



### **Review of USB FFPW PhD thesis**

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| <b>First name(s), surname, titles of the PhD student:</b> Mahyar Zare, M.Sc.                                                                     | <b>First name(s), surname, titles of supervisor:</b> Vlastimil Stejskal, doc. Ing. Ph.D. |
| <b>Title of PhD thesis:</b><br>Effects of herbal derived products on growth, digestibility, body composition, immune and stress response in fish |                                                                                          |

#### **REVIEWER:**

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|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Surname:</b> Hien                                                           | <b>Institution:</b><br>Chiang Mai University (Thailand)                                       |
| <b>Name:</b> Van Doan                                                          |                                                                                               |
| <b>Titles:</b> Assoc. Prof. Dr.                                                | <b>E-mail:</b> <a href="mailto:hien.d@cmu.ac.th">hien.d@cmu.ac.th</a>                         |
| <b>Please describe your professional relationship to the PhD student:</b> None | <b>Please describe your field of expertise:</b> Fish nutritional immunology and biotechnology |

### **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**):

Alternatives to antibiotics for sustainable aquaculture using medicinal plants are one of the hottest topics in aquaculture practice. This Ph.D. thesis work focused on using herbal derived products as alternative for antibiotics in fish, which is consistent work of high scientific importance especially in applied science. I appreciate practical approach, which open up and clarify available scattered information regarding herbal extracts on the rainbow trout and Eurasian perch. Undoubtedly the work shifts the knowledge in international context and has high relevance for sustainable aquaculture. All of that also corresponds to the originality of the work.

#### ***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**):

I am satisfied with the PhD thesis's overall impression. There aren't many grammar errors, and the content reads well. The main text is well-structured, and the chapters and their



sequencing make sense and are easily understandable. I found the selected approaches to solve the objectives as original. The results correspond to objectives of the PhD thesis. Selected publications and manuscripts are consistent with objectives.

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

Please write in the box specific comments concerning the PhD thesis in extent of 1-2 pages:

The PhD thesis begins with a well-written overview of the aquaculture industry's issues and the use of medicinal plants in aquaculture, which flows into the defining of the study's objectives. Six aims of the thesis are clearly defined, and they are connected to five consequent chapters. The chapter 2 is the review article in the IF journal Aquaculture Nutrition with the title: "Nettle (*Urtica dioica*) Additive as a Growth Promoter and Immune Stimulator in Fish" this article came through tough reviewing process and does not need to be further evaluated. The chapter 3 is an article in the IF journal Aquaculture Research titled: "Growth, body proximate composition and selected blood parameters of rainbow trout *Oncorhynchus mykiss* fingerlings fed on a diet supplemented with nettle *Urtica dioica* and tarragon *Artemisia dracunculus*". Also in this article the reviewing process was completed and I do not have further comments. The chapter 4 is a manuscript titled: "Effects of Garlic *Allium sativum* Powder on Nutrient Digestibility, Haematology, and Immune and Stress Responses in Eurasian Perch *Perca fluviatilis* Juveniles". There is no need for further evaluation because this article has undergone rigorous assessment. The chapter 5 provides general discussion, summary in English and Czech, acknowledgements, list of publications, training and supervision plan during study, and curriculum vitae, which is well written. The overall design of experiment and addressing to the problems defined in introduction are logically and right in order. The general discussion is clear and logical order. However, I advise authors to omit some outdated references (from more than 10 years ago) and add more recent ones. This would increase the thesis' readability and allow it to reflect the most recent developments in aquaculture research. additionally, limitation and future perspective of the study should be provided. Overall, I consider the present work with regard to international competitiveness of the start of the art within the top 20%.

### **FINAL RECOMMENDATION**

- ☒ PhD thesis can be recommended for defence  
☐ PhD thesis can be recommended for defence with reservations  
☐ PhD thesis cannot be recommended for defence



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

17 July 2023, Chiang Mai  
Date and place

  
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Name and signature