Effects of dietary lipid level and source in fishmeal-based diet on growth and body composition of grower sunshine bass, *Morone chrysops* × *M. saxatilis* raised in seawater

Sung Hwoan Cho[a,*], Jong Ha Lee[b] and Sang Min Lee[c]

[a] Division of Ocean Science, College of Ocean Science and Technology, Korea Maritime University, Busan 606-791, Korea
[b] Uljin Marine Hatchery, National Fisheries Research & Development Institute, Kyungbook 767-860, Korea
[c] Marine Bioscience and Technology, Kangnung National University, Gangneung 210-702, Korea

Effects of dietary lipid level and source (squid liver oil being rich in n-3 HUFA, soybean oil being rich in 18:2n-6, and linseed oil being rich in 18:3n-3) in fishmeal-based diet on growth and body composition of grower sunshine bass raised in seawater were investigated. Fifteen grower (an initial weight of 146.8±0.23 g) sunshine bass were randomly distributed into 27 of 250 L fiber reinforced plastic flow-through tanks. Fish were hand-fed to satiety twice daily for 6 days a week throughout the feeding trial. Survival was over 97% and not significantly affected by either dietary lipid level or lipid source (n-3 highly unusaturated fatty acid, HUFA). Weight gain of fish tended to improve with dietary n-3 HUFA level up to 2.9%, but sharply decreased at 3.5%. The best weight gain was obtained in fish fed the diet supplemented with 6% squid liver oil and 3% soybean oil. FER and PER were not significantly affected by either dietary lipid level or dietary lipid source. The lowest moisture content of the whole body was observed in fish fed the diet supplemented with 12% squid liver oil and highest for the diet supplemented with 9% linseed oil, respectively. Protein content of fish was not significantly affected by either dietary lipid level or dietary lipid source. However, lipid content of the whole fish tended to

increase with an increase of either dietary lipid level or dietary n-3 HUFA level, except for fish fed the diet supplemented with 9% linseed oil. Ash content of fish fed the diet with no supplementation of oil was highest and lowest for the diet supplemented with 9% soybean oil, respectively. Significant differences in saturated fatty acids (16:0, 18:0 and 24:0), monoene (18:1n-9), 18:2n-6, 20:5n-3 and sum of n-3 HFUA of fish were observed. In considering these results, it could be concluded that supplementation of 9% oil combined with 6% squid liver oil and 3% soybean oil into fishmeal-based diet was the most recommendable for growth of grower sunshine bass raised in seawater.

*Corresponding author: chosunh@hhu.ac.kr