Лесотехнически университет
Агрономически факултет
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OPINION

on dissertation for obtaining the educational and scientific degree "Doctor" in: field of higher education 6. Agrarian Sciences and Veterinary Medicine professional field 6.1 Plant-Growing, scientific specialty "Viticulture"

Author of dissertation: Narjes Jamal Aldine part-time doctoral student at the Department of Agronomy at the University of Forestry, (UF), Sofia, Bulgaria.

Dissertation topic: „Potential of Nano-Fertilization on Enhancing the Productivity of Traditional Lebanese Table Grape Variety Tfiefihi"

Reviewer: Assoc. Prof. Dr Milena Hristova Yordanova, University of Forestry, Sofia, professional field 6.1 Plant Growing, Research speciality "Vegetable growing", appointed as a member of the scientific jury by Order No. ZPS- 153/17.04.2026 of the Rector of the UF.

1. Relevance of the problem.

Modern agriculture is characterized by an increasingly ecological focus, a search for modern solutions, but at the same time, a desire to preserve traditional local species and varieties that are well adapted to a certain region.

As innovative products, nano-fertilizers are the focus of modern agricultural technologies because small quantities achieve complex plant nutrition.

The climate changes that have occurred also raise questions related to the adaptation of plants in the context of a changing climate and updating cultivation methods.

In this context, the topic and tasks of the dissertation, which are related to the search for innovative solutions to improve the nutrition of a traditional Lebanese grape variety, make them relevant both in scientific and applied aspects.

2. Degree of knowledge of the state of the problem and creative interpretation of the literature review.

In developing her dissertation, the doctoral student has selected and analyzed a total of 216 literary sources. She cites and summarizes them very accurately and correctly, and their very good interpretation is evident in the well-made, structured literature review. This shows a very good knowledge of the state of the problem.

3. Aim, objectives, hypotheses and research methods. Relevance of the chosen research methodology to the stated aim and objectives of the dissertation.

The main goal is clearly and precisely formulated and corresponds to the topic of the dissertation work - to evaluate the effect of nano-fertilization on the productivity, growth and quality of the fruits of the traditional Lebanese grape variety "Tfiefihi", grown in calcareous soil conditions prevailing in the Bekaa Valley, Lebanon. To achieve it, the experimental work goes through two main phases, covering two consecutive years. For each phase, different hypotheses

have been derived, and tasks related to the main goal have been developed to answer the questions posed.

The selected materials and methods are very well selected to solve the tasks set and correspond to the set goal.

4. Visualization and presentation of the results.

The dissertation is very well structured in six well-defined chapters, and together with the introduction, the literature sources and the appendices, it covers a total of 123 pages. The dissertation is richly illustrated with photographs, graphs and tables, formed in a total of 16 figures, 34 tables and 14 appendices. The illustrations are of a very good level and excellently present and complement both the chapter with the described materials and methods, and the obtained results.

5. Discussion of results and literature used.

The data obtained from the experimental part, forming the basis of the dissertation work, are presented correctly, and the results are discussed in depth, and during the discussion comparisons and references to authors cited in the literature review are made. The interpretation of the results by the doctoral student is well-founded and allows for conclusions and recommendations that correspond to the set goal and the developed tasks.

6. Contributions of the thesis.

Based on the results obtained, 6 contributions of a scientific and applied nature have been formed. They are original and reflect the achievements in scientific work. It has been established that the type of nano-fertilizer, the concentration and the time of application can significantly affect the parameters of vegetative growth. Excessive application of nano-fertilizers, especially at higher concentrations, leads to a decrease in the weight of the bunches and the number of berries, which suggests a possible imbalance of nutrients or phytotoxic effects. The observed fluctuations in macro- and microelements emphasize the strong influence of environmental conditions and emphasize the dynamic nature of the absorption and redistribution of nutrients in the vines.

7. Assessment of the extent of the dissertator's personal involvement in the contributions.

Doctoral student Narges Jamal Aldn has carried out a large amount of research and experimental work, has thoroughly interpreted the obtained results and has shaped the scientific and applied contributions. I believe that the dissertation presented in this way is the personal work of the doctoral student, under the guidance of her scientific supervisor and scientific consultant.

8. Critical comments and questions.

The dissertation is very well developed in terms of structure and I have no critical notes or questions for the doctoral student.

9. Published articles and citations.

The doctoral student presents 3 scientific articles related to the dissertation

10. Assessment of the publications on the dissertation: number, nature of the publications in which they are printed. Reflections in science - use and citation by other authors.

The presented articles are published in refereed and indexed journals in world databases. She is the sole author of one of them and the first author of two others. No citations are presented.

Presented abstract reflects objectively the structure and content of the dissertation.

CONCLUSION:

On the basis of the different research methods learned and applied by the PhD student, the correctly derived experiments, the made generalizations and conclusions, I consider that the presented dissertation meets the requirements of the FRAADB and the Regulations of the University of Forestry for its application, which gives me the reason to evaluate it as **POSITIVE.**

I take the liberty of suggesting that the Honourable Scientific Jury also vote in the affirmative and award the Narjes Jamal Aldine the educational and scientific degree ***"Doctor"*** in the scientific specialty

Date: 11.05.2026
Sofia

PREPARED
THE OPINION: .....
(Assoc. prof. Dr. Milena Yordanova)