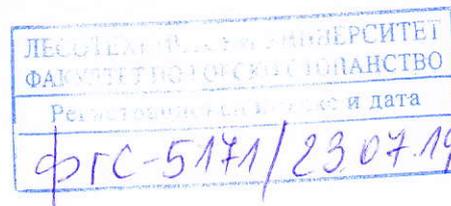


REVIEW



on the materials submitted for participation in a competition for an academic position “Professor”, domain of higher education: “6. Agricultural sciences and veterinary medicine”, professional area “6.5. Forestry”, scientific specialty “Forest plantations, breeding and seed production”, educational subject “Forest Genetics and Breeding”, declared by the University of Forestry in State Gazette, №37/07.05.2019

Applicant for the position:

Associate Professor Petar Zhelev Stoyanov, Ph.D.

Reviewer: Professor Alexander Haralanov Alexandrov, D.Sc., domain of higher education: “6. Agricultural sciences and veterinary medicine”, professional area “6.5. Forestry”, scientific specialty “Forest plantations, breeding and seed production”, Department “Agricultural sciences and forestry” of the Bulgarian Academy of Sciences (BAS).

1. Brief biographic information about the applicant

Petar Zhelev Stoyanov was born 14.08.1960 in Devin. He graduated from the Higher Institute of Forestry (HIF), major “Forestry”, in 1985 with average scores Very good (5.27) and Excellent (6.00) of the State exam. From August 1985 to February 1987 he worked as a forester in the State game breeding station “Trakia” – Plovdiv, and from 1987 to 1990 he was a Ph.D. student in the HIF. On 1.12.1992 the Higher Attestation Commission (HAC) awarded him the scientific degree "candidate (Ph.D.) in agricultural sciences" (HAC - Diploma № 22820/03.02.1993).

From 26.02.1992 to 09.11.1999 (7 years and 8 months) he was Assistant Professor in the HIF. On 9.11.1999 HAC awarded him the academic position “Associate Professor” (HAC – certificate № 19926/10.01.2000). Since then until the moment he is an Associate Professor in the University of Forestry (UF), and during this period he served as a department head (December 2003 – November 2007) and Deputy Rector of the UF (November 2007 – January 2016).

2. Compliance of the submitted documents and materials of the applicant with those required under the Regulations on the Development of Academic Staff in the UF

Documents and materials of Dr. Petar Zhelev applied for the competition for the academic position “Professor” comply fully with the requirements set in the Regulations on the Development of Academic Staff in the University of Forestry. They are complete and arranged very precisely and this facilitates the evaluation of the applicant.

The minimum required point score by groups of indicators (A, V, G, D, E) for “professor” in professional area “6.5. Forestry” is 550, and Dr. Petar Zhelev has 2519 points, i.e., he exceeds ~~4.5~~ time the necessary point score required for this academic position. Besides, the scores in all indicators are above the required ones.

3. Evaluation of teaching activities of the applicant.

The active and variable teaching activity of the applicant during 27 years, of which almost 20 years as Associate Professor, contributed to the formation of the applicant as an erudite teacher.

Dr. Petar Zhelev has taught 5 courses, of which 4 still continue (Forest Genetics and Breeding, Plant Resources, Biodiversity Conservation, Forest Tree Improvement). He was an active participant in the establishment of an University laboratory for biotechnological and molecular genetic studies in the field of agriculture, forestry and veterinary medicine.

Dr. P. Zhelev supervised 6 Ph.D. students, and three of them already defended their Ph.D. theses (one in 2015 and two – in 2017), one was deducted with right for defense and two are still doing their Ph.D. studies. The total number of M.Sc. and B.Sc. theses developed under the guidance of Dr. P. Zhelev is substantial – 107 for a period of 20 years. It is especially impressive during the last 5 years – 11 M.Sc. students in 2015, 9 M.Sc. students in 2016, 2017 and 2018, and 7 M.Sc. students in 2019. This is an indicator of a M.Sc. advisor that is being selected traditionally by the students. He is a co-author of a practical handbook of dendrology and ornamental dendrology.

4. Evaluation of the scientific, applied and publication activity of the applicant.

Of all 86 scientific publications after getting the Associate Professor position, included in the application, I exclude three, which do not concord with the specialty of the competition: № 26 (The halophytic vegetation...), № 53 (Statistical assessment of fluvisols...) and № 54

(Investigating the effect of substrate, mycorrhizal application... ..on the growth of the wild orchid...), but I include instead two publications from other part, which can be considered as scientific publications: № 103 – Technical guidelines for genetic conservation and use for Hungarian Oak (*Quercus frainetto*) and № 104 – Technical guidelines for genetic conservation and use of Turkey Oak (*Quercus cerris*). Therefore, he is an author of 85 scientific publications, classified as follows:

By type:

- Monographs, books and book chapters – 14 (№№ 73-86), of them 4 with character of monographs (№№ 75, 76, 81, 82), book chapters – 10 (№№ 73, 74, 77-80, 83-86).
- Publications in scientific journals – 51 (№№ 1-25, 27-52).
- Publication in proceedings – 20 (№№ 55-72, 103, 104)

By importance:

- Papers in journals with Impact factor (IF) and Scimago journal rank (SJR) – 32 (№№ 1-23, 24, 25, 27-33). They are published in the most prestigious journals, like Heredity, European Journal of Forest Research, Journal of Biogeography, Conservation Genetics, Canadian Journal of Forest Research, PLoS One, Annals of Botany.
- Papers in journals without IF and SJR – 19 (№№34-52).

By language of publication:

- In Bulgarian – 13
- In English – 72

By the number of co-authors:

- Single author – 1
- First author – 12
- Second author – 32
- Third and subsequent author – 40

The small number of single-author papers is due to the work of the applicant in research groups. He is a desired partner of leading forest geneticists from the European countries like A. Kremer and B. Fady (France), C. Lexer and T. Geburek (Austria), R. Alia (Spain), M. Konnert

(Germany), L. Paule and D. Gömöry (Slovakia), G. Vendramin (Italy), G. Eriksson (Sweden), S. Orlović and B. Nikolić (Serbia), H. Kraigher (Slovenia), M. Bozzano (Italy) and others.

The participation of I. Aneva can be outlined among the Bulgarian co-authors, especially in the field of establishment of localities of rare and medicinal plant species and conservation of their genetic resources, of St. Yurukov in the field of dendrology, of G. Slavov in the field of Forest Genetics and also E. Tsavkov, M. Panayotov, V. Gagov and some others, mostly from the UF.

Besides the scientific publications, the applicant has submitted also 19 popular articles and four books, of which special attention deserves the one about Acad. Boris Stefanov (№ 91). The total printed production after getting of Assoc. Professor position of P. Zhelev comprises 109 publications (85 scientific, 1 handbook and 23 popular).

4.1. Participation in research, applied and educational projects.

Dr. P. Zhelev took part in 41 research and applied projects, 9 of them international and 32 national. He was a head of 16 project and participant in 25 projects. The national projects include institutional, educational and infrastructural projects 2, supported by the National Science Fund – 6, by other institutions – 8, by the UF – 5, developed within personal contracts with different authorities – 11. The number of the international projects is larger by 2, because the applicant has missed his participation in the EUFORGEN (2).

4.2. Characteristics of the published scientific results.

The scientific results published by Dr. P. Zhelev are characterized by a broad scope in different subjects: forest genetics and breeding, dendrology, forest plantations, botany and phytosociology with reference to biodiversity and methods for its conservation. The results are published mostly in leading European scientific journals, whose total Impact factor accounts 41.16, which is a high score for the particular scientific domain and subject.

The scientific results of Dr. P. Zhelev are at high research level, because he applies modern methods in the genetic studies of forest tree species and uses the modern equipment in the laboratories with which he cooperates.

4.3. Reflection of the scientific activity of the applicant in the literature (citations).

The research activities of Dr. P. Zhelev are well known to the international scientific community in the field of the forest genetics and breeding. The scientific production was cited 575 times in 25 European countries, 9 Asian and 4 American countries, in about 80 prestigious scientific journals from all continents. The most cited publications are the following ones: Genetic

differentiation and phylogeny of beech on the Balkan Peninsula (1999) – cited 87 times, Genetic differentiation of oak populations within the *Quercus robur/Quercus petraea* complex... (2001) – cited 63 times, Salient biological features, systematics and genetic variation of *Populus* (2010) – cited 60 times and so on. Of total 575 citations, 338 are in journals with Impact factor and Impact rank (59 %).

4.4. Contributions in the scientific production of the applicant (scientific and applied contributions).

The scientific contributions of Dr. P. Zhelev are the following ones:

- Genetic diversity within and among populations of the main coniferous and broadleaved species in Bulgaria was established, together with some genetic processes taking place in the populations. The two types of markers applied – isoenzymes and DNA – allowed elucidation of the taxonomic status and inheritance of species of the genera *Quercus*, *Pinus* and *Sorbus*.
- The variation of *Pinus hedreichii*, *Betula pendula*, *Juniperus oxycedrus* and two herbaceous species of genus *Sideritis* was documented, as well as some biological and ecological characteristics of these species.
- Methods are developed for monitoring of the forest genetic resources and their conservation under climate change.
- A considerable divergence was found between the Bulgarian and Carpathian populations of *Tetrao urogallus*, while the genetic diversity in *Rupicapra rupicapra* is relatively low.

The scientific-and-applied contributions include:

- Technical guidelines are developed for conservation of genetic resources of *Quercus frainetto* and *Quercus cerris*.
- Forest habitats with high conservation value in Bulgaria are identified and methods for the management of forests in NATURA 2000 are recommended.
- The distribution and phytochemical composition of some medicinal plants is established.

The contributions in the ten papers (2, 3, 4, 6, 12, 16, 25, 27, 28, 30) equaled to a monograph, concern the following moments:

- Establishment of the genetic diversity by means of biochemical and molecular markers in *Pinus sylvestris*, *Pinus nigra*, *Pinus peuce*, *Pinus mugo*, *Abies alba* and *Juniperus oxycedrus*. The representatives of genus *Pinus* are characterized by high within-population genetic diversity and low among population differentiation. *Abies borisii-regis* is not a result of an ancient hybridization, rather than of an introgression in the near past. *Juniperus oxycedrus* possesses high phenotypic variation, but does not show pronounced geographic differentiation on the Balkans.

5. Evaluation of the personal contribution of the applicant

The personal contribution of Dr. P. Zhelev in the publications with foreign co-authors is expressed in the choice of experimental plots, methods of study and interpretation of the results. In the publications with Bulgarian co-authors – botanists, ecologists, physiologists, chemists and other experts – his contribution as a forester is undisputed.

Other personal contributions of the applicant include:

- 51 participations with reports in scientific forums, 27 of them abroad.
- 29 participations as a reviewer and member of a scientific jury, 6 of them in competitions for Professor, 8 – for Associate professor, 10 – for Ph.D., and 5 – for Senior Assistant professor.
- Member of 5 Editorial boards
- Reviewed numerous manuscripts for 21 journals.
- His expert activities encompass also participation in specialized scientific councils affiliated with HAC, in scientific councils of institutes in BAS, national councils affiliated with the Ministry of Environment and Waters, Executive forest agency and in international organizations like EUFORGEN and COST.

6. Critical notes and recommendations

- Instead of presenting of papers equaled to a monograph, the applicant could have defended a thesis for “Doctor of Science” degree.
- I recommend focusing his research to the genetics and breeding of forest trees.

It is advisable to

- ~~I recommend~~ increasing the relative share of single-author scientific papers.
- I recommend widening of the scientific and applied activities of the applicant, focused to establishment of experimental forest plantations.

7. Personal impressions

These concern part of his research activities, his participation in scientific forums and expertise, and are generally very good to excellent.

8. Conclusion

Based on the evaluation of the research and teaching activities, the organizational and expert activities of Assoc. Prof. Dr. Petar Zhelev Stoyanov, I recommend him for the aspired position "Professor" in the subject "Forest Genetics and Breeding", professional area "Forestry"

Signature of the reviewer:

/Professor Al. Alex

The review submitted on: