

POSTURE

Concerning: Dissertation work for awarding of educational and scientific degree “doctor” in: field of higher education 6. Agricultural sciences and veterinary medicine, the professional field 6.1. Crop Production, the scientific specialty "Agrochemistry"

Author of the thesis: Wissam Hassan Hourani, part-time PhD student at the Department of Agronomy at the University of Forestry, Sofia

Topic of the PhD thesis: "New approaches for saffron (*Crocus sativus* L.) fertilization in Lebanon"

Member of the scientific jury: Prof. Svetla Stoyanova Kostadinova, PhD, Agricultural University - Plovdiv, field of higher education 6. *Agricultural sciences and veterinary medicine*; professional field: 6.1 *Crop production*; scientific specialty *Agrochemistry*, appointed as a member of the scientific jury according to order № ЗПС-541/5.12.2022 of the Rector of the University of Forestry

1. Actuality of the problem.

The chosen topic and tasks of the dissertation work are current in scientific and scientific-applied terms. Saffron is an economically very important crop and is the most expensive spice in the world. Optimizing saffron nutrition using new generation fertilization products is a current and understudied scientific problem.

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

The literature review covers 26 pages and is well structured. It demonstrates a very good awareness of the doctoral student about current and previous research in the scientific field of the dissertation and that the doctoral student has creatively evaluated the available information on the problem at hand. A targeted and thorough literature review on the subject was made. Two hundred and twenty six literary sources are cited, with titles published after 2010 prevailing.

3. Aim, tasks, hypotheses and research methods. Correspondence of the chosen research methodology with the set goal and tasks of the dissertation work.

The aim of the study is correctly stated, namely to explore new approaches to saffron fertilization in Lebanon. The main tasks to be solved are specific, clearly and accurately formulated. The sequence of conducting the research in

three phases, reflected in the "Materials and methods" section, corresponds to the tasks set. The chosen research methodology was very well planned. It fully corresponds to the successful realization of the set goal and tasks. The doctoral student has successfully mastered and applied modern analysis methods and appropriate programs for mathematical and statistical processing of the results.

4. Visualization and presentation of the obtained results.

The dissertation is presented on 127 pages. The development in terms of volume, structure and balance between the individual parts fully meets the requirements for a dissertation work for the award of the ONS "Doctor" and is in accordance with the ZRASRB and the Regulations for its implementation at University of Forestry, Sofia. The obtained results are correctly presented and very well illustrated in 14 tables and 28 figures. Five colorful appendices are included with the dissertation.

5. Discussion of results and literature used.

The results of the research, their analysis and discussion occupy a significant part of the dissertation work. The discussion of the obtained results is carried out in depth in a structured logical sequence. The PhD student uses modern methods of analysis. The presented literature is used very skillfully to support and explain the data obtained. The dissertation is written in a high scientific style and reflects the author's ability to independently analyze and summarize the results. Appropriate statistical methods were used to accurately evaluate the data. In general, the presentation of the results, their visualization, the shaping of the dissertation work is precisely done.

6. Contributions of the dissertation.

Scientific contributions

- It has been found that Spanish *Crocus* cultivated in North Lebanon in Douma was *Crocus oreocreticus* according to the DNA study

Scientific and applied contributions

- It has been proven that climate and soil conditions in Douma (North Lebanon) are suitable for saffron cultivation allowing the production enough stigma yield per flower.
- It has been demonstrated that nano-fertilizers and Seaumic, applied alone, can improve all quantitative and qualitative traits of saffron in comparison to non-treated plants.
- It has been clearly proven that the use of SAP can complement the effect of the tested fertilizers improving the overall plant performance; higher yield and better quality.
- The use of the tested fertilizers and SAP in combination may compensate the smaller size of saffron corms allowing the production of enough yield and good quality from corms of 4-6g.

7. Critical notes and questions.

The dissertation work is very well developed in terms of structure and scientific value, and I have no critical remarks and questions.

8. Published articles and citations.

The dissertation is accompanied by three scientific publications related to the study. They are in scientific journals with an impact factor. Two of the publications are in print. The doctoral student is an independent author of one of the articles. Scientific interest in the subject of the dissertation is reflected in three citations of one of the publications.

The presented abstract reflects objectively the structure and content of the dissertation work.

CONCLUSION:

Based on the various research methods learned and applied by the doctoral student, the correctly performed experiments, the generalizations and conclusions made, I believe that the presented dissertation meets the requirements of the ZRASRB and the Rules of the University of Forestry for its application, which gives me grounds to evaluate it **POSITIVELY**.

I take the liberty of proposing to the honorable Scientific Jury to also vote positively and award Wissam Hassan Hourani the educational and scientific degree "**Doctor**" in the scientific specialty "Agrochemistry"

Date: 08.12.2022
Plovdiv

**PREPARED
THE POSTURE:**


(Prof. Svetla Kostadinova, PhD)