

## Public Lecture Evaluation

### Masaryk University

**Faculty**

Faculty of Science

**Procedure field**

Ecotoxicology

**Applicant****Doc. RNDr. Jakub Hofman, Ph.D.****Lecture date**

16.10.2018

**Lecture topic****Nanopesticides - the challenge for the research and regulation****Persons present**

(number)

67 on site + at minimum 3 online

**Designated evaluators**

(board members)

Prof. RNDr. Luděk Bláha, Ph.D.

Prof. RNDr. Ivan Holoubek, CSc.

Prof. Ing. Mgr. Jan Frouz, CSc.

The invitation to public lecture of Jakub Hofman has been announced using the electronic weekly newsletter Events of the Week to whole community of researchers at MU Campus Bohunice, and it was the part of the RECETOX seminar series. The lecture was organized in RCX1 classroom (A29/252). In total 67 researchers and students attended the lecture according to the presence list (attached as an annex to this review), including also the experts outside of MU - ÚKZÚZ, BFÚ AV ČR, Max Planck Institute for Chemistry - Germany, University of Vienna – Austria. The lecture was streamed and uploaded online, where it is fully available, including discussion, for the assessment (<https://www.youtube.com/watch?v=HPh0wbWcR4Q>). All members of the board evaluated the public lecture. The lecture lasted for 60 minutes plus additional 15 min discussion.

**The content of the lecture** addressed an important issue of pesticides and nanopesticides in the environment by critically discussing both pros and cons according to current state of the art. Jakub Hofman started the lecture with broader picture introducing his research activities addressing soil ecotoxicology. The lecture then discussed pesticides, their societal benefits and risks, described engineered nanoparticles as an emerging environmental problem, and then discussed the main topic - nanopesticides (review of current knowledge with regard to properties, fate and effects, knowledge gaps and future needs). Finally, the lecture presented examples of Hofman's research results on the differences in e-fate and bioaccumulation of selected pesticides (chlorpyrifos and terbuconazole) in soil when exposed in bulk or nano-formulations.

The lecture comprehensively covered all relevant issues demonstrating thus excellent understanding of the candidate to broad framework, main scientific questions as well as regulatory consequences. Hofman also demonstrated deep knowledge in particular discussed points such as methodological details and challenges in the assessment of nano-pesticide toxicokinetics and toxicodynamics.

**The form of presentation** and its duration were fully appropriate to broader expert audience. Lecture slides in PowerPoint were prepared with great care, they were graphically consistent and sufficiently readable. All figures as well as other materials used in the presentation (either from internet or other research papers) were properly cited and the full list of references was provided. For highlighting particular details during the talk, Hofman used modest animations that were graphically clear and stimulated attention of the participants. The lecture was presented in clear and well understandable English, the lecturer demonstrated very good rhetoric and teaching skills - even the novel and complex issues were clearly and understandably described in sufficient detail.

**During the discussion**, colleagues from the audience raised following questions that were immediately addressed by the applicant to full satisfaction (simplified transcript of the questions):

- Relationships and the roles of air spraying of pesticides/nanopesticides (NPs) and their small size to deposition?
- Is the use of NPs driven by real benefits or by the general “nano” trend and perception in the society?
- Comment (prof. Lammel): lessons from the past, when the new technologies have been introduced without proper prior-assessment. Current status and approach for NPs?
- How are the studies/risk assessments performed by companies (“idealized world”) realistic to real world situations?
- Why NPs are not (or are?) covered by the REACH legislation in Europe?
- What is the relationship between REACH and Plant Protection Product legislations?
- Can composition of NP carriers (such as polysaccharides) affect microbial communities in the soil?

## Conclusion

The lecture presented by **Jakub Hofman**, entitled “Nanopesticides - the challenge for the research and regulation” and delivered as a part of the professor appointment procedure, **demonstrated** sufficient scholarly qualifications and pedagogical capabilities expected of the applicant participating in a professor appointment procedure in the field of Ecotoxicology.



In Brno on 22<sup>nd</sup> October 2018

Luděk Bláha

Ivan Holoubek

Jan Frouz