# PROCEEDINGS OF JOINT INTERNATIONAL SYMPOSIUM ON MARIN SCIENCE AND TECHNOLOGY

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at College of Fishries Sciences,
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Joint International Symposium
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organized by
Pukyong National University-Korea
and
Nagasaki University-Japan

# JOINT INTERNATIONAL SYMPOSIUM ON MARINE SCIENCE AND TECHNOLOGY

**Organized by**
**Pukyong National University**
**and Nagasaki University**

## Poster Session

## Graduate School of Science and Technology, Nagasaki University

### Department of System Science

## Department of Marine Science and Technology

## Department of Material Science



## Department of Environmental Science



## College of Fisheries Sciences, Pukyong National University

## 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
Graduate School of Science and Technology, Nagasaki University

**[Introduction]** Mouth size of early life stage of seven-band grouper ranges between 180-220 *u*m 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.

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Judul Jurnal Ilmiah (Artikel) : Feeding growth and survival of seven-band grouper larvae fed with two-minute rotifer *Proales similis* and SS-type *Brachionus* rotundiformis

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**Dr.Ir. Joice R.T.S.L. Rimper, MSi**
**NIP. 196509051990102001**
Fakultas Perikanan dan Ilmu Kelautan
Universitas Sam Ratulangi Manado

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**HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW***
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**Reviewer II**

**Dr.Ir. Erly Y. Kaligis, M.Si**
**NIP. 19730907200031003**
Fakultas Perikanan dan Ilmu Kelautan
Universitas Sam Ratulangi Manado