

Confidential

Review of USB RIFCH PhD Thesis

Surname of the PhD student: Ing. Vojtěch Kašpar	Name of supervisor: prof. Ing. Otomar Linhart, DSc.
Title of PhD thesis: Sperm competition in common carp (<i>Cyprinus carpio</i>).	
REVIEWER:	
Surname: Pěkníková	Institution Institute of Biotechnology AS CR, v. v. i.
Name: Jana	Videnska 1083 142 20 Prague 4
Titles: doc., RNDr., CSc.	E-mail: jpeknic@img.cas.cz
Please describe your professional relationship to the PhD student: We do not make working contact.	Please describe your field of expertise: Reproductive biology, mammalian fertilization, role of selected sperm proteins in sperm/zona pellucida binding

QUESTIONNAIRE

Originality, scientific importance, prospects of the PhD thesis and benefits for basic or applied research

Evaluate its competitiveness in the international context and compare its level with the current state of the art in the field.

Sperm competition during the process of fertilization is an important part of the mechanism of sexual selection, which occurs in wide range of animals. The competition has effect on the reproductive behavior in many animals, including fish and also has an impact on offspring. In addition, the pooled sperm is used in hatchery practice; the goal of work is also directed to practical applications.

The aims of this thesis were:

- 1) To evaluate effect of equalization of sperm numbers in pooled sperm for practical reproduction in common carp.
- 2) To study sperm competition and its consequences in different conditions of *in vitro* fertilization.
- 3) To evaluate consequences of hatchery induced sperm competition in common carp using parameter of number of effective males N_{em} .

The results in PhD Thesis are important not only for theoretical understanding of sperm competition, but have significant implications on fish reproduction in fish farming.

The results are in the context of the global science and are essential for basic scientific knowledge and practice application.

Preparation of the PhD thesis, targets of the work and deliverables

Evaluate the overall level of preparation of the PhD thesis and the originality of the selected approaches; evaluate publications and whether the targets set in the PhD thesis correspond with the declared purpose of the thesis:

The PhD thesis is originally divided into five chapters. The first chapter is a review of literature for its own experimental section. In this chapter are part dealing with sperm competition, morphology, sperm motility and sperm competition, reproductive success determined by DNA fingerprinting, prediction of fertilization success, influence of ovarian fluid on sperm traits and others. The next three chapters are the objectives of PhD work and their results. The second chapter concerns the evaluation of effect of equalization of sperm numbers in pooled sperm for practical reproduction in common carp. The third chapter deals with the *in vitro* study of sperm competition in common carp. A case study of sperm competition in common carps with practical implication for hatchery procedures are part of the fourth chapter. In the last chapter (Chapter 5) is the General

Discussion, Czech and English summary, list of publication, plan of study and Curriculum vitae.

The aims of work are brightly defined, experiments attentively performed and results are precise documented in publications. The results are detailed discussed in the General Discussion. Each chapter is accompanied by a number of references.

OVERALL COMMENTARY ON THE PhD THESIS

The overall aim of present PhD thesis submitted by Vojtěch Kašpar, was sperm competition in common carp (*Cyprinus carpio*). Specific objectives evaluate effect of equalization of sperm number in pooled sperm, study sperm competition and its consequences in different condition of *in vitro* fertilization and evaluate consequences of hatchery induced sperm competition in common carp using parameter of number of effective males. Not be easily determined in the multifunction system such parameters which are crucial in sperm competition. The author selects suitable parameters and tools for this study.

My question relates to the recommendations in the summary of work.

1. Author recommends divide eggs into batches equal to the number of males and to fertilize them separately. Did you make such experiment?
2. With what result?
3. How do farmers learn about your results?

In the end, important comments. Vojtěch Kašpar is author or co-author of 11 publications, other one is submitted.

The PhD thesis exceeds the requirements for the submission of work for a PhD degree.

FINAL RECOMMENDATION

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

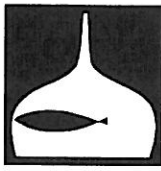
June 16. 2010, Prague

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Date and place



Pěkníková Jana

.....
surname and signature



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Confidential

Review of FFPW USB PhD Thesis

Surname of the PhD student: Ing. Vojtěch Kašpar	Name of supervisor: prof. Ing. Otomar Linhart. Dr Sc.
Title of PhD thesis: Sperm competition in common carp (<i>Cyprinus carpio</i>)	

REVIEWER:

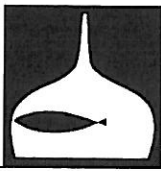
Surname: Cosson	Institution: CNRS France, Univ. of South Bohemia and Univ. of French Polynesia
Name: Jacky	
Titles: Professor and PhD.	E-mail: jacky.cosson@obs-vlfr.fr
Please describe your professional relationship to the PhD student: As visitor in the institute, we got many opportunities to collaborate for so many years	Please describe your field of expertise: Sperm motility

QUESTIONNAIRE

Preparation of the PhD thesis, targets of the work and deliverables

Ev The evaluation of potential competition between males at fertilization is an important field of investigation reg aluatTe the overall level of preparation of the PhD thesis and the originality of the selected approaches; evaluate publications and whether the targets set in the PhD thesis correspond with the declared purpose of the thesis:

OVERALL COMMENTARY ON THE PhD THESIS



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Please write comments:

Originality : The evaluation of potential competition between males at fertilization is an important field of investigation regarding possibility of predicting the progeny. The choice of the applicant to investigate these aspects in fish reproduction definitely represents an original approach, taking account their potent repercussions in aquaculture management, applied to carp aquaculture in this case, but useful as a model for studies in other species


Overall level / publications / adequation: the PhD thesis mostly relies on several publications which have peer review process and are of international level. The number of such publications (11) as well that of communications (8) at meetings testifies of the high level of the scientific production of the applicant. It appears that most of publications and communications are precisely dealing with the focus of the PhD as announced in its title.

Therefore, I warmly recommend that the PhD Thesis be defended by the applicant.

FINAL RECOMMENDATION

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

On 12th of June 2010-Nice France
Date and place

Cosson 
Surname and signature