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Domestication of Marble Goby [*Oxyeleotris marmorata* (Bleeker, 1852)] Indogenous Fish of Citarum River, Indonesia

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Abstract

Research on domestication of Marble Goby [*Oxyeleotris marmorata* (Bleeker, 1852)] has been conducted from September 2014 until March 2015 at Research Station, Faculty of Fisheries and Marine Science, Padjadjaran University. The aim of the research is to find out optimum feed rate that produce highest growth. This research used experimental method, there are three treatments feeding living tilapia rates of 2 %, 3 % and 4 %, respectively. Observed parameters are growth rate and water quality. The results showed that the growth rate with feeding rate of 2 % to 4 % of Marble Goby increase 0.52 $g \cdot d^{-1}$ to 0.82 $g \cdot d^{-1}$ at the second month. However, at the third month, its growth rate tends to decrease to be 0.32 $g \cdot d^{-1}$ to 0.44 $g \cdot d^{-1}$. Feeding up to 4 % is not yet generating the optimum amount of feed to get fish growth maximum. The quality of water i.e temperature, pH and dissolve oxygen are still in optimum range. But the light penetration is below its optimum range.

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Keywords: Citarum river; domestication; growth rate; Marble Goby [*Oxyeleotris marmorata* (Bleeker, 1852)]

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1. Introduction

Marble Goby living in the Cirata Reservoir is Indogenous fish of Citarum River. The result of the communication with the local fishermen claimed that the presence of populations on Cirata Reservoir is already experiencing a downturn, nature catching businesses is difficult, yet the demand from the consumer is very high and the continuity of production depends on natural conditions. Further mentioned that the selling price in Cirata Reservoir differ depending on the level of the fishing types capture tool used at the moment of arrest and the size of the fish, the fish fishing rods or nets between IDR 60 000 and IDR 80 000 per kg of fish caught with fish traps priced between IDR 80 000 and IDR 110 000 per kg.

These fish have a great potential for cultivated because it has important economic value, its existence in nature is already difficult and mostly are wild catch product and very little amount that comes from cultivation, whether its fry or size of consumption. Factors to look for in fish farming in Marble Goby outside its habitat is the procurement of stem and frys as well as growth. Fish growth was slow, it need a necessary effort so that cultivated Marble Goby growth can be maximized by the selection of the type and quantity of the proper feeding. Darmawiyanti (2005), in Kordi and Ghufran (2013) stated that the feed is the factor that holds very important and decisive in the success of the efforts of fisheries, and the availability of feed is one of the main factors to produce the maximum production. Terms of a good feed that is has a high nutritional value, easily obtained, processed, easily digestible; the price is relatively cheap and does not contain toxins.

The preliminary result of the study, the primary Marble Goby feeding in Cirata Reservoir is fishes, crustacean, and Mollusca. Based on the results of the preliminary test, live fish, which feed naturally on research this is Nile Tilapia [*Oreochromis niloticus* (Linnaeus, 1758)], because it has a high tolerance to changes in the environment, due to its nature that often are at the bottom of the waters so easily captured by Marble Goby and has a high protein content, test result proksimat Tilapia used feed protein protein levels of 49.60 %. The aim of the research is to find out optimum feed rate that produce highest growth.

2. Material and methods

Research was conducted from September 2014 to March 2015. In September to November 2014 fish procurement and acclimatization of fish to be used in research, in December 2014 to March 2015 is the primary research. Research conducted in outdoor experimental pool of Fisheries and Marine Science Faculty of Padjadjaran University. Tools used: fiber tubs (60 × 60 × 100) cm, pond size (1.76 × 0.87 × 1.5) m, footbath, towel, sieve, box sterofoam, weights, DO meter, pH meter, thermometer, and Sechi disk. Ingredients: 20 g to 115 g Marble Goby, 0.3 g to 1.0 g Tilapia, and water hyacinth. Research using randomized design with three treatments and four replication, Treatment A: feeding quantity as much as 2 %, B: 3 % and C: 4 % of the biomass of Marble Goby. The parameters investigated are the growth of absolute weight was calculated by using the Effendi Ichsan (1997) formula as follows:

$$GR = Wt - Wo \quad (1)$$

G = Growth (g)
Wt = Average weight end (g) after time (t)
Wo = Average initial weight (g)

Daily growth according to Effendie (1997) :

$$GR = \frac{Wt - Wo}{t} \quad (2)$$

GR = Pace of growth ($g \cdot d^{-1}$) Wo = Average initial weight (g)
Wt = Average weight end (g) t = time (d)

The data were analyzed using the variant analysis (Anova) with a 5 % level, to find out the difference between all the treatments, followed by Least Significant Different (LSD) test. To know the influence of feeding against the