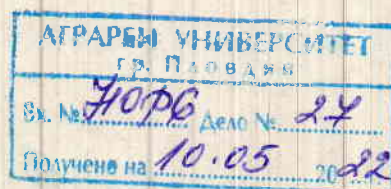


OPINION



On the thesis for obtaining the educational and scientific degree (ESD) Doctor in the field of higher education Agricultural Science and Veterinary Medicine 6.1, professional stream Plant Production, scientific speciality Plant Production.

Author of the thesis: part-time doctoral student in the Department of Plant Production of the Agricultural Faculty of the Agricultural University of Plovdiv – **Radko Petrov Hristov**; on the topic Effects of some foliar treatment products on the yield and quality of the grains in varieties of common wheat.

Author of the opinion: Associate Professor Doctor **Zhivko Vassilev Zhivkov**, University of Forestry, Sofia, scientific field Plant Production, scientific speciality Irrigation (including soil erosion and the fight against it) appointed as member of the scientific jury by Order No РД 16-263/14.03.2022 of the Rector of the Agricultural University of Plovdiv.

1. Relevance of the problem

The thesis is dedicated to the changes in the structural elements of the yield and its quality for 4 varieties of common wheat, following the use of foliar fertilisers enriched with microelements and foliar biostimulators. The study is relevant, because it describes the changes in the yield of a basic cereal crop, following the application of foliar fertilisers. The relevance is strengthened by the current international situation and the expected sharp decline in cereal production in Europe.

2. Goal and tasks

The goal of the thesis is to establish the effect of products for foliar treatment (Plantafol and Bombar dier) on the yield and the quality of grains for 4 varieties of common wheat (Enola, Anapurna, Ginra and Bilyana). To achieve the goal, 4 different tasks were fulfilled and the effect of the foliar products on the growth and development of the cereal crops. To meet the established goal, a three-year field experiment with 4 varieties of wheat was carried out. The methodology for the experiment is appropriate and this provides the possibility to give precise and correct answers to the identified

question. In the process of carrying out the experiment, the doctoral student followed and collected, processed and described in the thesis information on the effect for foliar treatment on the growth and development of the cereal crops, the structural elements of the yield, the productivity and the changes in the quality indicators of the yield. When recording the changes in the different indicators, the doctoral student makes a competent soil and meteorological description of the area for the 3 years of the experiment. Consequently, in the analysis of the collected data, he took into account the effect of the specific meteorological conditions. During the 3 years, the planned phenological and morphological observations were carried out. The structural elements and the size of the yields were established. The necessary physiological and biochemical were carried out. To establish the effect of the products for foliar nourishment on the productivity and the structural elements of the yield, the data was processed in accordance with the ANOVA method. The mathematical processing of the data was carried out with the programme SPSS-16. Dispersion analysis was used for a statistical assessment of the presence or lack of proven differences of the studied indicators. The Dunkan test was used to establish the differences for the variants.

3. Visualization and presentation of the obtained results.

The dissertation presented for review has a volume of 154 pages, including illustrated with 49 tables, 9 photos, 1 figure and 1 diagram. The thesis is well structured, contains all the necessary sections and meets the requirements for obtaining the educational and scientific degree (ESD) Doctor.

4. Discussion of the results and used literature.

The presentation and the analysis of the obtained results is correctly done and with the necessary competence. The obtained results give an answer to the objective set in the thesis. A considerable amount of data from the field experiment was collected and the doctoral student made considerable effort, which must be given a positive assessment. The work with such a high number of indicators, the high number of phenological and morphological observations, analyses and summaries of the obtained data lead to increased educational and scientific development of the student.

The obtained results are presented in a table, where one can clearly see the differences in the level of certainty. The presentation and the outline of the obtained results is done in a manner, which allows for a quick assessment of the effect of the foliar nourishment. The assessment of the results is done in a professional manner, which indicates that the doctoral student has acquired the experience of a researcher.

The annexed list of literature (79 works) and the comment on it indicate that the doctoral student can assess correctly and use the available information.

5. Contributions to the dissertation.

Based on the obtained results the doctoral student drafted 4 scientific and theoretical and 6 scientific applied contributions. I accept the contributions in the current form, even though they could have been summarised.

6. Critical remarks and questions.

I do not have substantial critical remarks regarding the material presented by the doctoral student for obtaining the educational and scientific degree Doctor. I am of the opinion that his future work should include economic assessment of the use and the effect of foliar nourishment.

7. Published articles and citations.

There are 7 publications related to the thesis. Only one is co-authored with the doctoral student's adviser, and he is the sole author for the rest. Two of the publications were in Agriculture Plus, three were in Journal of Mountain Agriculture on the Balkans and one is in Scientific Works of the Scientists' Union in Bulgaria, Plovdiv.

The summary made by the doctoral student gives an objective reflection of the structure and the content of the thesis.

CONCLUSION:

Based on the different analytical methods learned and applied by the doctoral student, the field experiment that was carried out correctly, the conclusions that were drawn, I believe that the thesis meets the requirements of the Law on the development of academic staff in the Republic of Bulgaria and the Rules of procedure of the Agricultural University for the Law's implementation, which allows me to give a POSITIVE assessment. I would like to suggest that the honourable scientific jury to give a POSITIVE vote as well and award the part-time doctoral student Radko Petrov Hristov, a DOCTORATE in the scientific speciality Plant Production.

20 April 2022
Sofia

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