



## Opinion

on a dissertation for obtaining the educational and scientific degree "Doctor" in: field of higher education: 6. Agricultural sciences and veterinary medicine, professional field: 6.2 Plant protection, scientific specialty "Phytopharmacy".

**Author of the dissertation:** Atanas Ivanov Ivanov, free time PhD student at the Department of Chemistry and Phytopharmacy, Agricultural University, Plovdiv

**Topic of the dissertation:** „INNOVATIVE METHODS FOR THE CONTROL OF ECONOMICALLY IMPORTANT PESTS OF WINTER OILSEED RAPE“

**Reviewer:** assoc. prof. Donyo Ganchev, PhD, Agricultural University – Plovdiv, field of higher education: 6. Agricultural sciences and veterinary medicine, professional field: 6.2 Plant protection, scientific specialty "Phytopharmacy", appointed as a member of the scientific jury by Order of the Rector of the Agricultural University RD-16459 from 01.04.2024

1. **Relevance of the problem:** Relevant
2. **Aims, tasks, hypothesis, research methods:** Standard
3. **Visualization and presentations of the obtained results:** Good
4. **Discussion of the results and used literature:** Good
5. **Contributions of the dissertation:**  
Significant
5. **Critical remarks and questions**

There is no information about the tested potassium soap as: is this registered plant protection product or was created for the purposes of the present study. If the second is true, there is no information about technology of making this soap and who made it. Soaps can be made by many different ways. In the research is mentioned that this soap is prepared on the base of aliphatic carboxylic

acids (fatty acids) C14- C20. However there is no other information about this acids: as names, molecular or structure formulas, CAS number, SMILES. Is unclear is this acids are in pure form or are part of some triglyceride oil. Field trials were conducted according to the standard for such kind investigations, methodic. However there is no information about assessments for phytotoxic effect (acute or chronic) of the tested soap despite the fact that such kind pesticides are well known for their ability to cause injuries of treated plants, and especially with their strong negative effect of pollen germination.

In the conclusions is mentioned that treatments of winter oilseed rape with tested potassium soap do not express negative effects on plants, however such kind of statement is too relative for field tests to be accepted for credible without concomitant in vitro and in silico tests due the butterfly effect.

There is no conducted trials for establishing the chemotherapeutic coefficient of tested soap towards winter oilseed rape which is very important for its introduction as plant protection product.

The soaps as plant protection products are well known also for their strong sensitiveness towards water hardness due to the fact that they are actually anionic surfactants . In the present research there is no information about hardness of the water used for preparation of the treated water solutions of tested soap and eventual physical changes of solutions if water with moderate or high hardness was used.

In the study missing information about physio-chemical properties of the tested potassium soap, and especially surface tension of its water solutions due to the fact that mode of action of the soaps towards pests and any other organisms is direct consequence of this property.

In the given research absolutely missing QSAR analyses and Dose – Response Models.

**7. Published articles and citations :2 publications**

**CONCLUSION:**

Based on the fact that the PhD student has learned and applied various research methods, performed experiments correctly and made relevant generalizations and conclusions, I believe that the presented dissertation meets the requirements of Law for the development of academic staff in the Republic of Bulgaria and the corresponding Regulations of Agricultural University, which gives me reason to evaluate it **POSITIVELY**.

I propose to the honorable Scientific Jury to also vote positively and to award Maria Valerieva Hristozova the educational and scientific degree "Doctor" in the professional field

**6.2 Plant protection**, scientific specialty " **Phytopharmacy** ".

Data: 15.05.24  
Plovdiv

Reviewer:   
(assoc. prof. Donyo Ganchev)