Лесотехнически университет
Агрономически факултет
№ АГ-3555
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OPINION

On dissertation for obtaining the educational and scientific degree "Doctor" in: field of higher education *Area 6. Agricultural Sciences* professional field *6.1 Crop Production*, scientific specialty *'Viticulture'*.

Author of dissertation: **"mag. Narjes Jamal Aldin"** Doctoral student (full-time, part-time, independent study) at the Department "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. Boyan Stalev Stalev, Agricultural University – Plovdiv, professional field 6. Agricultural Sciences and Veterinary Medicine, 6.1 Crop Production, scientific specialty "Viticulture," has been appointed as a member of the scientific jury by Order No. ZPS-153/17.04.2026 issued by the Rector of the University of Forestry (LTU)

1. **Relevance of the problem.** The dissertation is dedicated to an extremely important issue related to vine nutrition, namely the effect of four nano-fertilizers—Lithovit Standard, Lithovit Amino25, Biozar Amino Ca, and Biozar Amino Ca+Bo—on the growth, physiological performance, and productivity of the traditional Lebanese table grape variety "Tfiefihi".The formation of a balance between "terroir," climatic components, and vine nutrition showed significant variations in vegetative growth, leaf physiology, nutritional status, and yield components. Overall, the results indicate that nano-fertilizers, especially Biozar Amino Ca+B, when applied once in excessive doses, can reduce productivity, which highlights the importance of optimized dosing strategies under calcareous soil conditions.

The topic was assigned in a timely manner and successfully developed by the doctoral candidate, **m.sc. Narjes Jamal Aldin.**

2. Degree of knowledge of the state of the problem and creative interpretation of the literature review. The doctoral candidate, **m.sc. Narjes Jamal Aldin**, demonstrates a very good level of awareness and understanding of the problem. This is evident from the impressive bibliographic review, which includes 216 literature sources relevant to the subject under investigation. It is important to emphasize that the literature sources and the authors' viewpoints have been correctly interpreted.

3. Aim, objectives, hypotheses and research methods. Relevance of the chosen research methodology to the stated aim and objectives of the dissertation. Consistency of the selected research methodology with the aim and objectives of the dissertation. The aim of the dissertation is to evaluate the effect of nano-fertilization on the productivity, growth, and fruit quality of the traditional Lebanese table grape variety 'Tfiefihi', grown under calcareous soil conditions predominant in the Bekaa

Valley, Lebanon, over a two-year period (2020–2021 and 2021–2022). To achieve the aim, specific tasks have been developed. The methods used are up-to-date and appropriately aligned with the fulfilment of the stated objective.

4. Visualization and presentation of the results.

The dissertation comprises 123 pages, including 34 tables, 16 figures, and 14 appendices. The titles of the sections and subsections are clearly formulated, which facilitates the reader's understanding. A variety of appropriate methods and means for presenting the experimental material have been applied. The dissertation is written in a good language and style, and it is evident that the candidate successfully uses certain computer solutions and technologies.

5. Discussion of results and literature used.

The interpretation of the experimental data and the resulting conclusions are scientifically sound. The sections related to the results of the practical work are properly structured in accordance with the conducted experimental work and the set objectives. A total of 6 conclusions are presented. Before beginning the main experimental work with the 'Tfiefihi' variety, the doctoral candidate reviewed and summarized 216 literature sources. This demonstrates her level of awareness and familiarity with the subject.

6. Contributions of the thesis. A total of 7 contributions have been summarized.

Scientific contributions

1. The nutrient content in the leaves showed significant variability influenced by fertilizer formulations, application timing, and environmental conditions, suggesting the need for flexible nutrient management plans.
2. The vegetative growth parameters, including leaf area and shoot length, were positively influenced by the interaction between nano-fertilizer type, concentration, and application timing.

Scientific and applied contributions

1.Nano-fertilizers applied to the 'Tfiefihi' variety did not have a significant effect on the onset of ripening or harvest dates, although minor phenological changes may still have agronomic significance.

2. Excessive application of nano-fertilizers resulted in reduced cluster weight and fruit number, indicating phytotoxic effects or a nutrient imbalance at high doses. This clearly shows that more fertilizer does not necessarily lead to better performance; on the contrary, overuse of nano-fertilizers can disrupt the plant's physiological functions and decrease productivity. This finding highlights the need for careful optimization of fertilizer doses in order to maximize benefits while avoiding negative impacts on fruit development.

3. Yields varied between the two studied years, reflecting the strong influence of environmental conditions on the effectiveness of nano-fertilizers. Such variability highlights the need to contextualize fertilization strategies within the local climate and seasonal weather conditions in order to achieve consistent and reliable improvements in grape productivity.

4. The acidity and pH of the fruits remained relatively stable and appeared to be influenced more by seasonal climatic variations than by the fertilizer treatments.

7. Assessment of the extent of the dissertator's personal involvement in the contributions. The dissertation and the presented contributions are the personal work of the doctoral candidate.

8. Critical comments and questions. I do not provide remarks and recommendations, as they were given in advance and have been taken into account in the final preparation of the dissertation.

9. Published articles and citations. Four articles related to the dissertation have been published.

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

A total of three scientific publications related to the dissertation have been published in the journal Acta Horticulturae.

1. Jamal Aldine, N. (2022, August). Effect of amino-fertilizer on berries growth of Lebanese traditional table grape. Acta Horticulturae, ISSN: 0567-7572 (print); ISSN: 2406-6168 (electronic), 1370, 189 194.DOI:10.17660/ActaHortic.2023.1370.24
2. Jamal Aldine, N., Popov, K.T., El Masri, I.Y. and Sassine, Y.N. (2023). Comparing the effect of nano and conventional fertilizers on Lebanese table grape Tfiefihi. Acta Hortic. ISSN: 0567-7572 (print); ISSN: 2406 6168 (electronic), .DOI: 10.17660/ActaHortic.2023.1370.25 1370,195-200
3. Aldine, N. J., Popov, K. T., Atrash, A., Al Eit, A. A., El Masri, I. Y., & Sassine, Y. N. (2022, August). Effect of nano-fertilizer on cluster characteristics of table grapes. In XXXI International Horticultural Congress (IHC2022): International Symposium on the Vitivinicultural Sector, Acta Horticulturae, ISSN: 0567-7572 (print); ISSN: 2406-6168 (electronic), 1370 (pp. 153-158).

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 / UNCONDITIONAL**.

I take the liberty of suggesting that the Honourable Scientific Jury also vote in favour and award **Mag. Narges Jamal Aldin** the educational and scientific degree **"Doctor"** in the scientific specialty **"Viticulture"**.

Date: 10.05.2026 year.
Sofia

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(Assoc. Prof. Dr. Boyat Stalev)