



Confidential

Supervisor's Review of USB RIFCH PhD Thesis

Surname of the PhD student: Dadras Asyabar Hadiseh	Name of supervisor: Dzyuba Borys
Title of PhD thesis: Temperature dependency of sperm motility in different fish species	

OVERALL COMMENTARY ON THE PhD THESIS

Hadiseh Dadras Asyabar entered laboratory of reproductive physiology as a PhD student in 2014 after receiving of MSc diploma in Fisheries and two years activities as a teacher in Azad University of Lahijan, Iran.

She mastered successfully the skills required for the realization of here Ph.D. study such as video microscopy, biochemical methods to assess cell lipid composition and enzymatic activities involved in antioxidant defense. Application of these methods was required to study the temperature dependency of sperm motility. This topic is important because there are data about existing differences between fish taxa in terms of thermal dependency of spermatozoa motility, and studies in this direction will expand the knowledge in the field and allow to standardize sperm motility evaluation protocols, and potentially apply thermo-dependent sperm properties in fisheries practice. These aspects were described comprehensively in a review paper of Hadiseh published in Aquaculture research, which was used in introduction part of the thesis.

Other parts of the thesis consist in description of following aspects: 1) Sperm motility characteristics and antioxidant enzymes activity in relation to different in vitro temperatures in taxonomically distant fish species (common carp, rainbow trout and sterlet) possessing different natural spawning temperatures (Chapter 2), 2) Sperm lipid composition analyzed in motile and immotile carp spermatozoa at different in vitro temperatures (Chapter 3) and 3) The role of osmolality and calcium ions in sperm motility in burbot in relation to species specific phenomenon of sperm "thermo-activation" (Chapter 4).

Each of the chapters represents interesting results, and can be considered classic basic studies, which conclude that temperature may affect the sperm motility function, their antioxidant enzymatic activity and lipid peroxidation processes by species-specific manner, and moreover, these properties can be used in optimization of methods of in vitro fertilization in fish. Among others, I expect that these include improvement of sperm evaluation methods as well as application of proper



temperature during sperm storage and in vitro fertilization using fresh or cryopreserved sperm. Indeed, Hadiseh did the very initial explorative studies in this promising field, but I would like to stress that this is really a new area of studies for our laboratory and she did her best to make the work happen.

During PhD study Hadiseh was showing her interest in learning of different modern scientific technics at our Faculty and during her two foreign internships in Laboratory of Fish Physiology and Genomics INRA, France under supervision of Dr. Catherine Labbé (altogether 7 month). She also obtained good experience in scientific communication at 4 international conferences and during her activity in different scientific projects running in our Laboratory.

I also would mention that it was really comfortable to work with Hadiseh because of her friendly personality.

Finally, I recommend thesis of Hadiseh Dadras Asyabar for defense and looking forward for our future cooperation.

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

30.04.2018, Vodnany
Date and place

B. Dzyuba, 
surname and signature