

**Confidential**

**Supervisor's Review of USB RIFCH PhD Thesis**

Surname of the PhD student: M.Sc. Volodymyr Bondarenko	Name of supervisor: doc. Ing. Tomáš Polícar, Ph.D.
Title of PhD thesis: Reproduction and intensive juvenile culture in northern pike ( <i>Esox lucius</i> L.)	

**OVERALL COMMENTARY ON THE PhD THESIS**

Ph.D. thesis with the title "Reproduction and intensive juvenile culture in northern pike (*Esox lucius* L.)" written by M.Sc. Volodymyr Bondarenko presents very good review related to modern and effective methods of controlled reproduction and production of high-quality larvae in northern pike. This useable review in practice of fish farms, which can help increase diversification of marketable and valuable fish production within European aquaculture, is completed by new scientific data about improvement of hormonal induction of egg ovulation, more sophisticated evaluation of spermatozoa movement characteristics by new method (high speed video microscopy) compare to classical way (CASA method), optimization of artificial fertilization process, optimization of egg incubation under controlled conditions, distribution of hatching in the time and enhancement of high-quality of fresh larvae. It means that evaluated Ph.D. thesis has practical but also scientific significance related to basic biology knowledge and effective and stable fish production in northern pike.

Generally, the whole Ph.D. thesis includes 6 chapters in 113 pages. In total, one published handbook, one accepted scientific paper for publication in peer-reviewed journal with IF, and two submitted scientific manuscripts in peer-reviewed journal with IF are included and discussed in evaluated Ph.D. thesis. Mentioned handbook, paper and manuscripts describe in details following aspects of pike farming: 1) broodstock management, 2) controlled and induced female and male reproduction performance, 3) evaluation of sperm swimming characteristics by CASA and high speed video microscopy way, 4) egg incubation under different water temperature and 5) effect of water temperature on the quality of fresh larvae.

According my opinion, evaluated Ph.D. thesis brings new, original and interesting data and knowledge related to biology and culture of northern pike which can be used for future optimization of culture in northern pike within Europe. Presented handbook, paper and manuscripts indicate good scientific and practical skills of candidate.

At the end of my supervisor's report, I can note that Ph.D. thesis written by M.Sc. Volodymyr Bondarenko is interesting scientific and applied work and I recommend it for final defence.

### 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

30.4.2014 Vodňany  
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Date and place

Tomáš Křiváček  
.....  
surname and signature