

REVIEW

by Prof. Dr. Toni Bogdanova Mihova, Technical University of Sofia, Plovdiv branch

Regarding: competition for obtaining the academic position PhD in:

Field of higher education: 3. Social, economic, and legal sciences

Professional field: 3.8. Economics

PhD Program: Economics and Management (Industry)

Author: Stefan Deyanov Georgiev

Dissertation topic: Changes in quality and economic indicators in winemaking when using enzyme preparations.

PhD supervisor: Associate Professor Dr. Tania Petrova Yankova - Lilova - Paisii Hilendarski University of Plovdiv

1. General description of the submitted documents and materials.

By order No. P21-1116 dated 25/05/2023 of the Rector of Paisii Hilendarski University of Plovdiv (PU), I have been appointed as a member of the scientific jury for ensuring a procedure for the defense of a dissertation work on the topic of Changes in quality and economic indicators in winemaking when using enzyme preparations for acquiring the educational and scientific degree PhD in the field of higher education 3. Social, economic, and legal sciences, professional direction 3.8 Economics, doctoral program Economics and management (industry) jury. The author of the dissertation is Stefan Deyanov Georgiev - a full-time doctoral student at the Department of Management and Quantitative Methods in Economy, with the PhD supervisor Associate Professor Dr. Tania Petrova Yankova - Lilova from the Paisii Hilendarski University of Plovdiv (PU).

The set of paper documents and materials submitted by Stefan Deyanov Georgiev is in accordance with Article 36 (1) of the Regulations for the Development of the Academic Staff of the PU and includes the following documents:

- a request to the Rector of the PU for initiation the procedure of defense of a dissertation
- CV in European format;
- protocol from the departmental council related to reporting the readiness to open the procedure and preliminary discussion of the dissertation;
- dissertation
- autoabstract
- declaration of originality and authenticity of the presented documents
- reference to compliance with the minimum national requirements
- a list of scientific publications on the subject of the dissertation
- copies of the scientific publications
- set of paper documents from point 1 to point 10 - 3 pcs
- set of documents from points 1, 2, 3, 4, 6, 7, 8 - 7 pcs

The PhD student has attached three publications.

Based on the review of the attached documents, I believe that the doctoral student has

submitted the materials required for the review procedure, in accordance with the requirements of Article 4 of DASRBA, art. 2 (2), art. 30 (3) of Rules on the application of DASRBA, and art. 37 (1) of University's Rules on Academic Staff Development.

2. Brief biographical data of the PhD student

Stefan Georgiev obtained his master's degree in Technological engineering (specialty: Wine and beer technology) from Technological Institute of the Food Industry in 2001 . He obtained a second master's degree in Financial Management at the Paisii Hilendarski University of Plovdiv in 2023. Stefan Georgiev is a full-time PhD student at the same university in the PhD program Economics and Management (Industry). During the period from 01.03.2020 to 01 .03.2023, he was a full-time doctoral student at the same university in the doctoral program Economics and Management (Industry).

The main stages of Stefan Georgiev's professional development are as follows:

- deputy Manager of Vinar BG Ltd - Haskovo from 01.12.2020 to the present moment
- engineering technologist, Terra Tangra Ltd, Harmanli from 06.04.2015 to 06.04.2020
- production organizer, Lyubimets Wine Estate Ltd (Villa Lyubimets Ltd) - Plovdiv from 06.03.2012 to 20.05.2013
- consultant at Daniel Wines, Sakar Winery, from 15.04.2009 to 05.03.2012.

The PhD student has organizational skills and competencies as a project manager for the construction and renovation of enterprises; human resource management competencies; management of quality control systems competencies; the ability to resolve conflicts and define goals; time management skills.

To conclude this section, I summarize that the doctoral student has an extremely rich professional experience, related and corresponding to his educational development, which is an excellent prerequisite for in-depth research work on the topic of the dissertation work.

3. Relevance of the problem and appropriateness of the objectives and tasks

It is essential for Bulgarian wine producers to maintain their market positions and ensure the possibility of successful development in competitive conditions. In this regard, important factors are the use of scientific research approach and development of innovative technologies. The use of enzyme preparations has emerged as one of the significant innovations in recent decades. This is an issue for which a relatively small number of incomplete research studies can be found. Therefore, the dissertation problem concerning the changes in the quality and economic indicators in wine production with the use of enzyme preparations is not only topical, but also of great practical importance. The arguments for this statement are related to the need to study the prerequisites for the application of industrial enzyme preparations in different winemaking methods and for different types and categories of wines.

We can systematize the specific tasks in the dissertation as follows:

- review of literature on the dissertation topic;

- determination of the significant indicators on which the research is carried out;
- development of a conceptual model to reveal dependencies between the quality indicators of the wines produced and the economic condition of the enterprise;
- study of the changes in quality indicators in wine production related to the use of enzyme preparations, as well as the dependence of economic on quality indicators;
- analysis of the changes in quality and economic indicators, as a result of the use of enzyme preparations;
- generalization and validation of the obtained research results.

In summary, the problem developed in the dissertation is highly topical in scientific and scientific-applied terms. The tasks are precisely and clearly formulated, in accordance with the purpose of the dissertation.

4. Knowledge of the problem

The PhD student used 113 sources for his research, of which: in Bulgarian (65), in English (27), in Russian (4), in French (3) and 14 Internet sources. Some of the sources are from recent years, which shows that he knows the current state of the researched issues. The author also uses primary data from his own empirical research:

- a survey conducted among established specialists from the branch
- lab experiments with enzyme preparations
- a survey conducted among the owners of companies with significant wine sales in the country

The extensive and detailed literature review is a prerequisite for clarifying the theoretical framework for the empirical study of the economic and technological aspects of wine production. The systematization of the different concepts and views of the individual authors as well as the formulated conclusions show the doctoral student's skills in processing a considerable amount of information, analytical abilities and critical thinking.

I summarize that the great practical experience gained while working in the companies, combined with the in-depth analytical research activity are indisputable proof of the knowledge of the problem and the creative evaluation of the literary material.

5. Methodology of the research

In developing the dissertation, a combined research strategy is used, which includes the application of both quantitative and qualitative methods.

The following basic research steps can be defined:

- a questionnaire survey conducted through "face-to-face" interviews with pre-selected respondents among industry professionals and owners of commercial establishments;
- introduction of weighting factors to determine the importance of influence and a point system was developed to assess belonging to a category;
- using experimental data obtained after studying and comparing the effect of the application of industrial enzyme preparations in different methods of vinification of red grapes.

- measuring and storing in a database the values of indicators determining the quality of red wines produced.
- establishing the relationship between changes in quality indicators and the resulting changes in economic indicators.
- performing an analysis and evaluation of the economic effect of the production activity of the winery, the investment in real assets and the overall efficiency of an investment project.

The specific conclusion of this section is that the chosen research methodology contributes to the realization of the set goal to a high degree and obtaining an adequate answer to the tasks solved in the dissertation work.

6. Characterization and assessment of the dissertation

The dissertation contains: introduction, three chapters, conclusion, bibliography and appendices and has a length of 292 pages. Each chapter ends with conclusions and summaries, which brings clarity and shows the degree of definiteness of the author's positions and statements.

In the first chapter, the PhD student examines the different author's concepts and views in detail, based on which he theorizes the economic and technological aspects of wine production. For this purpose, the author explains the key concepts: efficiency of the enterprise's activity, investment, and investment process. Two concise and accurate summaries are formulated regarding the performance of the wine enterprise.

The technological aspects of winemaking are discussed in the following sequence: general information on the structure, composition and ripening of grapes; factors affecting the quality of grapes; technology of red wines; enzyme preparations in winemaking. Based on the information provided, the PhD student formulates six conclusions regarding the technological aspects of winemaking. The author's categorical position regarding the production of high-quality red wine is apparent. In the first chapter, a conceptual model for the methodology of the thesis is developed, which shows the logical relationships and dependencies between the fundamental stages that are passed through to reveal the impact of enzymatic preparations on the quality of red wines produced and, consequently, on the economic indicators of production.

The second chapter contains the experimental study of the influence of enzyme preparations on quality indicators in winemaking. The analytical review of this chapter allows the following systematization of the content:

- an author's experiment was conducted to study and compare the effect of the application of industrial enzyme preparations in different methods of vinification of grapes of the Mavrud variety; the obtained indicators determining the quality of the produced red wines were studied;
- an analysis of the results of the implemented 4 series of experimental variants was made: series A - extraction in the mode of blocked alcoholic fermentation; series B - extraction in simulated alcoholic fermentation mode; series C - extraction in the mode of ongoing alcoholic fermentation; series D - extraction in the mode of ongoing alcoholic fermentation;
- conclusions and recommendations are made regarding the use of the studied enzyme preparations;

The PhD student shows his potential for research work in this chapter, in particular with the skilful use of different research methods, the interpretation and illustration of results and the ability to make specific recommendations based on the formulation of accurate conclusions.

The changes in economic indicators in winemaking with the use of enzyme preparations are examined in the third chapter. For this purpose, data from the activity of two specific medium-capacity wineries located in Southern Bulgaria were used.

The characteristic features of the two enterprises are as follows:

- Enterprise 1 does not use enzyme preparations, works with known classical wine production technologies and uses the appropriate technological equipment.
- Enterprise 2 uses enzyme preparations, new technologies and their corresponding technological equipment.

The main 14 indicators for determining economic efficiency were calculated, based on the activity of the two enterprises at minimum and maximum values of their indicators. The values of the indicators were calculated according to the basic 7 methods for determining the effectiveness of investments. Based on the obtained results, the PhD student formulated 8 conclusions on the appropriateness of the use of enzyme preparations in the production of different types of wines. On the basis of the initial data from the approvals with a classic and innovative type of enterprise, recommendations are formulated for choosing technologies for investments in accordance with previously set goals.

The conclusion summarizes the findings and interpretations of the results of the conducted research.

I express my strong opinion that the dissertation is a fully completed study, with the goal achieved, the objectives fulfilled and the main hypothesis confirmed: The use of enzyme preparations in the production of wines is not economically justified for every type and quality.

7. Scientific and practical contributions and significance of the development

I accept the reference for the scientific contributions in the dissertation. I highly value the following scientific and applied achievements:

Scientific and applied contributions of the dissertation:

1. Development of a conceptual model for the study of changes in quality and economic indicators in winemaking when enzyme preparations are used.
3. Identification of the main indicators determining the quality of red wines, and proposing a system for a unified quantitative assessment of quality in winemaking.
4. Conducting an experiment with consideration of the changes over time of the main quality parameters of the produced red wines under different vinification methods.
5. Test of the conceptual model in two enterprises of different types from the wine industry.
6. Formulation of specific recommendations to enterprises from the wine industry regarding the use of enzyme preparations, based on our own research.

In conclusion, I believe that the scientific and applied achievements are the personal work of the doctoral student, based on the excellent theoretical training and practical experience in a real company environment.

8. Assessment of dissertation publications

The PhD student presents three publications on the topic of the dissertation: two of them are independent and one is co-authored. One of the articles is in Bulgarian and two are in English, one of them is in Web of Science. The review of the publications allows us to be convinced of the doctoral student's abilities to synthesize different views, to summarize, to analyze and to express his position.

I accept all publications as articles related to the topic of the dissertation. They summarize and publish essential problems and results of research in the dissertation.

9. Personal involvement of the PhD student

I highly appreciate the personal participation of the doctoral student, as well as the contribution of the scientific supervisor for the balanced structured and completed dissertation. After a thorough review of the materials, I believe that the contributions formulated and results obtained are entirely to his personal credit.

10. Autoabstract

Autoabstract is 32 pages long and characterizes the thesis in a synthesized form. It includes the main chapters, results of the study, conclusions, contributions and bibliography. The autoabstract reflects objectively the results of the study and is developed in accordance with the requirements.

I have no critical remarks about the materials presented.

11. Critical remarks and recommendations

The dissertation is a completed comprehensive study of the changes in quality and economic indicators in winemaking when using enzyme preparations, with an achieved goal, solved tasks and clear scientific-applied and applied contributions.

I have no critical remarks about the materials presented.

12. Personal impressions

I know Stefan Georgiev personally as a part-time teacher at Technical University of Sofia, Plovdiv branch. He conducted seminar classes in Economics, Company Management and Marketing. In a short time, he has established himself as a lecturer with authority among students and colleagues, with interactive teaching methods and a strong practical

orientation of the topics covered proving to be a good professional with teamwork skills and excellent communication abilities.

13. Recommendations for future use of the dissertation contributions and results

The review of the materials, the obtained results, as well as the scientific and scientific-applied contributions of the dissertation research are grounds for the conclusion that the doctoral student has a serious potential to fulfill the following recommendations in the future:

1. To initiate meetings, seminars, round tables and other forums with representatives of the wine industry and the scientific community, in order to popularize the results of its research.
2. To deepen and broaden exploration in future research through digital models and tools.
3. To continue publishing in prestigious scientific journals with impact factor and impact rank in English.

CONCLUSION

The dissertation **contains scientific-applied and applied results, which are an original contribution to science and meet all the requirements** of the Law on the Development of the Academic Staff in the Republic of Bulgaria (DASRBA), the Rules on the application of DASRBA and the relevant Regulations of Paisii Hilendarski University of Plovdiv.

The dissertation shows that the PhD student Stefan Deyanov Georgiev **possesses** in-depth theoretical knowledge and professional skills in the scientific specialty of Economics and Management (Industry), **demonstrating** competencies and skills for independent scientific research.

Due to the above, I confidently give my **positive evaluation** for the conducted research, presented by the reviewed dissertation, autoabstract, achieved results and contributions, and ***I propose to the esteemed scientific jury to award the educational and scientific degree Doctor*** to Stefan Deyanov Georgiev in the field of higher education: 3. Social, economic and legal sciences, professional field 3.8 Economics doctoral program Economics and Management (industry).

Plovdiv:

REVIEWER: / Prof. Dr. Toni Mihova /

19.06.202