



**Confidential**

### **Review of USB FFPW PhD Thesis**

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| <b>First name(s), surname, titles of the PhD student:</b><br>Buket Yazicioglu, M.Sc.                            | <b>First name(s), surname, titles of supervisor:</b><br>Prof. Dipl.-Ing. Pavel Kozák, Ph.D.                     |
| <b>Title of PhD thesis:</b><br>Some reproductive and physiological aspects of invasive crayfish                 |   |
| <b>REVIEWER:</b>  |   |
| <b>Surname: Kawai</b><br>Kawai  | <b>Institution:</b> Wakkanai Fisheries Research Institution   |
| <b>Name:</b> Tadashi  |   |
| <b>Titles:</b> Dr.  | <b>E-mail:</b> kawai-tadashi@hro.or.jp  |
| <b>Please describe your professional relationship to the PhD student:</b><br>Aquaculture of freshwater crayfish | <b>Please describe your field of expertise:</b><br>Conservation of freshwater organism, Taxonomy<br>Aquaculture |

### **QUESTIONNAIRE**

#### ***Originality, scientific importance, perspectives and impacts of results presented in the PhD thesis for basic and/or applied research***

Evaluate competitiveness of the PhD thesis in the international context and compare its level with the current state of the art in the field (**extent ¼ – ½ page**):

**Originality:**

The Buket Yazicioglu have total four original research articule with one review paper, those papers have good impact fact factor (more than 0.7). Paricularly, review paper have original idea for reproductive biology of freshwater. It make sure that the PhD thesis have originality.

**Scientific importance:**

The PhD provide several new information for reproductive biology of decapod crustacean, this contribute conservation and aquaculture and basic biology of freshwater crayfish. This PhD is important for those field of science.

**Perspectives and impacts of results:**

The PhD include enough originaliy and scintific importance, this contribute for development of biology and aquaculture of freshwater crayfish and bring high impact for this scientific fields.



### ***Elaboration of the PhD thesis, objectives of the work and deliverables***

Evaluate the overall level of elaboration of the PhD thesis (structuring of the main text, comprehensibility, logicity of the chapters and their ordering) and the originality of the selected approaches to solve the objectives; evaluate publications and whether the results described correspond to objectives of the PhD thesis (**extent ¼ – ½ page**):

1. Evaluate the overall level :

Excellent, the PhD have high level on academic.

1.1 Structuring of the main text:

Good balance, all chapters include originality and academic impact, and previous studies were reviewed fully in chapter 2.

1.2 Comprehensibility and Logicity of the chapters and ordering:

Excellent: Chapter 3 and Chapter 4 covered comprehensive reproductive biology using histology and new technique.

1.3 Originality of the selected approaches to solve the objectives:

1.4 Evaluate publications:

1.5 Corresponding between result of publication and objectives of the PhD thesis:

### **OVERALL COMMENTARY ON THE PhD THESIS**

**Please write comments in extent of 1-2 pages:**

This PhD thesis provides adequate novelty and new information for applied science of freshwater aquaculture, and also basic science for reproductive biology and freshwater biology. Buket Yazicioglu came from to Republic of Turkey and have integrated excellent experience of science in Czech Republic during 4 years. She attended 6 interational conferences, two oral presentations and 4 poster presentations, indeed I met her in 21st symposium of International Association of Astacology, in Madrid Spain in September 2016, in this time she spoke really fluent English based on her training and foreign stay in University of Zagreb, Croatia that total 3 months staying. Since contents of her poster presentation was good impressive for broad audiences, they have interest for her poster presentation. On this conferences, I head situation of her foreign staying from host person of her visiting, Dr. Associate Professor, Ivana Maguire, University of Zagreb. She said that Buket Yazicioglu are excellent PhD student and she learned some techniques in the field of molecule biology and conservation of native endangered freshwater crayfish species for alien crayfishes from North America. Buket Yazicioglu has total four peer-reviewed journal papers that have good Impact factor (more than 0.5 IF), she contribute as first author on three of four papers, those papers include great photos of tissue section of spermatophore or ovary, this contribute the development of histology and reproductive biology.

Across all her published papers, it is fact that does not involved innovative techniques and amazing finding such as to be submitted for Nature or Science. However, in chapter 1, Buket Yazicioglu provides review of different aspect of reproductive strategies in crayfishes and also this contents is published as review article in peer-reviewed journal with good impact factor.



Personally, I think this great work, since such as review article have written by senior scientists who have long career of science and rich knowledge. Even this is PhD thesis, she tried this difficult work and get the success. I believe this is really excellent challenge and should be received higher evaluation on academy.

In this PhD thesis, authors provide total 10 freshwater crayfish species, this from South America, Australia, western and eastern side of North America, Europe, this cover global distribution of the taxa, freshwater crayfish, so this PhD thesis contribute international science. Another, nowadays, alien north American species bring serious threaten for native ecosystem in European water body, particularly *Pacifastacus leniusculus* have provided devastation of native population for endanger freshwater crayfishes in Europe and another *Procambarus fallax f. virginialis* have serious potential threaten for European ecosystem. Two alien species have studied this thesis, her PhD thesis provide available information for conservation in Europe. In her PhD thesis, *Astacus leptodactylus* that distribute in eastern Europe and the species available for aquaculture species in Republic of Turkey. Buket Yazicioglu born in this country and her nationality is Turkey, so she will bring new information for aquaculture of *A. leptodactylus*.

Finally, I have to clearly state wonderful consults of Dr. Hamid Niksirat Hashjin who gave great contribution of science of freshwater crayfish based on his long experiment. And professor Pavel Kozak provides excellent supervision, since he have outstanding contribution of reproductive biology, freshwater aquaculture, biology of freshwater crayfish. It is fact that he is the best scientists in those international scientific fields. Indeed, Professor Kozak have huge number of peer-reviewed papers and he attend several numbers of scientific conference as scientific committee, all the international meeting that he attended did not success without his academic helping, so many scientists respect his active study and education. He educates many PhD students in worldwide, they actively study in Europe and out of Europe. It make sure that the PhD thesis of Buket Yazicioglu is one of best thesis among his supervised PhD students.



Fakulta rybnářství  
a ochrany vod  
Faculty of Fisheries  
and Protection  
of Waters

Jihočeská univerzita  
v Českých Budějovicích  
University of South Bohemia  
in České Budějovice  
Czech Republic

## FINAL RECOMMENDATION

PhD Thesis can be recommended for defence

10/06/2017

Date and place

10th June 2017

Tadashi Kawai

川井唯史

Name and signature

Tadashi Kawai 川井唯史



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**Review of USB FFPW PhD Thesis**

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| <b>First name(s), surname, titles of the PhD student:</b><br>M.Sc. Buket Yazicioglu   | <b>First name(s), surname, titles of supervisor:</b><br>Prof. Dipl.-Ing. Pavel Kozák, Ph.D.  |
| <b>Title of PhD thesis:</b><br>Some reproductive and physiological aspects of invasive crayfish   |  |
| <b>REVIEWER:</b>  |  |
| <b>Surname:</b><br>Maguire  | <b>Institution:</b><br>University of Zagreb, Faculty of Science, Department of Biology   |
| <b>Name:</b><br>Ivana   |  |
| <b>Titles:</b> Assoc. Prof., Ph.D.  | <b>E-mail:</b> <a href="mailto:ivana.maguire@biol.pmf.hr">ivana.maguire@biol.pmf.hr</a>  |
| <b>Please describe your professional relationship to the PhD student:</b><br>Mentoring during her 2 study stays on our department (molecular techniques, karyotypisation) | <b>Please describe your field of expertise:</b><br>Different aspect of crayfish biology, ecology, phylogenetic, ecotoxicology and immunity |

**QUESTIONNAIRE**

***Originality, scientific importance, perspectives and impacts of results presented in the PhD thesis for basic and/or applied research***

Evaluate competitiveness of the PhD thesis in the international context and compare its level with the current state of the art in the field (**extent ¼ – ½ page**):

After reading all of the parts of PhD thesis from M.Sc. Buket Yazicioglu entitled „Some reproductive and physiological aspects of invasive crayfish“ I can state that this is an original work of a high scientific quality. All of the issues studied are thoroughly thought through, the problems (aims) to be solved are clearly defined, the experimental work is well designed, the applied methods are novel, relevant and well chosen, the results are sound, and their interpretation and the discussion clearly shows that candidate has both excellent knowledge and understanding of the topic which she studied. Also, I think the obtained results will have application, and will impacted further studies of invasive crayfish species, a growing threat to the native crayfish biodiversity, not only in Europe, but world-wide as well.

### ***Elaboration of the PhD thesis, objectives of the work and deliverables***

Evaluate the overall level of elaboration of the PhD thesis (structuring of the main text, comprehensibility, logicity of the chapters and their ordering) and the originality of the selected approaches to solve the objectives; evaluate publications and whether the results described correspond to objectives of the PhD thesis (**extent ¼ – ½ page**):

The PhD thesis from M.Sc. Buket Yazicioglu entitled „Some reproductive and physiological aspects of invasive crayfish“ includes four publications (3 published in the peer reviewed journals – 1 review and 2 research paper; and 1 submitted to a peer-review journal). In all four papers candidate Yazicioglu is the first author, while she is also co-author in an additional publication. Thesis also comprises: General introduction to the topic that covers different aspects of reproductive and physiological aspects of crayfish; General discussion in which candidate shows she is competent and she shows knowledge and understanding of the topic, Conclusion that briefly covers the main findings of her research, References of literature used and Summary. The text and chapters are logically structured and easy to follow, the writing style is comprehensive and the PhD thesis objectives are solved. Chosen approaches in the problem solving are modern and original, while outcomes will be applicable in further invasive species / aquaculture studies.

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### ***OVERALL COMMENTARY ON THE PhD THESIS***

**Please write comments in extent of 1-2 pages:**

As I have already mentioned, the PhD thesis from M.Sc. Buket Yazicioglu entitled „Some reproductive and physiological aspects of invasive crayfish“ includes four publications (3 published in the peer reviewed journals – 1 review and 2 research paper; and 1 submitted to a peer-review journal), and in all of them candidate Yazicioglu is the first author. Thesis, apart from published papers, also includes Introduction that presents reasons for studying reproduction strategies in crayfish, their mode of reproduction, gamete biology and crayfish reproductive behaviour. From this part it can be seen that candidate is capable of recognising the problem/unstudied topics and she knows how to approach them and solve them. In the general discussion candidate shows she is competent and she shows knowledge and understanding of the topic, she is familiar with other studies within her field and capable of comparing her results against results of similar researches. The text and chapters are logically structured and easy to follow, the writing style is comprehensive and the PhD thesis objectives are solved. Chosen approaches in the problem solving are modern and original, while outcomes will be applicable in further invasive species / aquaculture studies. I especially liked her last paper that is under the review in which she tackled problematic of post-mating spermatophore storage strategies in a native and invasive crayfish species. Results obtained in this study are highly interesting and could, to some extent, explain invasive success of non-native crayfish species, and for sure will impact future management in aquaculture but also in conservation of native species.

At the end, I can state that this thesis is an original work of a high scientific quality. All of the issues studied in the thesis are reasoned, the objectives are clearly defined, the experimental work is well set up, the applied methods are novel, relevant and well chosen, the results are sound, and their

interpretation and the discussion clearly shows that candidate has both excellent knowledge and understanding of the topic which she studied. Also, I think the obtained results will have application, and will impacted further studies of invasive crayfish species, a growing threat to the native crayfish biodiversity, not only in Europe, but world-wide as well.

### **FINAL RECOMMENDATION**

To conclude, I unequivocally declare that Buket Yazicioglu's PhD thesis entitled „Some reproductive and physiological aspects of invasive crayfis“ is a valuable scientific contribution to the research of the reproduction and physiology of invasive crayfish species, **and that Buket Yazicioglu is suitable for award of PhD academic degree.**

- PhD Thesis can be recommended for defence**  
 **PhD Thesis can be recommended with reservations for defence**  
 **PhD Thesis can not be recommended for defence**

23.05.2017., Zagreb, Croatia

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Date and place

IVANA MAGUIRE

*I. Maguire*  
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Name and signature