



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: 6.1 Crop Science, scientific specialty: Crop Science.

Author of the dissertation: Yordan Rangelov Yordanov extramural PhD student at the Department of Crop Science at the Agricultural University, Plovdiv.

Thesis topic: " Investigation upon the main links of the technology of Triticum monococcum L., Triticum dicoccum Sch., Triticum spelta L. in the conditions of organic farming ".

Reviewer: Prof. Dr. Nurettin Tahsin Tahsin, Agricultural University, Plovdiv, 6.1 Crop Science, 04.01.14 Crop Science, appointed from the Rector of the Agricultural university as a member of the Scientific Jury with Order No. RD-16-149/28.02.2022

1. Relevance of the problem.

During last 10 years in Bulgaria there has been an increased interest in the cultivation of / wild / non-real wheat, in particular single-grained einkorn, two-grained einkorn and spelt wheat interest in these ancient varieties also has been renewed, due to demand of traditional products appropriate to growing in poor and disadvantageous regions, for keeping the genetic variety of field crops, and because of increasing the number of people who develop gluten allergies. Both conventional and organic production of these varieties is becoming increasingly important, from a scientific point of view. The presented dissertation is entirely relevant for science and agricultural production, because it provides an answer to the optimization of key elements of technology, in this regard - sowing and fertilization density - in the three ancient types of wheat - Triticum monococcum L., Triticum dicoccum Sch. and Triticum spelta L., under organic farming conditions.

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

The aim of the dissertation is clearly and precisely formulated, and seven main tasks are set for its achievement. In order to fulfill the set goal and tasks, a polish experiment was conducted during 2018-2021 in the Agroecological Center /Demonstration Center/ for organic farming at the Agricultural University - Plovdiv. A vascular experiment was conducted in a laboratory at the Agricultural University, to establish some trends. The study includes three ancient wheat varieties- Triticum monococcum L., Triticum dicoccum Sch. and Triticum spelta L. They are grown in organic farming. A sufficient number of indicators have been selected, and monitored to achieve the goal of the study. The methods of working in field conditions, the agricultural techniques of the field experience, as well as the methods for statistical data processing are described in detail. The scope of the study is quite large, conducted in field conditions, and very valuable from a practical and applied point of view, it should be noted. A detailed soil-climatic and agrometeorological analysis of the area of the experiment, as well as the years of research was made.

3. Visualization and presentation of the results obtained.

The dissertation is written on 171 standard pages, and includes 10 main sections, which in volume, structure and balance between the individual parts fully meet the requirements for

awarding the Doctoral degree. The obtained results are summarized and very well illustrated by skillful use and interpretation in 86 tables and 12 figures and show the ability of the PhD student to systematize the results of the experiment.

4. Discussion of results and literature used.

A detailed, and in-depth literature review was prepared on the topic, indicating the scientific results obtained by a sequence of Bulgarian and foreign researchers on the issue under consideration. 204 scientific publications were used, which shows the very good training of the PhD student in terms of some basic elements of technology - density of sowing and fertilizing - in the three ancient types of wheat - *Triticum monococcum* L., *Triticum dicoccum* Sch. and *Triticum spelta* L., both in conventional and organic farming. The consideration of the results of the experiment is done consistently, competently, and exhaustive, by interpreting the data in accordance with modern scientific advances in this area. The PhD student skillfully compares, contrasts and comments the results obtained into the dissertation, based on the data of other authors, in the discussion. The dissertation shows that the PhD student can conduct independent field experimental, work and correctly interpret the large amount of data obtained, and the statistical methods used for their processing increase the accuracy in evaluating the results.

5. Contributions to the thesis.

The following scientific and applied contributions have been made, based on the obtained results: For the first time in a complex multifactor study the influence of increased sowing rate and fertilization in local forms of the three ancient wheat varieties *Triticum dicoccum* Sch., *Triticum spelta* L. and *Triticum monococcum* L. ; The influence of the increasing sowing rate from 500 to 900 hp/m², in combination with two fertilizer products - soil fertilizer Italpolina and foliar fertilizer Naturamin, on the growth, development and formation of productivity of local forms single-grained einkorn, two-grained einkorn and spelled wheat in the conditions of the biological system of agriculture; Specific conclusions and recommendations for the individual varieties related to sowing rate and fertilization are made, based on their comparative evaluation in the experiment, analysis of variance and established correlations, as well as a set of physiological parameters showed that applied soil and foliar fertilization improves the photosynthetic activity of spelled, single-grained and two-grained einkorn plants; A comparative assessment of the physical, biochemical qualities and mineral composition of the grain (bare and chaff), in the conditions of the tested factors and the biological system of agriculture.

7. Published articles and citations.

Two publications directly related to the dissertation are attached, one of which is independent and one in co-authorship with the supervisors. The total number of points is 40 and meets the minimum scientometric requirements for obtaining the educational and scientific Doctor degree, according to the Law on the Development of Academic Staff in the Republic of Bulgaria. No document has been submitted to cite the articles. The presented self-report objectively reflects the structure and content of the dissertation.

CONCLUSION:

I would like to point out that the dissertation work proposed by the doctoral student Yordan Rangelov Yordanov in structure and content meets all the requirements for the educational and scientific Doctor degree, as a conclusion. In essence, it is a methodologically well-placed and complete scientific product that has made a great contribution to the

biological cultivation of the three ancient wheat varieties - *Triticum monococcum* L., *Triticum dicoccum* Sch. and *Triticum spelta* L.

Based on the presentation, I give a "POSITIVE" evaluation of the dissertation submitted for defense. This gives me a reason to vote "FOR" and propose to the members of the esteemed Scientific Jury to award Yordan Rangelov Yordanov the educational and scientific Doctor degree in scientific specialty "Crop Science".

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