ムシに対して栄養強化を仕様書通りに行う試験区（通常区: 0.25 g /L, 8時間）と過剰な条件で行う試験区（過剰区: 0.75 g /L, 24時間）を設定した。栄養強化を施したワムシの脂肪酸含量をガスクロマトグラフィー法で分析した。

【結果】通常区では一次培養の条件間で1.5～2倍の違いがあったが、過剰区では1～1.5倍の違いとなった。DHA/EPA比は、通常区ではどの一次培養条件でも2:1となっていた。一方、過剰区では3.5～4:1となった。以上から、栄養強化剤を指定された容量より過剰に用いてワムシを強化すると、強化剤量、強化時間の倍率ほど脂肪酸量は増えないが、栄養強化法を変えることにより強化後の脂肪酸組成を変化させることが出来ることが判明した。

Asian-Pacific Aquaculture 2007

Effect of primary cultivation method and population growth phase on nutritional enrichment of euryhaline rotifer *Brachionus plicatilis*

° Tomonari Kotani[1], Teruhisa Genka[1], Hiroshi Fushimi[1], Masahiro Hayashi[2], Kristof Dierckens[3] and Patrick Sorgeloos[3]

[1] Department of Marine Biotechnology, Faculty of Life Science and Biotechnology, Fukuyama University, 452-10 Innoshima-Ohama, Onomichi, Hiroshima 722-2101, Japan

[2] Department of Biological Production and Environmental Science, Faculty of Agriculture, University of Miyazaki, Gakuen-kibanadai-nishi-1-1, Miyazaki 889-2192, Japan

[3] Laboratory of Aquaculture & Artemia Reference Center, Faculty of Bioscience Engineering, Ghent University, Rozier 44, B-9000 Gent, Belgium

It is important to evaluate the effect of primary cultivation method of rotifer after the secondary cultivation as nutritional enrichment. So far, various methods of rotifer cultivation have been developed. Recently two methods are performed mainly, batch culture and continuous one. This study aimed to clarify the fatty acid contents after the secondary cultivation as nutritional enrichment in order to evaluate the quality of rotifer cultured with different methods.

Two primary rotifer cultures were performed with butch and continuous methods. From the batch culture, three experimental populations were used; they were from the culture one, 24 and 48 hour after inoculation of rotifer. The continuous culture was performed with two tanks; one was for just cultivation with continuous feeding and water supply (cultivation tank), and another was for stocking from cultivation tank by over flow (harvest tank). From the continuous culture, two experimental populations were used from the cultivation and harvest tanks. Secondary cultures were performed after each primary culture and each rotifer population was enriched nutritionally with *Nannochloropsis oculata* and commercial nutritional enrichment diet. Each population was applied to GC after secondary culture and their fatty acid contents were analyzed.

Although there was no significant difference of lipid quantity among primary rotifer cultures in both cases of secondary culture, total n-3 HUFA quantity from both continuous culture populations was higher than that from batch culture population 1 and 48 hour after inoculation. When the enrichment was performed with *N. oculata*, rotifer populations from two tanks of continuous culture and the batch culture tank 24 hour after inoculation contained higher quantity of ARA and EPA than those from two other tanks of batch culture. When the enrichment was performed with enrichment diet, populations from two tanks of continuous culture and the batch culture tank 24 hour after inoculation contained higher quantity of ARA, EPA and DHA than those from two other tanks of batch culture.

JSPS Core University Program between the University of Philippines, Visayas, Philippines and Faculty of Fisheries, Kagoshima University, Japan. Seminar on the management of inshore environment and utilization of fisheries resources.

The Commercially Important Seashells in Panay, Philippines

Liberato V. Laureta[1], Fernand Fagutao[1] and Hiroshi Fushimi[2]

[1] Institute of Aquaculture College of Fisheries and Ocean Sciences University of the Philippines in the Visayas Miag-ao, Iloilo 5023 Philippines

[2] Laboratory of Aquaculture and Stock Enhancement Department of Marine Biotechnology Fukuyama University Ohama, Innoshima, Hiroshima 722-2101 Japan

Many seashells abound in the coastal waters of Panay Island south of the Philippines. Most of these, whether in big quantity or not are sources of livelihood, since they are traded for money for human consumption, as materials for the button and shellcraft industries, as food for aquaculture species, and for keepsake or direct home ornaments.

In 2002-2004 survey of the coastal waters of the four provinces comprising the Panay, 137 shells were found to have commercial values. Of these, 85 were bivalves that belong to 25 Families, and 52 gastropods in 22 Families. There were 75 bivalves used for human consumption, three of these (oysters, *Crassostrea iredalei*, *C. gigas* and mussel *Perna viridis*) are cultured extensively in protected lagoons, while the rest are either gleaned or dived with or without compressor in shallow to deep waters. The angelwing *Pholas orientalis* and *Barnea manilensis*; yellow mangrove shell, *Polymesoda expansa*; tumid venus, *Gafrarium tumidum*;, nylon shells, *Paphia undulata*; meretrix venus, *Meretrix meretrix*; the ark shells, *Anadara inaequivalvis*, *A. granosa* and *A. antiquata*; pen shells, *Pinna bicolor*, and *Atrina vexillum*; scallops like *Amusium peluronectes*, *Chlamys senatoria* and *Annachlamys macassarensis*; spiny oysters like *Spondylus squamosus* and *S. aurantius*; the lucine clams like *Anodontia edentula*, *Eamesiella corrugata* and *Codakia tigerina* and many more are those typically dived or gleaned bivalved shells. For gastropods, 30 species are considered fit for human consumption. Exploited either through handpicking, gleaning or diving, the following species are popularly seen in the market or peddled in the community; the telescope snail, *Telescopium telescopium*; the abalone, *Haliotis asinina*, the murex shell, *Hexaplex cichoreum*; conchs like the *Strombus canarium*, *S. luhuanus*. *S. labiatus* and *Lambis lambis*, and many more.