

# OPINION



regarding the competition for a "doctor" in the scientific specialty "Reclamation" with candidate Nadia Stoyanova Hristova, a full-time doctoral student from the Agricultural University - Plovdiv.

**Author of the dissertation**

**Nadia Stoyanova Hristova**

full-time doctoral student at the Department of Land Reclamation, Land Management and Agrophysics at the Agrarian University - Plovdiv.

**Dissertation topic:**

**"Regulated irrigation mode"**

**Opinion: Prof. Dr. Nedko Kirilov Nedkov**

Institute of Rose and Essential Oil Crops

Kazanlak city.

## **1. Brief introduction of the candidate.**

Nadia Stoyanova Hristova was born on November 5, 1984. In 2007 graduated from Agrarian University - Plovdiv with very good success and obtained a bachelor's degree in "Agronomy - hydromelioration", professional qualification agronomist. In 2008 completed a master's course in the specialty "Viticulture and Winemaking" with very good success and obtained the Master's degree. In 2019 He acquired the "Reclamation" qualification and is a full-time doctoral student at the AU in Plovdiv.

## **2. Relevance of the problem.**

The presented development examines an important issue in the field of irrigation in the application of a regulated irrigation regime for lettuce variety "Winter butterhead" in Bulgaria.

The conducted research is being conducted for the first time in our country, which is a valid reason for this. The conducted experiments with a regulated irrigation regime

have a scientific and scientific-applied meaning, which complements the culture technology in the part of irrigation.

### **3. Degree of knowledge of the state of the problem and creative interpretation of the literature review.**

The doctoral student refers to 226 titles, of which 28 are in Cyrillic. Scientific works related to the topic are covered. The analyzed information is up-to-date, correctly interpreted in accordance with the tasks set. The literature review is purposeful. The doctoral student has expanded the scope of her theoretical knowledge and the scientific information she uses. From the material presented, it can be seen that she is familiar with what has been achieved so far on the subject. She analyzes, synthesizes and builds on the results of her experimental work

### **4. Tasks, hypotheses and research methods.**

Based on a competent analysis of the literary sources, the purpose of the development was formulated, as well as specific goals with clear tasks for the purpose. The dissertation work is aimed at the development of methods for effective planning and management of irrigation with a regulated irrigation regime of the salad "Winter head salad". Optimizing the irrigation regime in drip irrigation and micro-rain on productivity. Establishing the relationship "yield - irrigation rate" and "yield - evapotranspiration" and the reference evapotranspiration. The same applies to the average daily air temperature and the amount of air deficit. The biophysical coefficients are determined by decade values. The conducted research is based on a two-year experience (2020-2021). The effectiveness of irrigation was studied at three levels of reduction of the irrigation rate 100%, 80%, 60% and one non-irrigated control variant. Irrigation with a regulated irrigation regime was carried out according to the methodology. In view of the practical management of the regulated irrigation regime, a significant amount of information was collected during the experiment. The credibility of the conclusions regarding the biological efficiency of the conducted regulated irrigation regime is guaranteed by a significant volume of biometric data characterizing yield, growth, development and economic efficiency from an analysis of income and expenses by year and the entire period.

I believe that the methods and approaches used are scientifically sound, and the Polish experience has provided objective and reliable data to achieve the goal of the dissertation work.

### **5. Visualization and presentation of the obtained results.**

The dissertation is structured correctly and has a total volume of 142 pages. It is sufficiently well illustrated as there are 46 tables and 49 figures. The interpretation of the data and the information in the presented tables and graphs correspond completely. Taking into account the obtained results and their discussion, as well as the conclusions made at the end, it can be considered that the purpose of the dissertation

and the set tasks have been fulfilled. The dissertation work is presented in a form and volume corresponding to the requirements of PPZRASRB in AU.

#### **6. Discussion of results.**

The results of the research are presented in detail and graphically in tabular and graphic form. The comments on them provide additional insight and help to form and justify the conclusions of the study. The discussion of the results is thorough and detailed with the necessary knowledge regarding the biology of the crop, the soil and the planned management of the regulated irrigation regime. Modern methods of processing and analysis related to the scientific field of the dissertation are applied. The dissertation student shows that she has mastered the means and methods for processing experimental data at a very good level, knows the specificity of mathematical models and is able to analyze and summarize the obtained results.

#### **7. Contributions of the dissertation work.**

I accept the report on the contributions from the doctoral student. 6 contributions of scientific theoretical and applied nature are presented. I highly appreciate the contributions shedding light on the new results obtained from the application of a regulated irrigation regime.

#### **8. Evaluation of the degree of personal participation of the dissertation student in the contributions.**

The doctoral student presents a total of 3 co-authored articles, of which she is the first author. Published data are presented in a scientific community.

#### **9. Notes and recommendations: NONE**

#### **10. Conclusion.**

Based on the analysis of the candidate's scientific and scientific-applied activities, I believe that the submitted dissertation meets the requirements of the PPZRASRB and the Regulations of the Agricultural University and its application, which gives me reason to evaluate it POSITIVELY.

I take the liberty of proposing to the honorable Scientific Jury to also vote positively and award Nadya Stoyanova Hristova an educational and scientific degree "doctor" in the scientific specialty Land Reclamation.

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city of Kazanlak

/Prof. Dr. Nedko Nedkov/