Effect of Protein Level and Energy-Protein Ratio on the Broodstock Growth Performance of Senggaringan Fish (*Mystus Nigriceps*)

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ABSTRACT

This research was conducted to evaluate the effect of protein level and energy protein ratio on the growth performance broodstock of Senggaringan fish (*Mystus nigriceps*). Three experimental diets and five replications were used in this experiment. Diet A containing 25% protein with energy-protein ratio 18.0 kcal/g protein (25%;18.0), B containing 30% protein with energy-protein ratio13.9 kcal/g protein (30%;13.9), C containing 35% protein with energy-protein ratio 12.0 kcal/g protein (35%;12.0). Fish was fed on experimental diets two times a day at libitum for 35 days. Based on body weigth biomass of the fish, A treatment has a growth from 43.06g to 44.25g, treatment B growth from 43.31g to 46.36g and C treatment growth from 47.40g to 47.70 g. The result found that diets B produced the highest growth performance.

Key words: senggaringan, protein level, protein-energy ratio, growth

INTRODUCTION

Senggaringan fish (*Mystus nigriceps*) represents important and potential fishery source to be developed in Purbalingga Regency. The case was proven by utilization for consumption by the society because it has delicious taste. Demand of Senggaringan fish tends to increase, however until now, the supply still depends on natural catch. Therefore, domestication technology needs to be developed to support it was continues production.

Success of domestication was highly determined by several aspects, one of it was nutrition (Slamet *et al*., 1999; Laining and Rachmansyah, 2002; Suwirya *et al*., 2002). To date the information about nutrients demand for senggaringan fish in every level is not available. One of aspect nutrition approach that can be carried out was by estimating protein requirement and energy protein ratio. The fish can be grown when fish consume diet. The growth only happens when energy requirement for maintaining live processes and other functions are fulfilled.

Several important information that can support general waters management and cultivation are continuously collected and studied by researchers, such as ecology and reproduction (Sulistyo and Setijanto, 2002), reproduction biology (Rukayah *et al*., 2003), morphoanatomy index of female senggari ngan fish (Sulistyo *et al*., 2007), diet and feeding behavior (Setyanto, 2007) and initial study of life cycle (Pramono and Marnani, 2006). However, research information about nutrients requirement of main parent candidate protein and energy-protein ratio is still very limited. The information is very important in determining success effort of future feeding management.

Protein is important nutrients in fish ration for somatic or gonadic development (Hammer *et al*., 2006; Rodriquez- Gonzalez *et al*., 2006) or feed cost (Thompson *et al*., 2005; Lee *et al*., 2006). Protein represents the most abundance nutrient in fish body, therefore protein diet should be utilized as efficient as possible for fish growth. In order to utilize feed protein efficient, by the protein must be compensated by non protein energy, such as fats and carbohydrates that have role as sparing effect of the protein (Shiau and Huang, 1990; Perez and Teles, 1999). Majority of protein should be utilized as growth, not being converted into energy (NRC, 1993). Requirement of protein and energy-protein ratio in senggaringan fish need to be studied to obtain information of optimum demand, because the requirement was highly influenced by fish species, age, fish size, diet protein quality, feed digestibility and environment conditions. Knowledge about optimum protein demand is one step that can be conducted to guarantee the success of domestication effort of senggaringan fish.