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Original Article

Length-weight relationship and relative condition factor of the Kissing Gourami (*Helostoma temminckii*) from Sungai Batang River, Indonesia

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Abstract

The length-weight relationship and relative condition factor of the Kissing Gourami (*Helostoma temminckii*) from Sungai Batang River, Indonesia were investigated. The fish were collected using bamboo stage-trap, portable trap and hand liftnet. A total of 120 males and 86 females (55-190 mm total length and 4-109 g weight) were analyzed using SPSS-16 software. There was no significance difference in the total length between sexes ($P>0.05$). However, female had body depth, body weight, the W/TL ratio and relative condition factor greater than male ($P<0.05$). About 27% of total catch falls within the range of 120-129 mm TL. The heaviest catch (30.83%) weighed between 30 and 49 g. The W/TL ratio of *H. temminckii* female in the present study was higher than *H. temminckii* species from other different geographical areas. The fish grew negatively allometric (b=2.78-2.90). Outcomes of this study could be useful for fisheries management and conservation measures in this river.

Keywords: allometric, *Helostoma temminckii*, length-weight, relative condition factor, Sungai Batang

1. Introduction

Like other freshwater fish species, the Kissing Gourami (*Helostoma temminckii*) belongs to family Helostomatidae are also widely distributed and commercially sold particularly in Southeast Asia (Vidthayanon, 2012). It beneficially supports fish farming, aquarium fish industry and recreational fishing activities. It can be found in rivers, wetlands, peat forest and swamps (Fahmi-Ahmad, Rizal, & Amirrudin, 2015; Thornton, Dudin, Page, Upton, & Harrison, 2018), and can tolerate low dissolved oxygen (DO) and pH. It can also be cultured in the earthen pond, and the best growth is achieved during the 9-month culture period, the body weight increases ranged from 46 to 123% (Zohrah & Haji Kasim, 2002). Pollution, overfishing and wetland conversion may potentially threaten to this species (Umbamnata, Diantari, & Hasani, 2015).

Numerous studies on *H. temminckii* have been dedicated to describe for example, visual sensitivity (Sakai, Wang, & Naka, 1995), hearing ability (Yan, 1998), meristic and morphometric characteristics (Muryati, Putra, & Efizon, 2016), genetic diversity (Arifin, Cahyanti, & Kristanto, 2017a), 'kissing behavior' (Ferry, Konow, & Gibb, 2012), skin color changes (Kopecký, Král, Čurlej, & Mrázová, 2012), food and feeding habits (Asyari, 2007; Prianto, Husnah, Nurdawaty, & Asyari, 2016), functional morphology of the head (Liem, 1967) and fishing activity (Thornton *et al*., 2018), as well as overview of aquaculture technology for this species (Yurisma, 2009). To manage the *H. temminckii* fishery resource rationally, it is therefore needed in-depth knowledge of its biology, feeding habit and ecology **(**Khairul Adha *et al*., 2009). The length-weight relationship is commonly used for analyzing growth pattern, condition factor, survival, maturity and reproduction of various fish species from different geographical areas (Asadi, Sattari, Motalebi, Zamani-Faradonbeh, & Gheytasi, 2017; Buragohain, 2018), and advanced techniques for morphometric analysis was recently presented (Mojekwu & Anumudu, 2015).

The Kissing Gourami is locally called *Tambakan* or *Biawan* (Figure 1). They are being caught from the river/swamp using different types of fishing gears such as *lukah* (portable trap), *tempirai* (bamboo stage-trap) and *hancau* (hand liftnet). *Lukah* is an elongated tube-shaped made of bamboo (150 cm) diameter of 20 cm containing one

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