

Norhed Report from PhD of Aquaculture component

(for website)

Project title: Effect of elevated temperature and feeding frequency on clownfish *Amphiprion ocellaris*

Project objective: To get an insight to the effect of global thermal rise on feed intake, appetite, growth, survival rate and welfare of the fish to determine their thermal tolerance

Specific objective: In this study, fish are cultured in different temperature and feeding frequency. Then, feed intake, oxygen consumption, growth and survival rate will be determined to understand how the metabolic rate, energy demand, growth, survivorship and the energy trade-off of the fish at early stages correspond to the thermal stress under limited availability of food.

In addition, the relation between feed intake and the changes of appetite controlled hormone (located in fish brain) **levels when fish are acclimated to different temperatures** will be studied. Results from this observation will be useful for understanding the consequences of global warming effect on coral reef fish welfare.

Contents:

- **Effect of elevated temperature and feeding frequency on growth, feed intake and appetite of *Amphiprion ocellaris* juvenile.**
- **The metabolic rate and appetite of *Amphiprion ocellaris* in response to different temperature exposed profiles at larval stage.**
- **Effect of different thermal regimes on growth performance, metabolic rate and appetite of *Amphiprion ocellaris* juveniles.**

Methods: Details for methods have already presented in the approved research proposal.

Time schedule: 2015-2018

Output:

- 01 Research proposal (done)
- 03 Annual report and final report (in progress)
- At least 01 paper will participate in the international conference (done)
- At least 01 paper will be published in national journal (in progress)
- At least 02 paper will be published in ISI journal (in progress)

Activities have been done

1. Experiments conducted in Nha Trang University then samples were transferred to University of Bergen for molecular analysis.
2. Finish all mandatory course works for PhD students
3. First manuscript is in progress.

Tentative Activities in 2018

1. Manuscript preparing for submitting to ISI journal
2. Experiment conducted in Nha Trang University.
3. Attending international symposiums.
4. Submit PhD thesis.

Pictures from project



Clownfish



Experimental system



Juvenile feeding



The feed weighing



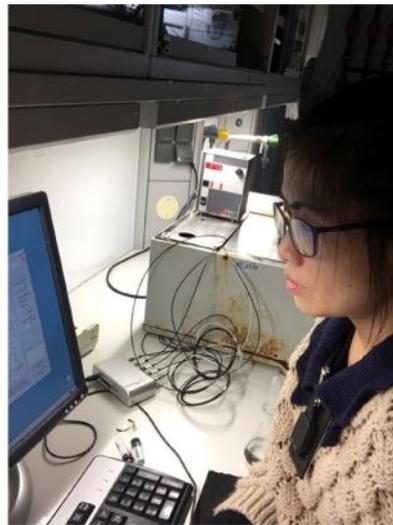
Sampling preparation



Sampling



Study in UiB library



Lab work in Bergen University (wet lab)



On Norwegian Constitution Day



International summer course on Fish physiology



International conference on Climate change in Hanoi

