Domestication Strategy of Senggaringan Fish (*Mystus nigriceps*) to Combat Protein Deficiency as Food Security

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ABSTRACT

Food security is one of important issue in the world. It became important because of disparity growth between citizen (1.8%) and economics (2%). Based on the fact, the food preservations must be fullfil to prepare it, by optimizing the agricultural sectors. Agricultural sectors contains agriculture it self, animal production and fisheries. Fish is important in the diets and livelihoods of many people suffering from protein, vitamin and mineral deficiencies. Senggaringan (*Mystus nigriceps*) is one of important local fisheries resource which potential to develop. The effort in food security strategy in fisheries sector is by domestication program. This research was established to develop local fisheries resources trough domestication strategy. This experiment consist of two parts, the first used protein level A (25%;8,0), B (30%;12,0), and C (35%;13,9) to measure protein requirement of local fish and the second used fat level A (6%), B (8%), and C (10%) to show fat role as sparing effect in the diet. It was use Completely Randomize Design, with three treatments and five replications in aquaria for 60 days. The result showed protein treatments significantly improved senggaringan performance and level B gave the best of growth performance from 43.31g to 46.36g. The fat level treatments not significantly to the total growth, meanwhile for fat retention it gave ($P>0.05$), and the best fat retention showed in 6% of fat level. Fish consumption data on the species, nutrient analyses, awareness of the nutritional value of fish, as well as promotion of the production and accessibility of nutrient-density species can lead to the use of fish in food-based strategies to combat protein deficiency.

Key words: Senggaringan (Mystus nigriceps), food security, domestication, protein level, fat level, protein deficiency.

INTRODUCTION

In water and coastal areas with rich fish resources in developing countries, fish and fisheries play an important role in the diets, livelihoods, and income of many poor population groups who suffer from protein, vitamin and mineral deficiencies. It is well accepted that fish are a good source of animal protein; however, their role as a source of vitamins and minerals in developing countries is often overlooked. This study is focusing in senggaringan fish (*Mystus nigriceps*) as local fisheries resource in Klawing River Purbalingga which has high contribution in the diets of local people. It showed by higher demand of senggaringan fish is increasing year by year. Unfortunately it does not balance with the effort to culture this local fish, because the fisherman still depends on natural catching. Thus, the domestication method is necessary to observe as the assessment role of senggaringan fish in food-based strategies to combat protein deficiencies in Purbalingga locally and developing countries such as Indonesia globally. Domestication is an effort to make the fake condition in aquaculture closest to the natural habits or to move organism from natural habitat to the new one (Zairin, 2003). Some environmental qualifications should be fullfil before move natural organism in to aquaculture condition, such as its feed habits, salinity, and pH. There are several aspects which influence domestication process, one of the crucial aspects is nutrition, (Laining and Rachmansyah, 2002; Suwirya *et al*., 2002).

The lack of feeding habits information in senggaringan as rare local fisheries resource became an interesting aspect for us. Growth performances only happen if energy requirement to have life process and other function already fullfil. Protein is the main composition in fish feed ingredient, because it's more efficient to absorbed than energy source. Hence, the efficiency of protein use in feed to growth should