

БЪЛГАРСКА АКАДЕМИЯ на НАУКИТЕ
ИНСТИТУТ за ГОРАТА
РЕГИСТРАЦИОНЕН № И ДАТУМ И ДАТУМ
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Срок за изпълнение

REVIEW

On the materials submitted for participation in a competition for an academic position "Professor" in professional area "6.5 Forestry", scientific specialty "Forest plantations, breeding and seed production" declared by the Forest Research Institute – BAS in State Gazette, № 65/21.07.2020

Applicant for the position: Associate Professor Emil Borisov Popov, Ph.D.

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

1. Brief biographic information about the applicant.

Emil Borisov Popov was born on 09.09.1957 in Kostenets. He graduated the full course from the Higher Institute of Forestry (VLTi) in specialty "Forestry" in 1983 with average scores – Very good (5.05) and Excellent (5.75) from the State exam. The scores of educational subjects on silviculture, forest plantations, genetic and tree breeding, connected with the following studies, were correspondingly excellent, very good and excellent.

He took service with the Forest Research Institute (FRI) as forest engineer (1983-1986), after that as regular post graduate student (1986- 1989) and forest engineer (1989-1990). The topic of his dissertation was "Studies on introduction results of Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco in the country". The Higher Certifying Commission (HCC) awarded him the scientific degree "Candidate in agricultural sciences" (HCC – Diploma № 21675/28.12.1991). From 1990 till 2000 he was consecutively scientific worker (Assistant Professor) – III, II, I degree. He specialized short term in Finland (1992), France (1994) and Italy (1998, 2002).

On 15.02.2000 the Higher Certifying Commission awarded him the academic position "Senior scientific worker – second degree" (Associate Professor) (HCC – Certificate № 20074/24.04.2000). During 20 years (2000-2020) he served as habilitated researcher at the Forest Research Institute – Sofia, head of section "Forest genetics, physiology and plantations" since 2013. He was a member of the Scientific Council of the FRI since 2002, chairman of the General meeting of researchers at the FRI since 2016 and representative of the FRI at the General Assembly of the Bulgarian Academy of Sciences since 2020. His working knowledge of languages – English, French and Russian.

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

Documents and materials of Assoc. Prof. Emil Popov applied for the academic position "Professor" comply with the requirements set in Classifier, approved by the Council of Ministers (Decree № 125, State Gazette - № 64/2002) in domain "6. Agricultural sciences and veterinary medicine" – professional area "6.5. Forestry" as well as the requirements set in the Regulations for academic staff of the FRI – BAS.

The minimum required point scores by groups of indicators (A, B, G, D, E) for "Professor" in professional area "6.5. Forestry" is 650 (50+100+200+200+100) and the applicant has 2876 points (respectively 50+228+328+1715+555). He exceeds 4.4 times the necessary point scores required for

position "Professor", due to the higher points for "citations" (6.6 times) and "projects" (5.5 times). The considerable higher scores are result of the active 21 years research period.

The other requirements are fulfilled as follows:

- 10 individual publications at least, or as first author. Assoc. Prof. Emil Popov has 19 individual publications and 7 publications as first author i.e. they exceed total 2.6 times.
- 5 publications in International journals, indexed in world-known basis data. The applicant has 10 publications of that sort i.e. 2 times more.
- Positive citations, from them 10 - in international or foreign issues. The applicant has 171 citations, 45 of them – in international or foreign issues i.e. 4.5 times more.
- Guidance of one post-graduate student at least. The applicant guides 1 post-graduate student.
- Leadership of more than 2 scientific projects and participation of 5 scientific projects at least. The applicant has respectively: leadership – of 7 projects i.e. 3.5 times more and participation – in 19 projects i.e. 3.8 times more.

In category "publications equalized to monography" the applicant has pointed 10 scientific articles (№№ 2, 4, 6, 7, 9, 10, 11, 14, 16, 20) indexed in world-known basis data. They are combined under heading: Forest plantations – technology for high quality wood production and instrument fostering the protection of nature and the agricultural lands.

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

The publications of the applicant in the competition are together 57 and they could be classified according the following indicators:

By type

- | | |
|---|--|
| - Monographs, books and chapters of books | 6 (№№ 52-57) |
| - Publications in scientific journals | 33 (№№ 1-20, 28, 29, 36-39, 41-45, 48, 50) |
| - Publications in proceedings | 18 (21-27, 30-35, 40, 46, 47, 49, 51) |

By importance

- | | |
|---|---------------|
| - Publications in journals with IF | 4 (№№ 1-4) |
| - Publications in scientific issues refereed and indexed in world-known basis data | 16 (№№ 5-20) |
| - Publications in unrefereed journals with scientific review or published in edited joint tomes | 31 (№№ 21-51) |
| - Books or book chapters | 6 (№№ 52-57) |

Publication place

- | | |
|------------------------|----|
| - In Bulgaria | 37 |
| - In foreign countries | 20 |

Language of publication

- In Bulgarian	28
- In English	28
- In German	1

The number of co-authors

- Single author	19
- First author	7
- Second author	10
- Third author	13
- Forth and subsequent author	8

The scientific articles of Assoc. Prof. Emil Popov are published in 17 scientific journals including: International Journal of Forest Research, Agroforest System, Annals of Forest Research, Forest Science (BG), Forestry Ideas, Austrian Journal of Forest Science, Sylva Balcanica, Sustainable Forestry, Journal of Balkan Ecology and others. Of them 3 - are with IF, 5 – with SJR, 12 – refereed and indexed in world-known basis data.

His foreign co-authors are well-known researchers on forest plantations, genetics and tree-breeding as: M. Konnert (Germany), K. Redei (Hungary), E. Potzelsberger (Austria), J. Frydle (Check Republic), V. Lavadinovic and V. Popovic (Serbia), V. Andonovski (North Macedonia), T. Maaten (Estonia), P. Alizoti (Greece), M. Westergren (Slovenia) and others. Co-authors from Bulgaria are 24 researchers from the same scientific specialty working in this field during the last 30 years.

Besides the scientific publications the applicant has submitted also 2 published scientific-applied workings, 4 abstracts, 3 popular articles, 3 interviews in newspaper and radio or on the whole – 69 publications.

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

The directions of his research activity are:

- 4.1. Introduction of forest tree species with accent on *Pseudotsuga menziesii* (Mirb.) Franco.
- 4.2. Biological features, tree breeding and creating of forest tree plantations.
- 4.3. Preservation of forest genetic resources.
- 4.4. Virgin forests.
- 4.5. Agroforestry.

The most significant scientific contributions of the applicant are the following ones:

- The most suitable provenances of Douglas fir from Oregon, Washington, Arizona, Montana and New Mexico states are established for cultivation in Bulgaria.
- The growth, productivity and status of Douglas fir in SF “Kostenets”, SF “Koprivstitsa”, SF “Borima”, SF “Kazanlak” Educational Forestry “Petrohan”, along “Gorna Arda” and others are established.

- The natural and anthropogenic processes on some forest habitats in Protected Area of “Kamchiyska & Eminska Mt.”, Protected Area “Iskar River” and advanced successions are analyzed.
- Some results from cultivation of *Robinia pseudoacacia* L., *Populus* sp., *Populus deltoides* X *Populus nigra*, *Populus* X *euroamericana* and *Paulownia* sp. are established.
- Some biological features of local and introduced species of genus *Quercus* and *Juglans regia* L. are determined.
- On data base of climate changes at the lower forest belt of South West Bulgaria during the period 1952-2007 an ecological risk for forest vegetation status was set up.

The basic scientific contributions of the 10 articles with monographic character could be summarized in:

- Estimation of the results from introduction of nonnative species and on ex situ conservation of their genetic resources.
- Analyzing the status of forest habitats in protected areas.
- Extending the range of agroforestry practices.

5. The most important scientific-applied contributions and embedded activity.

Towards the important scientific-applied contributions of the applicant refer:

- The opportunity for long-term storage of Douglass fir seeds during full seed-years was based.
- The virgin forests of Sredna gora Mt., Ograzhden Mt. and Maleshevska Mt. were mapped.
- The legislation of the European countries for regulation on introduction of nonnative tree species in order to use their priorities and to restrict in their potential negative effects was studied.

Towards the embedded activity 5 projects can refer:

- Management and monitoring of two experimental plantations on 96 dka in State Forestry “Kostenets” (63 dka) and in State Forestry “Kyustendil” (33 dka), including 55 Douglas-fir provenances from the USA.
- Selected felling in Scots pine plantations of State Forestry “Godech”. Bulgarian-Swiss Program, 2003.
- Afforestation on eroded lands of the territory of Buhovo and Zhelyava village. SAPARD program, 2004.
- Determination of perspective Douglas-fir provenances for the afforestation practice and selective felling. Executive Forestry Agency (EFA), 2009-2011.
- Establishment of perspective poplar clones for biomass production. Executive Forestry Agency, 2013-2015.

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

The publications of Assoc. Prof. Emil Popov were cited 171 times in 29 scientific journals of 11 European countries and Canada, including *Journal of Forest Science*, *Ecol. Evolution*, *New Forest*, *Ecology*, *Environment and Conservation*, *Journal of Forest Research*, *Civil and Environmental Engineering*, *Forests*, *Journal of Environmental Biology* and others. His publications were cited in 10 PhD dissertations. The most cited are his single author' articles: № 9 (2014) -15 times, № 23 (2001) – 11 times, № 1 (1990) and № 2 (1991) - 9 times each etc.

7. Participation in scientific and applied projects.

He took part in 26 scientific and applied projects, 10 of them international and 16 national ones. The applicant was a leader of 7 projects (2 – international and 5 – national) a participant of 19 projects (8 – international and 11 – national). The international projects chronologically were with researchers from Italy, Luxembourg, the Netherlands, Romania, Byelorussia and the EU. Nowadays he is a leader of scientific project, financed by the Bulgarian Academy of Sciences (2020-2022) and participant of the whole institutional project of FRI at the National scientific program “Protection of the environment and reducing of risk from adverse phenomena and natural disasters.

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

Assoc. Prof. Emil Popov supervises one PhD student and as a result of his active leadership engineer Zdravko Bakalov published 4 articles and cut down the training course.

9. Evaluation of the personal contribution of the applicant.

As co-author of 38 articles his personal contribution is outlined with his expert knowledge in the field of forest plantations, genetics and tree breeding. The other personal contributions include:

- Participation in 34 scientific forums with reports/posters (national – 6, international – 28, of them 10 – abroad) – total 62 points.
- Participation in 15 scientific jury, from them for scientific degree – 9, for academic position – 6 (incl. 2 – for “Professor”. He has presented 4 reviews and 11 positions, being chairman of 6 jury.
- Membership in Editorial Boards – 5 (in scientific journals – 2, in proceedings – 3) – total 25 points.
- Reviews of scientific articles and projects – 18 (of articles – 16, of projects – 2) – total 36 points.
- Scientific-applied elaborations – 5; - total 50 points.
- Expert activity – in Scientific Council of the FRI, chairman of General meeting of the FRI, General Assembly of the BAS, EFA.

10. Critical notes and recommendations.

They refer to the following:

- The applicant could have submitted for consideration a dissertation for scientific degree “Doctor of Sciences” instead of 10 scientific articles with monographic character.
- The title of the integrated monographic articles: “Forest plantations – technology for higher quality wood production and instrument for fostering the protection of nature and agricultural lands” is advisable to get more synthesized expression: “Introduction of forest tree species and agroforestry”.
- There are partial repetition of texts and tables in separate publications (№№ 27, 33 34), (№№ 38, 41, 42), (№№ 46, 50, 51).
- Terminological recommendations:
 - * Instead of “intraspecific” (Summaries, № 7, B4.2) to replace by equivalent Bulgarian term.
 - * Instead of “status of attendance” (Summaries, № 2, B4.7) to be “present status”.
 - * “Ecosystem utilities” (№ 47 and in habilitation reference – point 2) should be replaced by “ecosystem services”.
 - * Geographical denomination “Emenska Mt. (№ 10) to correct “Eminska Mt.).

11. Personal impressions.

They are from 1983 when the applicant took service with the Forest Research Institute as forest engineer, post-graduate student, scientific worker and senior scientific worker. During these four decades he made known as an enterprising and deep researcher while the undertaken scientific and applied tasks he carried out with professional responsibility. His personal service was the establishment of Douglas-fir experimental plantations including nearly the entire area of this species in the USA and ex situ preservation of its genetic resources in SF "Kostenets" and SF "Kyustendil".

12. Conclusion.

Based on the research, scientific-applied and embedded activity of Assoc. Prof. Emil Borisov Popov I recommend him for the position "Professor" in professional area "6.5 Forestry", scientific specialty "Forest plantations, breeding and seed production"

20.10.2020

Reviewer:

/Prof. Alexander H. Alexandrov, D.Sc./