Progress of Joint Research Activities

Research No.: ⑳ F-4 ODA Loan Joint Research		Date: 6 Nov 2019
1	General Title	**Quality improvement of fisheries/aquaculture products**
2	Core Members	CTU: **Le Thi Minh Thuy (Ms.)** (Project Leader),**Tran Minh Phu** (Project Secretary), **Nguyen Quoc Thinh, Nguyen Le Anh Dao, Ho Quoc Phong** (Contact's person) **Japanese Universities** : **Toshiaki OHSHIMA** (TUMSAT), **Masashi MAITA** (TUMSAT), **Kazufumi OSAKO** (TUMSAT), **Tomoaki HAGIWARA** (TUMSAT), **Shingo MATSUKAWA** (TUMSAT), **Yasuaki TAKAGI** (HOKKAIDO)
3	Duration	01/2018 to 12/2020 (3 years)
4	Main Objectives	i) To enhance quality and food safety management of fisheries and aquaculture products and ii) To develop the fisheries products processing technology for high quality and added value products.
5	Focal Points	**F4.1: Investigation the current status of food safety management system and development the strengthening program for improvement of quality and safety of seafood products** **Primary Outcomes:** - Around 300 households related to aquaculture was interview for chemicals and drugs use in the Mekong Delta - Pharmacokinetics of Florfenicol, Doxycycline have successfully performed in striped catfish. - Large scale and small scale aquatic processing companies have been investigated for harmful bacteria, Ex. Appearance of listeria in shrimp processing (fig.1)

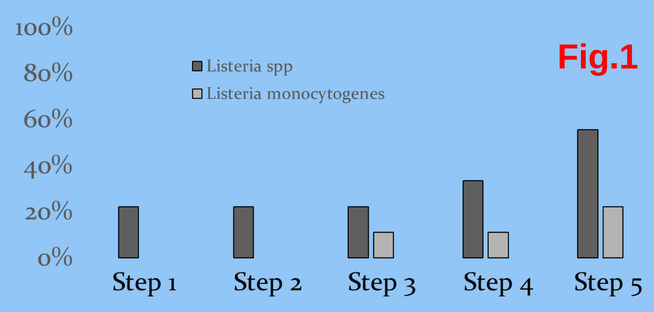

Fig.1

F4.2: Improvement of cold storage methodology for fisheries products

Primary Outcomes:

Cobia and snake head fillets treated with extract solution of asthma plant 0.06%, or guava leaf 0.03%, or green tea 0,06%, or *Phyllanthus amarus* 0.01% showed significantly higher sensory property compared to control treatment during storage. Guava leaf and green tea extract showed the antioxidant property, *Phyllanthus amarus* presented the antimicrobial activities.

F4.3: Biotechnology application in added value aquatic product processing

Primary Outcomes:

Collagen and gelatin have been successfully extracted from Tra Catfish, clown knifefish and tilapia skin. The manuscript has been finished and on the way to revise with Japanese professor before submitting.

For glucosamine, calcium powder and fish protein, we are conducting experiment and published 5 national manuscript.

F4.4: Development of bone regeneration materials from hydroxyapatite and natural polymer extracted from bone and skin of catfish

Primary Outcomes:

- Successful producing hydroxyapatite from catfish bone (**Fig. 2**)
- Successful extraction and study on formation of collagen fibril from swim bladder of catfish (*Pangasius hypophthalmus)* (**Fig. 3**)
- Collagen sample from swim bladder of catfish (**Fig. 4**)

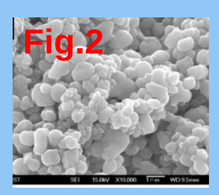
Fig.2

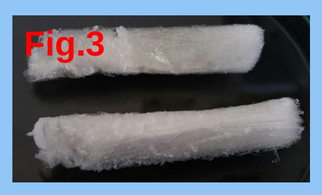
Fig.3

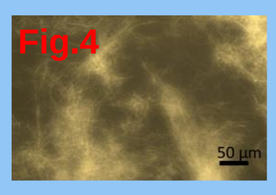

Fig.4

F4.5: Added value product processing from local fisheries raw materials in small-scale application

Primary Outcomes:

Dried butterfly tail on whiteleg shrimp (*Litopenaeus vannamei*) (**Fig. 5**)

The dried shredded tiger shrimp (*Penaeus monodon*) (**Fig. 6**)

The fish ball from striped catfish (*Pangasianodon hypophthalmus*) and knifefish (*Chitala ornata*) (**Fig. 7**)

The sponge cake containing minced striped catfish (*Pangasianodon hypophthalmus*) (**Fig. 8**)


Fig. 5


Fig. 6


Fig. 7


Fig. 8

General Outcomes:

- No of PhD students have been being trained: 03/03
- Number of Msc students graduated: 3/12
- Number of national and international conferences: 0/4
- Short trainings for local people: 0/4
- Number of international/total articles: 12/40 (1 published, 2 submitted).
- Number of national/total articles: 28/40 (6 published, 15 submitted)
- Number of books published: 0/4 (1 submitted)

6	Comments	This research is on going