellent (5.50) of the State exam (Diploma, series AA №00014/December 1995). Second higher education he graduated from the Food Technology University – Plovdiv on specialty "Pedagogy" in 2004 with average score – Excellent (5.75) and Excellent (6.00) of the State exam (Diploma, series C-00 №400132/November 2004).

From April till September 1999 he was Assistant forester at the State Forestry – Velingrad and from September 1999 till July 2006 – teacher at the Forestry professional secondary school – Velingrad. After that he took service with the Experimental base on coniferous forests – Velingrad, where he was junior scientific collaborator and in charge of the Base (July 2006 and continues). During the period 2007- 2012 he was a Ph.D. student by correspondence on "Forest organization and mensuration" at the Forest Research Institute – BAS. A thesis on: "Growth features of Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) he defended on 20 September 2012 and received an educational and scientific degree "Doctor" (Ph.D.) (BAS-FRI, Diploma №000187/12.11.2012).

His language knowledge is on English and Russian and computer knowledge includes: Windows, Word, Excel, SPSS, SVS. He has completed a course for professional qualification on assessment of forests and forest lands.

2. Compliance of the submitted documents and materials of the applicant with those required under the Regulations for scientific degree and academic positions in the Forest Research Institute – BAS.

Documents and materials of Dr. Angel Ferezliev applied for the competition for an academic position "Associate Professor" comply with the requirements set in the Regulations for academic positions in Forest Research Institute – BAS.

The minimum required point score by groups of indicators (A, V, G, D, E) for "Associate Professor" in professional area "6.5 Forestry" is 500 (50+100+200+100+50) and Dr. Angel Ferzliev has 1073 points (respectively 50+180+208+375+260). This result exceeds two times the necessary minimum point score for this academic position, due mainly to the higher indicators: Citations (D) and Projects (E).

3. Common Description of submitted materials (by type, by importance, by language of publication, by the number of co-authors).

The applicant participates in the competition with 29 scientific publications (without those for obtaining the educational and scientific degree "Doctor"). Their description by required groups is as follows:

By type

- Articles and reports – published in reviewed scientific publications included in world-known basis data - 17
- Chapters of monographs - 1
- Articles and reports – published in reviewed scientific publications and proceedings not included in world-known basis data - 11

By importance

- Articles in journals with Impact factor (IF) - 2
- Articles in journals with Impact rank (SJR) - 1
- Articles in journals and proceedings without IF & SJR - 26

By language of publication

- In Bulgarian - 19
- In English - 10

By the number of co-authors

- Single author - 5
- First author - 12
- Second author - 6
- Third and subsequent author - 6

Nearly 60% of publications of Dr. Angel Ferezliev are with his leading participation (single and first author), that is a good indicator for habilitation. His co-authors from Bulgaria are researchers of the Forest Research Institute, Sofia (Prof. Hristo Tsakov, Asc. Prof. Alexander Delkov, Asc. Prof. Miglena Zhiyanski, Asc. Prof. Tatyana Stankova) and from abroad – from Slovakia, Switzerland and some European countries in the COST program – FP 1001, Usewood.

4. Main directions in research of the applicant and the most important scientific contributions

The research activity of Dr. A. Ferezliev is for the most part in two directions:

- 4.1. Features in growth, structure and productivity of artificial and natural, coniferous and deciduous forest dendrocoenoses.
- 4.2. Ecological studies, wood resources and optimizing of forest management.

The most important scientific contributions of the applicant could be summarized as follows:

- The structure and growth in diameter, height and volume of forest dendrocoenoses at natural populations and plantations are established.
- The growth of forest plantations by stem analyses is determined.
- The structure of mixed forests from *Fagus moeziaca* (Maly) Czezc., *Carpinus betulus* L. and *Quercus petraea* Liebl. on Shumen plateau and the relationship between crown width and stem diameter are analyzed.
- The positive effect of afforestation on physics-chemical properties of soils and their carbon storage are found.
- The volume and sorting structure of *Pinus silvestris* L. plantations by average stem characteristics are defined.
- The spatial horizontal structure of some forest stands is established by applying Stand Visualization System and coming changes under influence of biotic and abiotic factors.
- The dependence between the increment of dendrocoenoses and climate dynamics (temperature and precipitations) is proved.
- The structure and growth dynamics in height of Douglas fir in the Northwest Rhodope Mts. are established.

5. The most significant scientific-applied contributions and introduced activity.

- Forest simulation models for forecast of wood stock on the base of the National forest inventory are applied.
- Growth table of Douglas fir in the West Rhodope Mts. is made.
- *Quercus rubra* L. plantations are particularly suitable on technological terrains by re-cultivation of soils polluted with heavy metals near MP "Kremikovtsi".
- Management of some coppice with standards oak forests in Bulgaria and application of adequate method for conversion of some of them into high-stem ones and achieving a balance between their ecological, social and economic functions are recommended.
- Possibilities for biomass production of introduced species as *Pseudotsuga menziesii* and *Robinia pseudoacacia* L. are calculated and corresponding forms of land use are recommended.

6. Reflection of scientific publications of the applicant in the literature (citations).

The scientific publications of Dr. Angel Ferezliev are cited 28 times in 10 specialized scientific journals – „iForest”, „Annals of Forest Science”, „Journal of Forest Science”, „Folia oecologica”, „Hayka za ropara”, „Journal of Agricultural Science and Technology”, „Journal of Forest Research”, „Food Science and Technology”, „Agricultural and Food Science”, „Fresenius Environmental Bulletin” as well as in books, Ph.D. dissertations and proceedings. To registered by him 21 citations I add 7 missed ones. The citations are mainly from researchers in Bulgaria and some European countries (Italy, Slovakia, Estonia, Germany). The most cited (8 times) is the article: Zhiyanski, M., M.Glushkova, A. Ferezliev, L. Menichetti, J. Leifeld. 2016. Carbon storage and soil property changes following afforestation in mountain ecosystems of the Western Rhodopes, Bulgaria. iForest, 9, 626-634.

7. Participation in research and applied projects.

Dr. A. Ferezliev took part in 11 research and educational projects, 4 of them international and 7 – national ones. He was a head of 5 projects (national) and participant in 6 projects (4 -

international and 2 - national). The International projects are: Lifelong Learning Program – EU, COST, Bulgarian-Swiss Program, Interchanged Program of the Bulgarian and Slovakian Academies of Sciences.

8. Teaching activity (leader/consultant of Ph.D. students, training of students etc.).

The applicant supervised one regular Ph.D. student as second scientific consultant (Institute of Biodiversity and Ecosystem Studies, Record №25/25.10.2016). He was a consultant of diploma work, defended on 26.06.2017 in the Faculty of Forestry at Forestry University – Sofia.

9. Evaluation of the personal contribution of the applicant.

The personal contribution of Dr. A. Ferezliev in total 17 single and first author publications is distinctly defined and represents 59% from all scientific works. In the rest 12 publications his contribution on forest organization and mensuration is outlined. The other personal contributions of the applicant are:

- 27 participations with reports in scientific forums, 6 of them abroad.
- 12 abstracts in scientific forums, 3 of them abroad.
- 6 posters, 3 of them in Republic of Korea, France and Spain.
- 10 scientific-popular papers for the most part in local newspapers (“Tempo”, “Chepinets”, “Zname”).
- 1 documentary film with the participation of Asc. Prof. M. Zhiyanski and Dr.A. Ferezliev with regard to “The influence of changes in land use and management of forests on carbon storage in mountain forest ecosystems”.

10. Critical notes and recommendations.

- The total number of contributions (25) could be reduced and to avoid some repetitions.
- I recommend extending of the relative part of publications on “Forest organization” on account of “Forest mensuration”.
- The citations of the applicant are reduced and should be actualized.
- Some terms as “multicollinearity”, “pawn trials”, “ecosystem utilities” are subjects to corrections.
- It is not advisable to present more than 2 reports of an author to a scientific forum. The applicant has presented 4 reports in Sofia conference (24.10 – 26.10.2018) and 3 reports in Smolyan conference (28.10 – 29.10.2017).

11. Personal impressions.

They are very good and concern to the period July 2006 – Jan. 2012 when the applicant has worked as junior scientific collaborator and in charge of the Experimental base on coniferous forests.

12. Conclusion

On the grounds of the evaluation of the research activity of Chief Assistant Dr. Angel Atanassov Ferezliev, I recommend him for academic position “Associate professor” (Docent) in professional area “Forestry”, scientific specialty “Forest organization and mensuration”.

04.09.2019

Reviewer: 