

平成29年度 第2回 未来セミナー(特別編)のお知らせ

日時：6月12日(月) 16:10より

場所：環境科学部棟1階大会議室

本学熱帯医学・グローバルヘルス総合研究科とベトナム・カントー大学からお二人の講師をお招きし、ご講演いただきます。教職員・学生の皆様のご参加をお待ちしています。

アニサキスのL3幼虫では嫌氣的なミトコンドリア呼吸鎖が機能する

*稲岡 ダニエル健^{1,2} 北 潔^{1,2}

¹長大・熱帯医学・グローバルヘルス総合研究科 ²東大・医・生物医化学

私たちのグループは寄生虫とその宿主であるヒトのエネルギー代謝に焦点を絞り、寄生適応機構の解明を目的として研究を進めて来た。その結果、寄生虫の細胞内において多様な酵素系が機能し、生活環における環境の変化に巧妙に順応している事が判って来た。中でも寄生虫のエネルギー代謝系酵素群が極めて特殊な性質を持ち、宿主中での寄生適応に重要な役割を果たしている事を明らかにしつつある。通常エネルギー代謝には酸素が必要不可欠であるが、様々な寄生現象が成立する部位においては低酸素であるため、寄生虫では嫌氣的なエネルギー代謝が行われている。その過程で、私たちは寄生虫が有する嫌氣的ミトコンドリアで行われるフマル酸呼吸が重要である事を解明してきた。今回はこの様な観点から行った、アニサキスL3幼虫のミトコンドリア解析について報告する。

General aquaculture in the Mekong Delta, Viet nam: The effects of temperature and CO₂ on growth of *Pangasianodon hypophthalmus* and *Pangasius bocorti* Nursery of black tiger shrimp (*Penaeus monodon*) larvae in application of biofloc technology

*Do Thi Thanh Huong and Chau Tai Tao
College of Aquaculture and Fisheries, Can Tho University

Vietnamese aquaculture is among the top countries in the world. The sector has made a vital contribution to national economic development and nutrition security. The national aquaculture production reached 3.553 mil.tons and ranked as the third producer in the world in 2015. The export turnover of the year (2016) was US\$ 6.717bil. and contributed about 3.5% of national GDP. There are two most important species including marine shrimps (e.g. black tiger shrimp - *Penaeus monodon* and white-leg shrimp - *Penaeus vannamei*) and striped catfish (*Pangasianodon hypophthalmus*). In general, quality control and safety management system in aquaculture should be enhanced through diversified and synchronous methods.

The effects of temperature on air-breathing fish such as striped catfish (*Pangasianodon hypophthalmus*) was conducted. The fish were exposed to different temperature levels to observe the cardio-respiratory physiology including blood oxygen binding, ventilation, metabolic rate and growth rate. The second study on effect of CO₂ on hematological physiology and growth performance of basa catfish (*Pangasius bocourti*). The fish were exposed to 4 levels of CO₂ including control, 1%, 2% and 3% CO₂. The results showed that, under high CO₂ condition, weight gain, SRG and DWG of exposed fish were reduced. The mortality of fish also affected at high CO₂ concentration.

The study is aimed to investigate the appropriate C/N ratio for the best growth and survival of black tiger shrimp larvae and postlarvae. The experiment included four treatments of molasses supplement with different C/N ratios as (i) C/N = 10:1, (ii) C/N = 20:1, (iii) C/N = 30:1 and (iv) no molasses addition (control). After 25 days of rearing, Vibrio bacterial density in the treatment C/N = 20:1 and C/N = 30:1 was not harmful to the development of shrimps. The highest postlarvae 15 (PL-15) growth rate was found in treatment C/N = 30:1 and it was significant difference compared to other treatments (p<0.05). The highest PL-15 survival rate (49.73 ± 7.07%) and production (74.596 ± 10.608/m³) were found in treatment C/N = 30:1 and it was significant difference compared to remaining treatments (p<0.05). Thus, application with molasses ratio C/N = 30 in nursery water for black tiger shrimp is the best.

連絡先：岡田 (内2762 jokada@nagasaki-u.ac.jp)