

# The Relationship between otolith dimensions and fish body size of *Nemipterus japonicus* (Bloch, 1791) in Iraqi marine water

Layla A. Aufy

*Department of marine vertebrates, Marine Science Centre, University of Basrah, Basrah, Iraq*

Shaymaa A.J. Al-Jumalee

*Department of marine vertebrates, Marine Science Centre, University of Basrah, Basrah, Iraq*

Israa A. Al-Atbee

*Department of marine vertebrates, Marine Science Centre, University of Basrah, Basrah, Iraq*

Khulood A. Al-Mansy

*Department of marine vertebrates, Marine Science Centre, University of Basrah, Basrah, Iraq*

## Abstract

The relationship between otolith morphology and fish size of *Nemipterus japonicus* was investigated. Samples of 117 specimen were taken from Iraqi marine waters of Persian Gulf. The outline of the otolith was used to describe its length cm height cm and weight g. Measurements of left and right otolith did not appear significant differentiation, according to T-test. The optimal regression model, which relates otolith weight to the total length and body weight, was found by correlating each otolith parameter to the total length and weight of fishes. There was also a relative positive relationship between dimensions of otolith with the total length and weight of fishes.

**Keywords:** *Nemipterus japonicus*, otolith, otolith dimensions, Fish size, Persian Gulf.

## INTRODUCTION

Fisheries biologists have used the correlations between size and otolith parameter of fishes for variety of purposes, including predation studies and fish growth [1]. Otolith size might be used to evaluate fish total length because fishes growth has a noticeable greatly affect and is correlated positively with otolith mass [2]. If there is correlations between morphological characteristics of the prey (like length of

otolith) and the accurate size of the prey, and length- weight relationship of the prey species are known, if undamaged prey found in the diets of catch fishes it can be identified correctly to which species level or genus related, it is able to reproduce prey size from finding otoliths in the stomach contents of fishes [3, 4]. According to Lombarte [5], length of otoliths and its width features, as well as their correlations, are extensively used in morphology keys of fish otolith and the