



REVIEW

on a dissertation for obtaining the scientific degree "**Doctor of Agricultural Sciences**" in the area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.4. Earth Sciences, scientific specialty Ecology and ecosystem protection

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part-time doctoral student at the Department of Microiology and Ecological Biotechnology at the Agricultural University, Plovdiv.

PhD thesis title: Utilization of sludge from wastewater treatment plants by composting and vermicomposting

Reviewer: Gana Minkova Gecheva, PhD, Assoc. Prof., Plovdiv University „P. Hilendarski, area of higher education 4. Natural sciences, mathematics and informatics, professional field 4.3. Biological Sciences, scientific specialty Ecology and ecosystem protection, appointed a member of the scientific jury by order № ПД-16-1173/20.10.2021 from the Rector of AU.

1. Relevance of the problem.

Currently, WWTP sludge generated in Bulgaria is mainly landfilled or illegally disposed of, which highlights the need for approaches to their sustainable management, both to meet national and European regulatory requirements and to reduce the risk to the environment and human health. In this sense, the topic of the dissertation is relevant and practically oriented in a direction with high priority.

2. Purpose, tasks, hypotheses and research methods.

The set goal is clearly formulated and its achievement is based on 4 tasks, which are logically related to the topic and outline the structure of the study. The applied research methods are very well presented and substantiated. I would like to emphasize that due to the specifics of the topic, the study was conducted in coordination with a number of municipal and state structures, which in itself is a contribution.

3. Visualization and presentation of the obtained results.

The presentation of the material in the dissertation is clear and correct. There is appropriate statistical data processing, as well as very good illustrative and photographic material.

4. Discussion of the results and used literature.

The results and their discussion are logically structured in 7 subsections and are discussed at a very good scientific level. The competently presented results and conclusions show that the doctoral student has successfully coped with the stages of the research and the set tasks.

5. Contributions to the dissertation.

The contributions of the dissertation work of PhD student Angelova are both scientific and scientific-applied.

Scientific contributions

Four scientific contributions have been formulated in the field of utilization of WWTP sludge, which I accept in full.

Scientific and applied contributions

There are three formulated scientific and applied contributions. It should be emphasized that the joint activities on sludge recycling with Plovdiv Water and Sewerage and meeting the requirements set in the national legislation are significant progress in establishing a link between science and business, which can be expected to have a multiplier effect.

6. Critical remarks and questions.

Given the importance of the results, I would recommend looking for opportunities to publish in foreign scientific journals, as well as more active participation in international scientific forums.

7. Published articles and citations.

The publications of PhD student Angelova on the topic of the dissertation are a total of 4, of which two (one in Bulgarian) published in proceedings of national conferences, one chapter of a book and one article in a journal referenced in Scopus. She is the first author in three of them. No citations found.

The presented abstract objectively reflects the structure and content of the dissertation.

CONCLUSION:

Based on the learned and applied by the PhD student, different research methods, correctly performed experiments, summaries and conclusions, I believe that the presented dissertation meets the requirements of ZRASRB and the Rules of the Agricultural University for its application, which gives me reason to evaluate it POSITIVE.

I would like to suggest to the esteemed Scientific Jury to also vote positively and to award Desislava Gospodinova Angelova the scientific degree "Doctor of Agricultural Sciences" in the scientific specialty "Ecology and Ecosystem Protection".

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