

Author's Accepted Manuscript

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Mehmet Kır, Murat Can Sunar, Barış Can Altındağ



PII: S0306-4565(16)30235-2
DOI: <http://dx.doi.org/10.1016/j.jtherbio.2017.02.018>
Reference: TB1898

To appear in: *Journal of Thermal Biology*

Received date: 1 August 2016
Accepted date: 23 February 2017

Cite this article as: Mehmet Kır, Murat Can Sunar and Barış Can Altındağ Thermal tolerance and preferred temperature range of juvenile meagre acclimated to four temperatures, *Journal of Thermal Biology* <http://dx.doi.org/10.1016/j.jtherbio.2017.02.018>

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Thermal tolerance and preferred temperature range of juvenile meagre
acclimated to four temperatures

Mehmet Kir^{*}, Murat Can Sunar, Barış Can Altındağ

Faculty of Fisheries, Mugla Sitki Kocman University, 48000, Kotekli, Mugla, Turkey

^{*}Corresponding author: Mugla Sitki Kocman University, Faculty of Fisheries, 48000 Kotekli,
Mugla, Turkey. Tel: 90 252 2111896, Fax. 90 252 2111887, E-mail: mkir@mu.edu.tr

Abstract

The present study reports the temperature tolerance, estimated using dynamic and static methodologies, and preferred temperature range, based on oxygen consumption rate (OCR), of juvenile meagre (*Argyrosomus regius*) (Asso, 1801) (3.4 ± 0.9 g) after 30 days of acclimation at 18, 22, 26 and 30 °C. Meagre has dynamic and static thermal tolerance zones of 551 °C² and 460 °C², respectively and is a low resistance fish species, with a resistance zone area of 87 °C². The OCR of juvenile meagre at the above acclimation temperatures was 370, 410, 618 and 642 mg h⁻¹ kg⁻¹, respectively, and is significantly different ($P < 0.0001$, n=20). The fact that OCR increases by rising temperatures and gradually decreases after 26 °C indicates that the preferred temperature range of juvenile meagre is between 26 and 30 °C. Our study suggests that meagre is unable to respond to low and high temperature variation in aquaculture facilities or its natural habitats.

Keywords: *Argyrosomus regius*, temperature tolerance, preferred temperature

1. Introduction

Global mean temperature is predicted to increase by 1-7 °C over the next hundred years (Ficke et al., 2007). Therefore, the occurrence of extreme climate events is inevitable (Doney

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