STATEMENT

on dissertation work for obtaining the educational and scientific degree "doctor" in: field of higher education 6. Agrarian sciences and veterinary medicine, professional field: 6.16.1 Crop science, scientific specialty: Crop science

Author of the dissertation: **Rumyana Georgieva Georgieva** regular PhD student at the Department of Crop Science at the Agricultural University, Plovdiv.

Thesis topic: "Variety specificity of triticale (x *Triticosecale* Wittmack) when treated with plant stimulants under different soil nutrition regime".

Reviewer: Assoc. Prof. Dr. Vanya Atanasova Delibaltova, Agricultural University, Plovdiv. Crop Science Department, professional field: Crop science, scientific specialty: Crop science, appointed from the Rector of the Agricultural university as a member of the Scientific Jury with Order No. RD-16-1125 / 24.10.2019.

1. Relevance of the problem.

With modern technologies for cultivation of field crops, including triticale, the use of products that stimulate plant growth and development is becoming increasingly important. These compounds affect the plants by enhancing metabolism, activating the absorption of nutrients and promoting their redistribution in the organism. In this connection, the presented dissertation is not only relevant but also important for agriculture, because it gives an answer for the influence of plant stimulants on the productivity and quality of triticale varieties under different soil nutrition regime.

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

The purpose of the dissertation is clearly and precisely formulated and in order to achieve it four main tasks are indicated. In accordance with the stated purpose and tasks, three annual field experiments were conducted on the experimental base of the Crop Science Department at the Agricultural university of Plovdiv. Methodologically, the study is well-established. The examined factors and their levels are correctly indicated. In the study during the period 2016-2019 are included three triticale varieties, created in different breeding centers, two plant stimulants - applied twice, and two levels of soil nutrition. To achieve the purpose of the thesis a sufficient number of indicators have been selected and tracked. The working methods under field conditions, the agricultural technology of the field experiment, as well as the methods for statistical data processing are described in detail. It should be noted that the extent of the study carried out is quite large, conducted under field conditions and valuable from a practical and applied point of view. A detailed soil-climatic and agrometeorological analysis has been made of the area where the experiment was conducted, as well as of the years of the research.

3. Visualization and presentation of the results obtained.

The dissertation is written on 175 standard pages and includes 9 main sections, which in terms of volume, structure and balance between the separate parts fully meet the requirements for awarding the Doctoral degree. The results obtained are summarized and very well illustrated, by the skillful use of 53 tables and 9 figures, and show the ability of the PhD student to systematize scientific information.

4. Discussion of results and literature used.

On the topic has been made a detailed and immersed literature review, outlining the views of a number of our and foreign researches on the described problem. There have been used 248 scientific publications, indicating that the PhD student is well informed about the variety specificity of triticale, the culture's response to various abiotic and biotic growing conditions, as well as the impact of the soil nutrition regime on the yield and quality of triticale grain.

Discussion of the results has been done consistently, competently and thoroughly, by interpreting the results in accordance with the current scientific advances in these field. In the discussion the PhD student skillfully opposes, compares and comments the results obtained on the basis of other authors' data. The dissertation work shows that the PhD student can carry out an independent field experimental work and correctly interpret the large amount of data obtained, and the used statistical methods increase the precision when evaluating the results.

5. Contributions to the thesis.

The results obtained allow to form two groups of contributions::

Scientific contributions

There have been found a varietal differences in the phenological development of triticale, differences in the accumulation of absolutely dry mass, depending on the levels of fertilization and the treatment with plant stimulants under different meteorological conditions of the years in the region of Plovdiv. The duration of the interphase periods for each variety has been determined and the specific growth power has been defined, which is influenced by the conditions of the year, the applied soil nutrition regime and the treatment with plant stimulants. The strength of the correlation between quantitative and qualitative indicators of triticale varieties has been established.

Scientific applied contributions

There have been observed differences in the average grain yields of the tested varieties, depending on the levels of the examined factors, and it was confirmed that fertilization has the greatest impact on the yield, as under the influence of the better soil nutrition regime, the indicator increases. Second of importance is the factor variety, and the treatment with plant stimulants has the least impact on the yield. Better soil nutrition regime and treatment with plant stimulants have been found to have a positive effect on the structural elements of the crop but do not affect the physical performance of the grain. It has been confirmed that the amount of crude protein is most influenced by the factor fertilization, as the better soil nutrition proven

increase the protein content. The Trismart variety was found to have the lowest percentage of crude protein in the grain. Between the amount of crude protein and non-nitrogen extracted compounds there is determined an inverse relationship.

6. Published articles and citations.

Four publications directly related to the dissertation are attached, two of which are self-published and two are co-authored with the supervisor. The total number of points is 30 and meets the minimum scientometric requirements for obtaining the educational and scientific Doctor degree in accordance with the Law for the Development of the Academic Staff. No article citation has been submitted.

The presented self-report objectively reflects the structure and content of the dissertation.

CONCLUSION:

On the basis of the various research methods, learned and applied from the PhD student, the correctly performed experiments, the summaries and the conclusions made, I consider, that the submitted dissertation meets the requirements of the Law for the Development of the Academic Staff of Republic Bulgaria and the Regulations of the Agricultural University for its application, which gives me a reason to evaluate it POSITIVE.

Taking into account the extensive experimental material, the originality of the results achieved and the importance of the scientific and scientific applied contributions in the dissertation, as well as the undoubted personal contribution of the PhD student, I dare to suggest to the venerable Scientific Jury also to vote positively and award Rumyana Georgieva Georgieva Georgieva the educational and scientific degree Doctor in scientific specialty Crop Science.

Date: 12.11.2019
Plovdiv

MADE THE STATEMENT:.....

(Ass. Prof. Dr. Vanya Delibaltova)