

Joint International Symposium on Marine Science and Technology

between

**College of Fisheries Sciences, Pukyong National University and
Graduate School of Science and Technology, Nagasaki University**

25 October 2007

Pukyong National University

Organized by

College of Fisheries Sciences

Pukyong National University, Busan, Korea

Graduate School of Science and Technology

Nagasaki University, Nagasaki, Japan

Joint International Symposium on Marine Science and Technology
Organized by
College of Fisheries Sciences, Pukyong National University and
Graduate School of Science and Technology, Nagasaki University

25 October 2007
Pukyong National University

Poster Session

- P-1 Inverse scattering utilizing forward-backward time-stepping (FBTS) for reconstruction of 2-D dielectric object
Kismet Anak Hong Ping, Takashi Takenaka and Toshiyuki Tanaka
- P-2 Development of robot for automated asparagus harvesting
Naoki Irie and Takakazu Ishimatsu
- P-3 Development of powered glove using air actuators for disabled
Shinichi Kumano, Shunji Moromugi and Takakazu Ishimatsu
- P-4 A new approach of thermal power plant model for accuracy improvement using VVVF inverter
N. Matsui and F. Kurokawa
- P-5 Shear strength in steel fibre reinforced concrete beams without stirrups
Nyomboi Timothy, Hiroshi Matsuda, Shitote Stanley, Chihiro Morita
- P-6 Application of genetic algorithm to optimization of buckling restrained braces for seismic upgrading of existing structures
Fadi Farhat, Shozo Nakamura and Kazuo Takahashi
- P-7 Red tide detection using Satellite Ocean color data along Korean Southeast Sea
Gathot Winarso, Hyun-cheol Kim and Joji Ishizaka

- P-8 Response of phytoplankton light absorption spectra to the changing light environment in Ariake Bay
Tatsuya Shibata, Joji Ishizaka and Yoshihiro Suzuki
- P-9 Long-term variability of Chlorophyll a in Toyama Bay, Japan as observed by Ocean Color Satellite
Genki Terauchi and Ejoji Ishizaka
- P-10 Influence of re-suspended and accumulated sediments for the glycogen content in a pen shells *Atrina pectinata* Linnaeus (Bivalvia, Mollusca) in Ariake Bay, West Japan
Tatsuya Yurimoto and Kazumi Matsuoka
- P-11 Feeding, growth and survival of seven-band grouper larvae fed with two-minute rotifer *Proales similis* and SS-type *Brachionus plicatilis*
Stenly Wullur, Yoshitaka Sakakura and Atsushi Hagiwara
- P-12 Effects of changes in culture environment on growth and fecundity of the brackish water copepod *Diaphanosoma celebensis*
Mari Maeda, Yoshitaka Sakakura and Atsushi Hagiwara
- P-13 Purification and characterization of the gelatinolytic serine protease from the serum of red sea bream (*Pagrus major*)
Asami Yoshida, Kiyoshi Osatomi and Kenji Hara
- P-14 Quantitative detection of alginate oligosaccharide in *in vivo* system by HPLC and LC/MS/MS analysis
Toru Nishikawa, Takeshi Yokose, Yoshiko Yamamoto and Tatsuya Oda
- P-15 Effects of oral administration of alginate oligosaccharides on the GPT level in Hepatitis Mice Model
Takeshi Yokose, Toru Nishikawa and Tatsuya Oda
- P-16 Synthetic study on telomerase inhibitors dictyodendrins
Shotaro Hirao, Masatomo Iwao and Fumito Ishibashi

- P-17 Effects of 17-estradiol on gonadal development and spawning in mangrove killifish
Chang-Beom Park, Jun-Ya Aoki and Kiyoshi Soyano
- P-18 Measurement of High-Speed and High-Number-Density Droplets by Micro-Probe L2F with Mega-Hertz Data Acquisition
Hironobu Ueki, Daisaku Sakaguchi, Ishida Masahiro and Amida Oluwole
- P-19 Physical and morphological changes on polycarbonate based thermoplastic polyurethane coated polyamide 6 fibres
Baiju John and Mutsuhisa Furukawa
- P-20 A study concerning of the changes of the soundscape in Nagasaki city
Motohiro Kinoshita and Kazuichi Sugiyama
- P-21 Estimating the chemical component of Green Tea leaf using CCD camera
Jong-Hwan Kim, Buyngdug Jun and Kazuichi Sugiyama
- P-22 Pathological study on experimental hemorrhagic and hemolytic anemia in Nile tilapia, *Oreochromis niloticus*
Han Na Lee, Na Young Song, Mu Kun Lee and Min Do Huh
- P-23 Comparison of pathogenic mechanism to virulent and avirulent *Edwardsiella tarda* in olive flounder (*Paralichthys olivaceus*)
Su Jin Ha, Sung Ho Woo, Jun Hee Lee and Soo Il Park
- P-24 Characteristics of Aeromonads isolated from ornamental fishes in Korea
Sae Bom Sohn, Kyoung Mi Won and Soo Il Park
- P-25 Cloning and Characterization of Phospholipase D1 and Phospholipase D2 from olive flounder (*Paralichthys olivaceus*)
Moo-Sang Kim, Na Young Kim, Soo Jin Jeon, Sang Hwan Lee, Ju Eun Je, Ji Hea Sung, Sang Jung Ahn, Jung Soo Seo, Hyung Ho Lee and Joon Ki Chung
- P-26 Molecular cloning, expression and characterization of cathepsin F from olive flounder (*Paralichthys olivaceus*)

Sang Jung Ahn, Na Young Kim, Ju Eun Je, Ji Hea Sung, Moo-Sang Kim, Joon Ki Chung and Hyung Ho Lee

P-27 Quantification of the iridoviruses concentration in infected fish

Hye Jin Cho and Hyun Do Jeong

P-28 Molecular characterization of the *tet* genes carried in aquatic microorganism

So Hye Yoon and Hyun Do Jeong

P-29 Activity patterns of black seabream *Acanthopagrus schlegeli* using biotelemetry

Kyoungmi Kang, Hyeon-Ok Shin, Don-Hyeog Kang and Bo-Gyu Hwang

P-30 Rheological Properties of Gelatin Extracted from Yellowfin Tuna (*Thunnus albacares*) Skin

Seung-Mock Cho, Yeun-Sook Gu, and Seon-Bong Kim

P-31 Extraction of Pigment from Brown Seaweed by Supercritical Carbon Dioxide

Myong-Gyun Roh, Byung-Soo Chun

Feeding, growth and survival of seven-band grouper larvae fed with two-minute rotifer *Proales similis* and SS-type *Brachionus plicatilis*

Stenly Wullur, Yoshitaka Sakakura and Atsushi Hagiwara

Graduate School of Science and Technology, Nagasaki University

[Introduction] Mouth size of early life stage of seven-band grouper ranges between 180-220 μm and is quite small among fish larvae. At first feeding, when fed with the sizes of rotifer *Brachionus plicatilis* sp. complex, the larvae tend to select smaller sizes of the *Brachionus*. Since lorica sizes of the *Brachionus* are in the range of 90-340 μm , the effect of live food whose size is smaller than the *Brachionus* need to be examined. In this experiment, rotifer *Proales similis* (60-100 μm) was fed to the larvae and the effects on feeding, growth and survival were compared to those fed SS-type *B. plicatilis*.

[Method] Nine polycarbonate tanks in capacity of 100 liters were prepared following Ruttanapornvareesakul *et al.* (2007). At first feeding (4 DAH), 3 dietary treatments of *P. similis* at 20 ind./mL, SS-type at 20 ind./mL and mixed rotifers at 20 ind./mL (consisted of 10 ind./mL of each rotifer) were fed to the larvae of seven-band grouper for 10 days after hatching. Sampling was made on 4, 5, 6, 8 and 10 DAH by taking around 25 larvae from each tank for the analysis of feeding and growth. On 10 DAH, all surviving larvae were harvested and survival rate and dry weight were obtained.

[Results and Discussion] By dissecting gut content of the larvae that were sampled on 4 DAH, it was found that 100% of the larvae ingested both rotifer species. On the first three days of feeding however, the larvae in the dietary treatments containing *P. similis* showed a significantly high feeding amount compared to the larvae fed with SS-type alone. It is suggested that the smaller size of *P. similis* has facilitated the larvae to attain their high feeding amount. By comparing selection of the larvae to each rotifer species in the treatment of mixed rotifers, significantly high selection of *P. similis* was detected on 4 DAH although the selection was then shifted to SS-type on 6-10 DAH. This result demonstrated that the larvae of seven-band grouper prefer *P. similis* to SS-type on first days of feeding although the larvae have ability in ingesting both rotifer species. Of the three dietary treatments, seven-band grouper larvae showed significantly faster growth till 6 DAH when they were fed with mixed rotifers compared with those fed *P. similis* or SS-type alone. It is suggested that the higher feeding amount of the larvae in this treatment have influenced the faster growth of the larvae. The larvae in the treatment of mixed rotifers also showed higher survival as well as total yield (number of survived larvae X individual dry weight) at the end of the experiment.