





АГРАРЕН VHUBEPCUTET Гр. ПАОВДИВ Вх. № НОРС Дело № 68 Получено на 11.06 20 21

### Translation from Bulgarian

# REVIEW

Regarding the performance of Senior Assistant Professor Boyan Stalev Stalev, DSc from the Viticulture and Horticulture Department at the Agricultural University of Plovdiv as candidate in the competition for Associate Professor rank in the Viticulture scientific specialty as announced in SG No. 6 of 22 January 2021

**<u>Reviewer:</u>** Assoc. Prof. Sava Georgiev Tabakov, DSc, higher education field 6.0 Agricultural sciences and veterinary medicine, professional path 6.1 Horticulture, scientific specialty Fruitgrowing, appointed as Chair of the scientific committee by Order No. RD 16-414 of 05.04.2021

## 1. Information about candidate's career and thematic development

Senior Assistant Professor Boyan Stalev Stalev, DSc graduated from the Agricultural University of Plovdiv obtaining in 2005 a Bachelor degree in Agronomy / Viticulture and horticulture and in 2006 a Master degree with professional qualification agronomist in the Production of sowing and planting material program.

In view of increasing their qualification, in 2010/2011 the candidate took part to the 'DNA Technologies', 'Experimental Data Statistical Processing' and 'Modern Educational Technologies and Learning Strategies' modules under the Human Resources Development Operational Program.

In 2013, after successful defense of a dissertation on Comparative study of organic and conventional growing of table grapes in the area of Nayden Gerovo, region of Plovdiv, he obtained the Doctor of Science (DSc) degree.

In 2017, the candidate successfully completed a training in quality management in accordance with the provisions of ISO 9001:2015.

Senior Assistant Professor Boyan Stalev Stalev, DSc was a member of the Faculty Council of the Faculty of Horticulture with Viticulture between 2012 and 2019, and a member of the Academic Council of the Agricultural University of Plovdiv between 2016 and 2019.

## 2. General description of scientific work submitted

For the purposes of the competition for Associate Professor rank, Senior Assistant Professor Boyan Stalev Stalev, DSc has submitted a total of 35 scientific papers.

Scientific publications in the nomenclature field: 31, of which:

- **three** papers related to the doctor degree dissertation that shall not be considered;

- four articles with impact factor (1, 2, 3 and 4), of which #1 is outside of the nomenclature field;

- six articles referenced and indexed in global databases (5, 7, 8, 9, 10, and 11);

- **nine** articles in unreferenced scientific review journals (12, 16 (#17 and #18 are redundant), 19, 20, 21, 22, 23, 24 (#7 and #25 are redundant));

seven articles in conference compendiums (6, 13, 14, 15, 26, 27, 28, and 29) of which #29 is outside of the nomenclature field;

- **no** popular science articles

- \* A book based on the dissertation paper: one
- Monograph: one
- Instruction manual: one co-authored
- Coursebooks: none published

Eligible for review in the scientific specialty are 27 papers as follows:

- Publications with impact factor: three
- Publications referenced and indexed in global databases: five
- Publications in unreferenced scientific review journals: nine
- Publications in conference compendiums: seven

Papers that are not reviewed:

- Articles #1, #5 and #29 for being outside of the nomenclature

The materials required according to the implementing regulation of the Law on the development of academic staff in Bulgaria such as identity documents, official notes, report on author's contributions in scientific papers, list of scientific papers, participation in scientific forums and citations have been attached to the application submitted to the Rector of the Agricultural University of Plovdiv.

## 3. Main directions in candidate's research work

Modern technologies for grape production related to the methods of organic cultivation, the production of seedlings and the compatibility between rootstock and graft, and the creation and cultivation of vines are the areas of candidate's scientific activity.

Senior Assistant Professor Boyan Stalev Stalev, DSc participates in eight projects in the nomenclature specialty and is operational leader of one of them.

### 4. Evaluation of teaching background

Senior Assistant Professor Boyan Stalev Stalev, DSc is an experienced lecturer in the discipline "Viticulture" at the Agricultural University of Plovdiv. As an assistant and senior assistant professor, he has thirteen years of teaching experience. In the last five years between 2015 and 2020, his length of service amounted to a total of 2446.8 hours. During this period the candidate is the author of four curricula for students in Bachelor and Master programs, full-time and parttime education in the disciplines: "Viticulture", "Viticulture and biotechnological methods" and "Production of vine seedlings".

In addition to the Agricultural University of Plovdiv, during the period between 2009 and 2017 Senior Assistant Professor Boyan Stalev Stalev, DSc used to give lectures to entry-level students at the West Pomeranian University of Technology in Szczecin, Poland under the Erasmus program. These lectures were related to viticulture, ampelography and production of vine seedlings. In recognition of this activity, in 2015 the candidate received a diploma for the development of relations between the Agricultural University of Plovdiv and the West Pomeranian University of Technology in Szczecin, Poland.

In 2012 the candidate participated as a lecturer under measure 111 Vocational training, information activities and dissemination of scientific knowledge.

Senior Assistant Professor Boyan Stalev Stalev, DSc also participated as a lecturer in the training courses of the National Agricultural Advisory Service (NAA) where he facilitated eight workshops during the period 2014-2020.

#### 5. Significance of the obtained results

The significance of the obtained results is proved by sixteen citations, of which twelve in foreign editions, four in Bulgarian. The candidate has four citations in impact factor magazines. There are eight scientific papers in Bulgarian, seventeen in English and two in Polish. Five of the papers submitted for review are independent.

## 6. Significance of contributions to science and practice

Depending on the nature and significance of the contributions, they are presented as follows:

## Scientific contributions of original and methodical nature:

I acknowledge as original contributions the results related to the chemical composition of grapes obtained using the latest equipment possible. The information in works (16,17,19) is very useful for winemakers in the transformation of grapes into relevant products. The concentrations of nitrates and nitrites in the grapes, the vitamin C content, pH and content of extract, dry matter, organic acids, etc. were determined. In addition, the change of the individual colors constituting the dye matter contained in the skin of red varieties of grapes, as well as how it changes depending on the ways of ripening of grapes was determined.

I acknowledge as original contributions the results related to the chemical composition of new varieties of table grapes. The studied seedless grape varieties Aphrodite, Blyan and Elitsa with well-developed residue and red table grapes Troy and Phoenix with soft seeds are characterized by high content of polyphenols with antioxidant effect. The seedless dessert varieties Aphrodite, Blyan and Elitsa contain many phenols, antioxidants and anti-radicals, which are 4 to 8 times higher than the dessert varieties Bolgar and Brestovitsa. The red table grapes Troy and Phoenix contain a lot of phenols, antioxidant and anti-radical effect, which is 2 to 5 times higher than that of the Palieri variety. (Paper 14)

I acknowledge as original contributions the results related to the compatibility of rootstock and variety carried out on 58 table and wine grape varieties from different ecological groups, grafted on rootstock Berlandieri x Riparia SO4, which under production conditions show that there is good connection with most of them to the exception of the varieties Rusalka 3, Srebrostruy, Sultanina, Nikopolski Mavrud and Pinot Noir. (Paper 21) It has been found that the formation of callus tissue at the base of the substrate is largely determined by the grafts. When transplanted onto an omega copulation, callus tissue formation has a greater effect on the substrate than the graft, but the graft also has a large effect on the regeneration processes. (Paper 20).

I acknowledge as an original contribution the participation in the methodological guide published in Poland containing specialized information for teachers, students and producers of grapes and wines.

### Scientific contributions confirming previous findings:

The relationship between foliar gas exchange and yield in the variety Velika has been established with different ways of maintaining the soil surface, as well as the use of conventional technology in the cultivation of vines, including the use of synthetic fertilizers and fertilization with organic (manure) leading to increased photosynthetic activity of the leaf apparatus, which is directly related to the fruiting of plants. The use of manure is a natural solution suitable for organic production. In addition, loading the plants with a large number of winter eyes leads to a decrease in leaf gas exchange. (Paper 2).

The values of the nutrients in the soil in the area of the village of Nayden Gerovo, Plovdiv region have been established by applying conventional technology and organic farming of vine. In conventionally grown vines and in the plantation mulched with straw, the phosphorus content is higher in the layer 0-30 cm, compared to 30-60 cm. The ammonium form of nitrogen undergoes the same course of formation and consumption in the layer of 0-30 cm and 30-60 cm during the period May-July-September. The quantity of microorganisms in the plantation fertilized with manure is the largest, followed by the vines grown with grassing between the rows, mulching with straw and the least in the control. Organic mass is a serious prerequisite for activating the biological activity of various microorganisms.

Valuable information has been collected and processed about the chemical composition of table grapes in connection with its use in the treatment of diseases and various therapies, the content of antioxidants and other useful substances. (Paper 17)

## Original applied scientific contributions

Studies on wine and table grape varieties in different settlements within the South-Central region of Bulgaria showed wide possibilities for application of organic methods in growing vines, the suitability of individual terrains for such production, as well as the application of modern means to control some of the pests on vines. Due to the growing importance of organic production in Europe and Bulgaria, these studies are very relevant on the one hand, and on the other hand are useful in order to provide guidance for future producers who would like to engage in such production. (Papers 15, 18, 21).

It has been found that the use of Ca-Cu as a growth inhibitor has led to a reduction in the ripening period of shoots. This allows the vine plants to be better prepared for the dormant period, as well as to carry out an earlier harvest, especially in the case of late-maturing varieties, such as those involved in the experiment. (Paper 28).

An economic analysis related to the organic production of table grapes of the Velika variety has been made. This is an important point in the practical orientation of farmers who have decided to engage in such production. The parameters of economic efficiency in growing table grapes have been established. Due to the large number of manual operations in dessert vineyards, their production is characterized by high cost. Therefore, it is important to optimize the processes in the cultivation of vineyards in order to increase the profit rate and rate of return, which in turn is related to improving the varietal structure of plantations with market-oriented varieties and the inclusion of more mechanized operations in cultivation technology. (Papers 4,11,13)

The production of vine planting material is promising for Bulgaria in terms of the direction of development of our agriculture. The stratification of grafted rootstocks accounts to a large share of this production. Currently, it is mostly carried out in boxes placed in heated rooms. It was found that for smaller productions up to 40 to 50 thousand vines, from the point of view of energy saving it is more profitable to use local heating only in the zone of callus formation. (Paper 22)

Based on many years of experience in the creation and shaping of vineyards, advice is given regarding pruning for the shaping and fruiting of the vine plant in order to obtain quality products and proper operation over the years. In addition, the most important advantages and disadvantages of the different ways of shaping are indicated, which is very practical. (Paper 16)

The presented monographic work "Using some technological solutions in the cultivation of organic vines" and the book published based on the dissertation "Comparative study of organic and conventional production of table grapes in the village of Nayden Gerovo, Plovdiv region" are very useful in the practice, in view of the system of measures to reduce costs, increase yields and the quality of the grapes produced.

## 7. Critical remarks and omissions

The main drawback in the presented scientific papers is the short period over which the experiments are conducted. For most of them (2, 3, 4, 5, 6, 9, 12, 14, 16, 17, 20, 21, 22, 23, 26, 27, and 28), the results cover two years and for (8) only one year. The candidate should know that experiments with agricultural techniques in field conditions where the conditions during the vegetation are variable are recommended to be with a minimum period of three years.

This remark does not diminish the merits of the presented works, but it should be taken into account in the subsequent scientific work.

#### 8. Recommendations

Senior Assistant Professor Boyan Stalev Stalev, DSc should focus on research related to the nomenclature specialty in specific areas of physiology and biology of the vine.

## 9. Conclusion

The candidate's scientific output meets the provisions of the Law on the development of academic staff in Bulgaria, its Implementing Regulation and the Regulations of the Agrarian University of Plovdiv for its application.

Senior Assistant Professor Boyan Stalev Stalev, DSc has worked and established himself as a highly qualified scientist and lecturer. His scientific developments in the field of organic grape production, agrotechnology of vineyards, production of planting material, the relationship between variety and rootstock and some economic indicators in viticulture are original and enrich the knowledge in this field.

The above gives me reason to **POSITIVELY** evaluate the research, pedagogical and applied activities of the candidate Senior Assistant Professor Boyan Stalev Stalev, DSc.

Therefore, I propose to the esteemed jury to vote positively, and the Faculty Council of the Faculty of Horticulture with Viticulture at the Agricultural University of Plovdiv to award the academic position of "Associate Professor" to Senior Assistant Professor Boyan Stalev Stalev, DSc in the scientific specialty "Viticulture".

Plovdiv 02.06.2021 Reviewer:

Assoc. Prof. Sava Georgiev Tabakov, DSc

Ana

I, Anton Stoyanov Zlatarev, hereby certify that this is a true and correct translation that I have made from Bulgarian into English of the attached document, namely: Review of performance. The translation contains seven (7) pages.

Translator: .

..... Anton Stoyanov Zlatarev