OPINION

on a dissertation work for obtaining the educational and scientific degree "**Doctor**" in: field of higher education 6. Agricultural sciences and veterinary medicine, professional field 6.1 Plant breeding, the scientific specialty Plant breeding.

Author of the dissertation: Svetlana Jordanova Manhart, part-time PhD student at the Department of "Plant Science" at the Agricultural University, Plovdiv.

Disertation topic: Varietal response of coriander (*Coriandrum sativum* L.) depending on the application of some foliar treatments.

Рецензент: Prof. Dr. Antoniya Stoyanova, Trakia University, Stara Zagora, area of higher education: 6. Agricultural sciences and veterinary medicine, professional field 6.1 Plant breeding, scientific specialty Land reclamation (including soil erosion and its control), appointed as a member of the scientific jury by order № РД-16-515/04.05.2023 by the Rector of AU.

1. Actuality of the problem.

Coriander (*Coriandrum sativum* L.) is a valuable essential oil crop, which is widely used in the food, pharmaceutical and cosmetic industries. In recent years, interest in essential oil and medicinal plants has been steadily increasing. Coriander is the most widespread representative of this group of cultures. It is characterized by a high content of essential oil, rich in linalool, camphor, geraniol, alpha-pinene, gamma-terpinene, limonene, geranyl acetate and others. ingredients.

Increasing the yield of seeds and the content of essential oil in seeds is the basis of the agrotechnical measures applied. The present dissertation presents the results of in-depth scientific and applied research on the impact of various foliar crop nutrition products, which argue for the relevance of the topic.

2. Aim, tasks, hypotheses and methods of research.

Based on the analysis of the previous research and the obtained results, a theoretical statement has been formulated about the influence of growth regulators, biostimulators and foliar fertilizers on the growth, development, productivity and quality of coriander seeds. The aim of the present dissertation work is to study the response of coriander cultivars depending on the applied foliar treatment products and to determine their influence on productivity, content and composition of essential oil in the seeds. In order to realize the goal, 4 main tasks have been formulated. All the indicators and analyzes applied in reporting the yields and quality of the individual varieties are presented in great detail. The analysis of the influence of the applied products was carried out by means of applied methodical solutions by means of mathematical models and statistical approaches. With the model of the one-factor variance analysis and Duncan's multi-rank test, the dependence of the individual chemical parameters in the different cultivars was investigated. Applying a two-factor variance analysis, the influence of the different preparations on the five varieties of coriander under

consideration was investigated. Other mathematical approaches, such as factor and correlation analysis, clustering, were also used in the research.

3. Transparency and presentation of the obtained results.

In the developed dissertation, the results of a Polish experiment conducted with 5 varieties of Coriander and 3 products for foliar treatment are described and analyzed in detail. A qualitative comparative analysis of the influence of foliar treatment products on biological and chemical indicators was carried out. The data obtained are presented in 36 figures and 37 tables, accompanied by detailed analyzes and comparisons with similar studies. The processing of the results was carried out with a software product for statistical processing, which is a package of programs - IBM SPSS 26.

4. Discussion of results and literature used.

When presenting the results, a logical sequence was observed in the exposition. At the beginning, the productive indicators are considered and discussed, and then the qualitative indicators and the chemical composition of the seeds are given. The results and the inferred dependencies are interpreted adequately in the discussion. The literature review is detailed and exhaustive, based on 238 publications, of which only 11 nos. in Cyrillic and 227 pcs. in Latin. The literature analysis was carried out with great precision, showing excellent knowledge of the state of the problem.

5. Contributions of the thesis.

The information obtained from the conducted researches has been analyzed and the relevant conclusions have been drawn on its basis. 14 more important conclusions are indicated. They reflect the large amount of scientific research work carried out in the development of the dissertation work.

One of the merits of a dissertation is the contributions formulated.

Scientific-theoretical contributions

5 original scientific-theoretical contributions are indicated, namely on the influence of foliar treatment products on the duration of flowering in coriander, as well as on the structural elements of the yield. Changes in the quality of the essential oil were found, and correlation dependences, with a high correlation coefficient, show the nature of the relationship between the qualitative and quantitative indicators.

Scientific and applied contributions

4 scientific and applied contributions have been formulated. These contributions are of practical relevance in the use of foliar products to treat coriander. Trends in the application of the investigated foliar treatment products were found.

6. Critical remarks and questions.

The presented dissertation is designed according to the requirements and is performed at a modern level. I have no critical remarks about the doctoral student.

I have recommendations related to the significance of the obtained results for practice. I recommend promoting the data in scientific publications, referenced and indexed in world-renowned databases, as well as in popular science publications that are more accessible to manufacturers.

7.Published articles and citations.

The publication activity related to the dissertation includes two articles published in scientific publications, referenced and indexed in world-famous databases with scientific information. The PhD student is the independent author of one article and leader of the second, which shows the significant contribution to the research. The publications meet the criteria for acquiring the ONS "Doctor".

No citation information provided.

The presented abstract is written on 39 pages and objectively reflects the structure and content of the thesis.

CONCLUSION:

Based on the various research methods learned and applied by the PhD student, the correctly performed experiments, the generalizations and conclusions made, I believe that the presented dissertation meets the requirements of the ŽARSRB and the Regulations of the Agrarian University for its application, which gives me grounds to evaluate it **POSITIVE**.

I take the liberty of proposing to the honorable Scientific Jury also to vote positive and to award Svetlana Jordanova Manhart the educational and scientific degree "**Doctor**" in the scientific specialty Plant Breeding, professional direction 6.1 Plant Breeding, field of higher education 6. Agricultural sciences and veterinary medicine.

Date:14.05.2023 г.
Stara Zagora

MADE BY
OPINION: Prof. Dr. Antoniya Stoyanova
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