HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL INTERNASIONAL

Judul Karya Ilmiah : Domestication of Seluang (*Rasbora argyrotaenia*) from The Musi River Waters
Jumlah Penulis : 3 Orang
Dian Mutiara,Helmi Haris, and . Nasyiruddin AR
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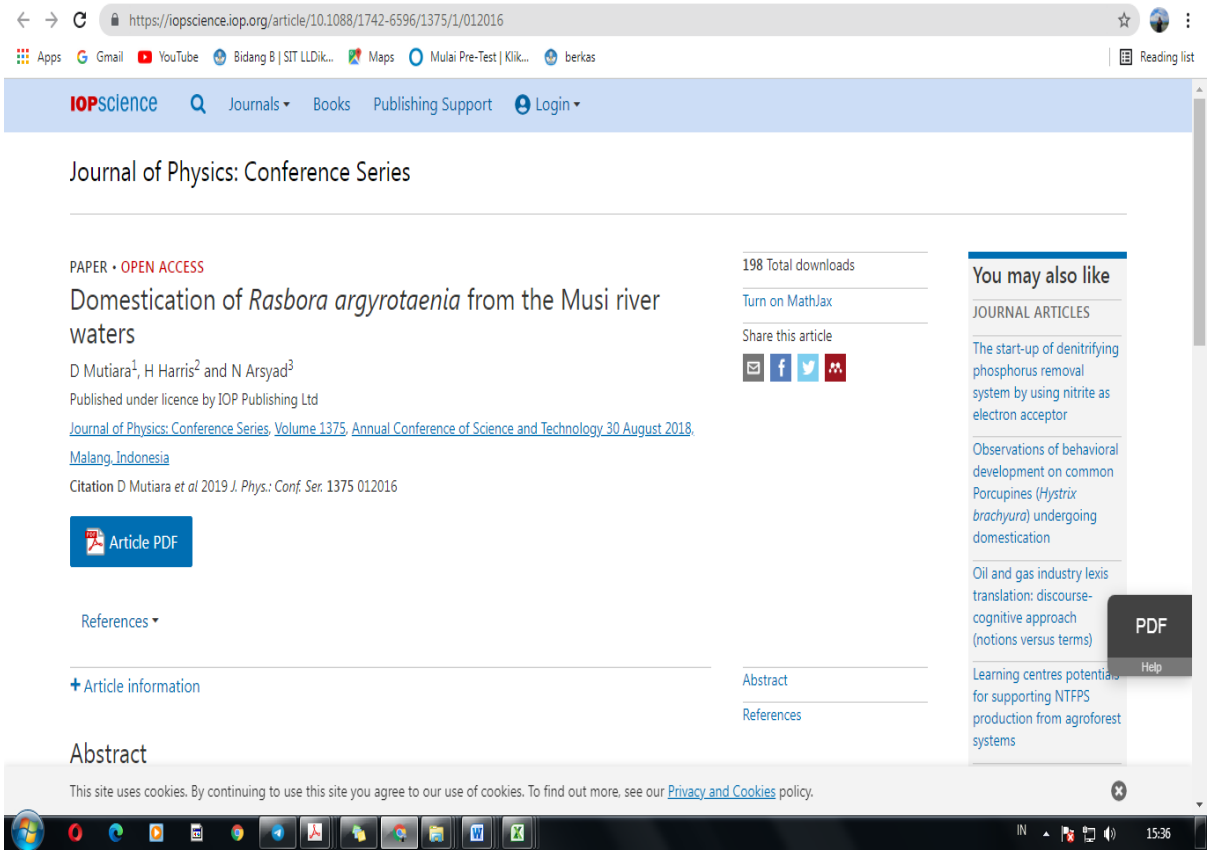
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D Mutiara[1], H Harris[2] and N Arsyad[3]
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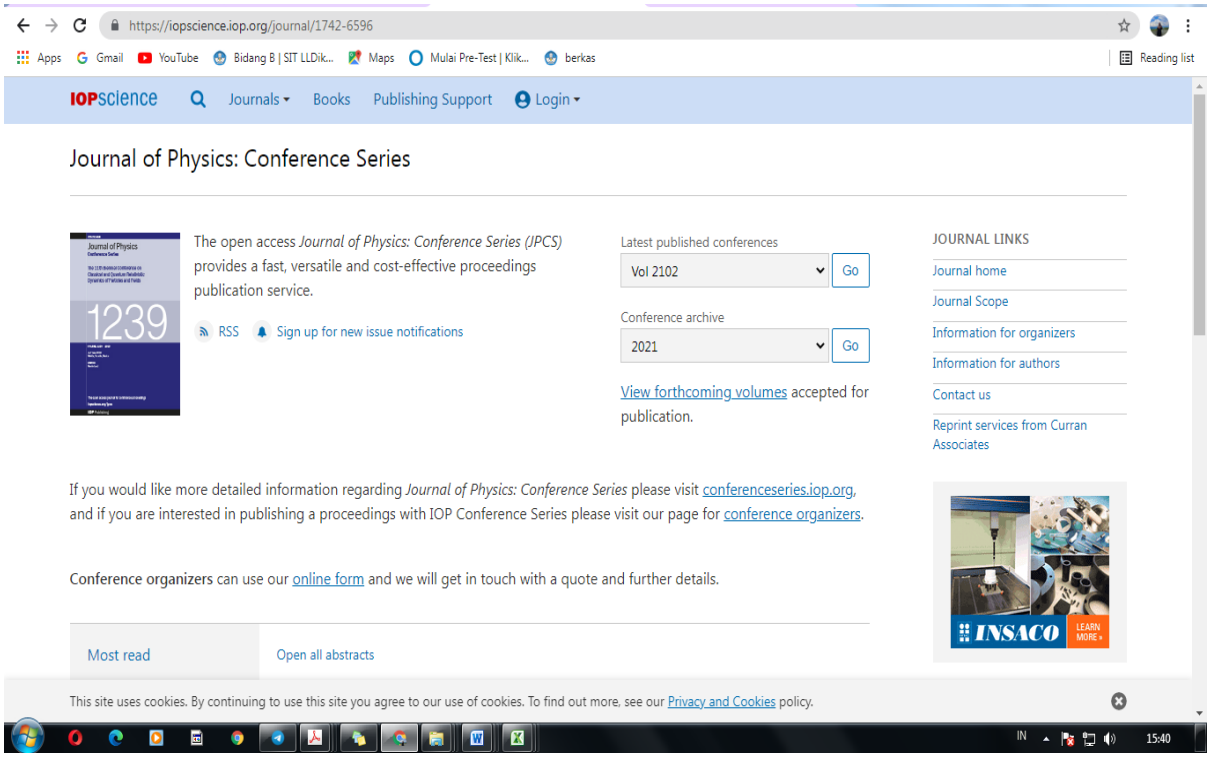
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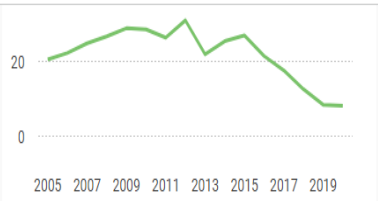

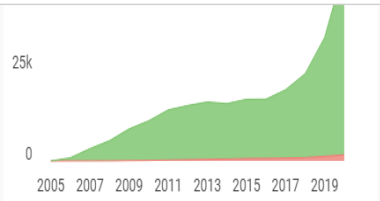

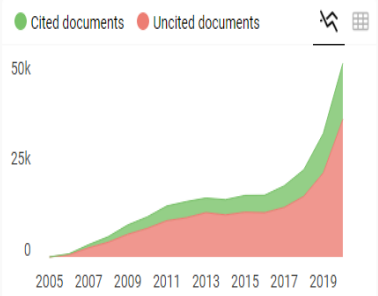

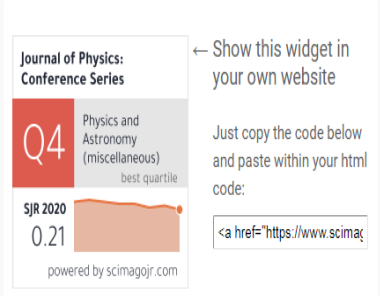

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Domestication of *Rasbora argyrotaenia* from the Musi river waters

Domestication of *Rasbora argyrotaenia* from the Musi river waters

D Mutiara[1,*], H Harris[2] and N Arsyad[3]

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Abstract. The domestication of Seluang fish (*Rasbora argyrotaenia*) has been carried out from the waters of the Musi river in the province of South Sumatra. The aim of determining the original domestication technique as a basic for further research on reproduction or spawning of Seluang fish in bulk and planned and restocking in public waters as an effort to preserve Seluang fish resources. The sampling location was used the Purposive Random Sampling method in 3 locations where there are usually many Seluang fish. Whereas the domestication method used the Experimental method with environmental manipulation treatment in cement tubs measuring 3 x 4 m deep 0.75 m. Fish are given natural and artificial feed for approximately 1 month (week 0 to week 4). The results showed that the domestication process of Seluang Fish (*Rasbora argyrotaenia*) can be done by maintenance in ponds that have been manipulated to resemble their natural habitat with artificial feed. The results showed an increase in weight of 0.0114 grams / day, an increase in length of 0.036 cm / day and survival of 79.01%.

1. Introduction

Seluang (*Rasbora argyrotaenia*) besides being used as a side dish for consumption, it is now also known as ornamental fish. As a consumption fish, Seluang Goreng and Pundang Seluang are very well known in South Sumatra which are usually served in restaurants. The way of life in nature that is clustered (schooled) and reactive, makes it easier to catch it with various tools such as nets, drifting nets, fishing rods, tangkul and others. Better prices have encouraged more intensive fishing (over fishing) from year to year. These actions are feared to damage existing resources. Seluang fish is not only found in the Musi river but also found in the waters around the river. Seluang fish are also found in swamps and creeks [1]. Research by Rosadi et al, *Rasbora argyrotaenia* on the Barito River in South Kalimantan during the dry season was also found in the main rivers, swamps and floodplains while in the dry season found in the main rivers and tributaries [2].

To overcome this several efforts can be made, namely, among others: Code of responsible fisheries action (Code of Conduct for Responsible Fisheries), Restocking (stocking of seeds and juana fish in natural habitats) and domestication (cultivation of fish in public waters). In line with this, FAO has established a Code of Contact Responsible Fisheries, to realize the sustainability of fish resources in a sustainable manner [3].

The potential of fish that has economic value in the future while catching in nature feels increasingly difficult. An important factor is the more difficult to get Seluang fish including the contamination of

waters as fish habitat. Efforts must be made to cultivate Seluang fish intensively. The most important factor is how to domesticate seluang fish from wild habitats into artificial habitats.

With the stipulation of Seluang fish as a superior commodity in the Fisheries Faculty of the University of Palembang PGRI, the study was directed to explore Seluang fish research. To overcome the problem of over fishing in realizing resource sustainability. The research objective was to determine Seluang's domestication technique from the waters of the Musi River as a basis for further research on Seluang's reproduction in bulk and planned.

2. Method

The research was conducted from July to September 2017. The Fish Hatchery Workshop (WSPI), the University of Palembang PGRI and in the Public Waters of the Musi River Children Palembang. Materials and equipment: Seluang brood taken directly from the Musi River, silk worms, pellets. Echornia crassipes and Azolla pinata, detergent, cement tub 3 m x 4 m depth 0.75 m. pH meter, thermometer, digital balance, microscope.

Fish were taken from 3 locations by Purpussive Sampling (figure 1) on the Musi River in the Kenten Village of Talang Kelapa Sea, the Son of the Musi River Kerto Gandus and the Flow of the Musi River Children in the Banyuasin Nameless Village. Domestication using the Experimental method with environmental manipulation treatment as well as natural and artificial feeding for approximately 1 month (Week 0 to week 4) [4]. regulating water temperature, regulating water level, giving water plants, aeration to make current and add oxygen. Deuteronomy was carried out 3 times and processed descriptively according to Steel and Torrie [5].

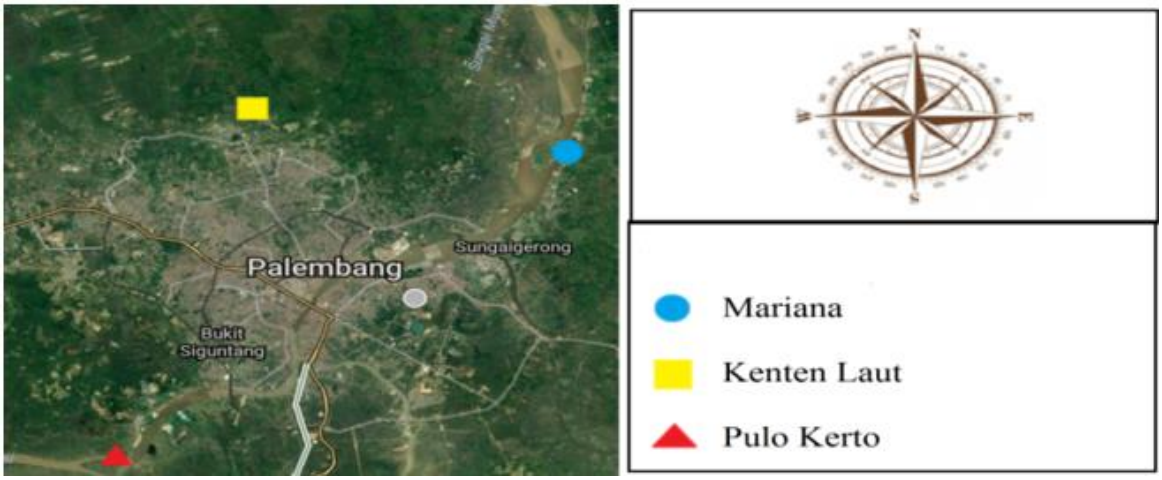

Figure 1. Location of sampling of prospective Seluang sires in the Musi river stream.

The parameters observed were weight gain, length and survival according to Effendi [6]. Weight gain is done every 1 week (1979), namely

Wm = Wt - Wo, where Wm = Average weight gain (gr), Wt = Final weight (gr), Wo = Initial weight (gr). Observation of length increments using the formula Pm = Pt - Po, where Pm = fish length increase (cm), Pt = fish end length (cm), Po = fish initial length (cm). Survival (SR) with the formula:

$$SR = \frac{Nt}{No} \text{ x } 100\% \quad (1)$$

SR = Survival (%), Nt = Number of live fish at the end of maintenance (tail), No = Number of fish stocked at the beginning of maintenance (tail)

3. Results and discussion

From the field survey conducted, it was found that the depth of the Musi River Children in Kenten Laut Village ranged from 1.5 meters - 5.5 m, with a temperature range of 26-290C and a standard air temperature of ± 3oC, dissolved oxygen (DO) ranging from 6.4 to 7.1 mg / l, while pH ranges from 7.8-

8.1 and Ammonia ranges from 0.12-0.17 mg / l. At the location of the Musi River in Pulokerto Village, the swamp depth range is 2.3-6.5 m, the temperature ranges from 26-28oC, dissolved oxygen (DO) ranges from 6.7 to 7.2 mg / l, pH ranges from 7.9 to 8.1, and ammonia around 0.11-0.16. Musi River Children in Nameless Village into 2- 7.5 m, with temperatures ranging from 25-27oC, dissolved oxygen (DO) ranging from 6.5-7.3 mg / l, pH ranges from 7.9 to 8.3, and Ammonia ranges 0.09-0.16 mg / l. Based on the observations of each location different results were obtained, but the condition of the waters in each location still supported the growth of Seluang fish.

The study of several studies reported that the chemical characteristics of the waters of the Seluang fish habitat in the main body and tributaries are as follows: pH value 5.5 - 7.0, Dissolved oxygen 3,6 - 7,2 mg / L, and total alkalinity 20 - 50 mg CaCO3 / L [7]. Whereas in the flood swamp waters with the following ranges: pH value 5.0 - 6.5, Dissolved oxygen 2.4 - 4.8 mg / L, Total alkalinity 9.4 - 25 mg CaCO3 / L, Hardness 6.3 - 16.3 mg CaCO3 / L, and Sulphate (SO4) 0.51 - 4.03 mg / L [7,8]. While nutrients such as Ammonia nitrogen (NH3-N) 0.2 - 0.31 mg / L, Nitrite (NO2-N) 0.1 - 0.14 mg / L, Nitrate (NO3-N) 0.16 - 0, 21 mg / L, and Orthophosphate 0.04 - 0.07 mg / L [8].

Seluang Batang fish have 2 habitat variants (Variants A and B), namely, namely flowing and inundated types [9]. In habitats flowing like the Seluang river live with the speed of the upstream, middle and downstream currents in the range of 4.4 - 16.7 m / sec, 0.2 - 1.1 m / sec, and 0 - 1.0 m / second. However, the preferred current velocity is in the range 0.2 - 1.1 m / sec.

Seluang fish found elongated body shape, shiny silver color, length between 9-12 cm and the number per 100 grams 137 tails [10,11]. According to Dina et al. [12], the length of Seluang or if on Maninjau Lake is known as Lauak Bada ranges from 8-13 cm, but based on the results of domestication the size can reach 15-17 cm [13]. In general, Seluang is elongated in shape, the dorsal fin is composed of 7 or 8 branched fingers [9]. The anal fin is short and consists of 5 branched fingers. The lateral line is unbroken and extends from the back of the gill cover to the base of the tail fin. Fish do not have small mouth and mouth, shiny silver or yellowish, flat body shape, thin scales and have a clear pair of eyes.

Catching on location using tangkul from the three fishing grounds, obtained broods as many as 207 tails. Temporary brooders are accommodated in waring before being taken to a shelter in the Workshop Transportation techniques that are used in a closed way using oxygenated plastic, and transportation is done in the afternoon, to reduce stress [14].

Environmental engineering in cement tanks with conditions close to the original environment in nature is equipped with Eichornia crasipes and Azolla pinata aquatic plants and aerators. The feed adjustment process lasts for 1 month. In the early stages of artificial feeding the results have not been satisfactory, but over time Seluang Fish also began to get used to consuming artificial feed.

Based on observations during maintenance which include: Growth (weight and length) and Survival (Survival Rate), can be seen from the following data:

3.1. Weight gain

The increase in average weight of fish during the observation can be seen in Figure 2.

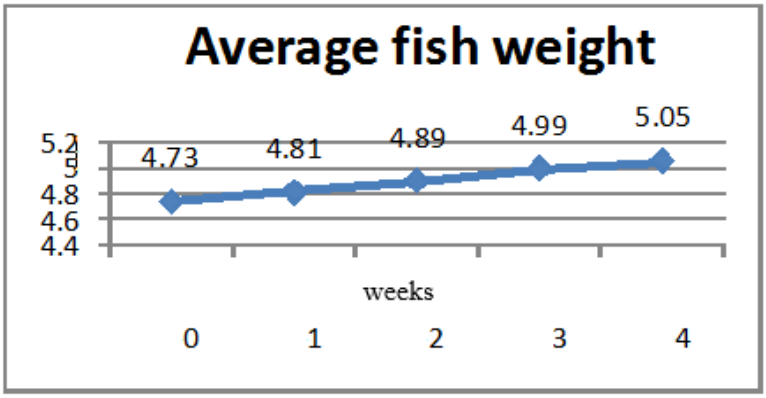

Figure 2. Weight gain of Seluang fish during observation.

From the picture, it can be seen that there is an increase in the weight gain of Seluang fish from week to week, with a daily weight gain rate of 0.0114 gr / day.

3.2. Added length

The increase in the average length of the fish during the observation can be seen in Figure 3.

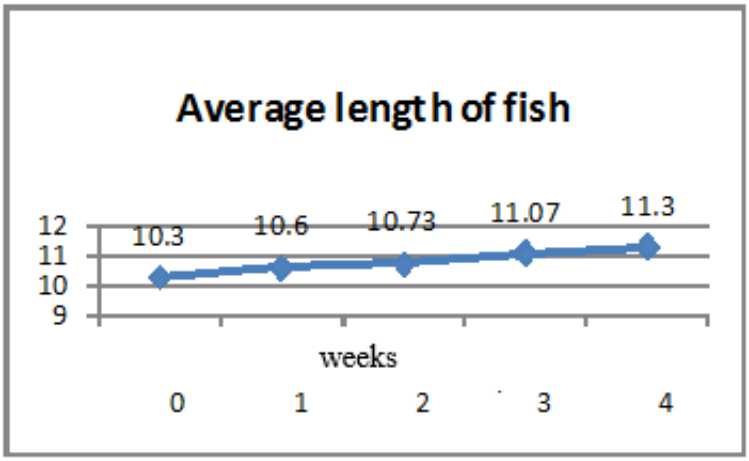

Figure 3. Length of Seluang fish during observation.

From the figure, it can be seen that there is an increase in the length of Seluang fish from week to week, with a daily length increase of 0.036 cm / day.

3.3. Life sustainability

The rate of decline in the average survival of Seluang fish during observation can be seen in Figure 4.

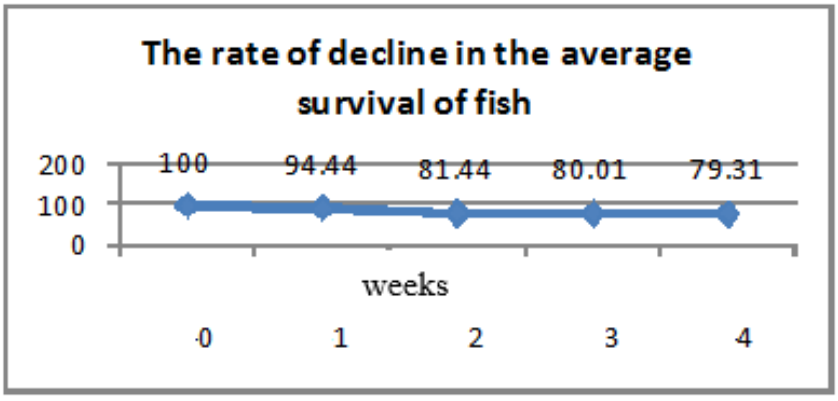

Figure 4. The rate of decline in survival of Seluang fish during observation.

From Figure 4. seen at the beginning of maintenance survival around 100%, Survival continued to decline until the end of maintenance was 79.01%. This is because in the early stages of fish maintenance they are still adapting to the new environment and feed. Over time, the rate of decline in survival has increased until the second week's adaptation. In the third week the rate of decline in survival starts flat until the fourth week of observation, with Survival appearing flat. This shows that the fish that are kept are able to adapt to the environmental conditions and feed provided.

4. Conclusion

From the results of the study it can be concluded that the domestication process of Seluang Fish (*Rasbora argyrotaenia*) can be done by maintenance in a pond that has been manipulated to resemble its natural habitat and the provision of artificial feed based on the feeding habit that has been carried out.

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