



Confidential

Supervisor's Review of USB RIFCH PhD Thesis

Surname of the PhD student: MSc. Nima Hematyar	Name of supervisor: doc. Jan Mráz, Ph.D.
Title of PhD thesis: Protein and lipid oxidation in fish: pathways, kinetics and products	

OVERALL COMMENTARY ON THE PhD THESIS

The thesis of Nima Hematyar is dealing with an important issue of fish postmortem changes caused by protein and lipid oxidation. On one hand, fish muscle has an excellent nutritional value and its consumption is highly promoted. However, for several reasons it is highly spoilable, and its quality deterioration is much faster than in other muscle foods. The topic of Nima's thesis is important for better understanding of changes and quality deterioration in chilled as well as frozen stored fish products caused by protein and lipid oxidation. That can open possibilities of optimisation of fish processing and storage to retain the high quality of fish products as much as possible. In addition, free radicals created during the lipid oxidation process are also increasing oxidative stress in human body and therefore it is important to keep oxidation process as low as possible.

Nima Hematyar well addressed these issues in his thesis and included papers. Paper 1 is a review article published in Aquaculture Research dealing with interactions of lipid and protein oxidation in fish and its consequences on quality parameters. Paper 2 published in Journal of Food Processing and Preservation is dealing with oxidation and quality changes of frozen common carp fillets. Two other manuscripts are focused on oxidation and postmortem changes in perch from two different rearing systems stored both in chilled as well as frozen storage. Beside the traditional quality parameters used in this field Nima has also used a proteomic approach to study changes caused by oxidation on the protein level.

The thesis is thus composed of 2 published articles in IF journals and two manuscripts in which Nima is a first author. In addition to these included papers Nima has coauthored 1 more published article and prepared 2 more manuscripts. In conclusion I strongly recommend his thesis for 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

ČESKÉ BUDĚJOVICE

Date and place

MRÁZ

surname and signature