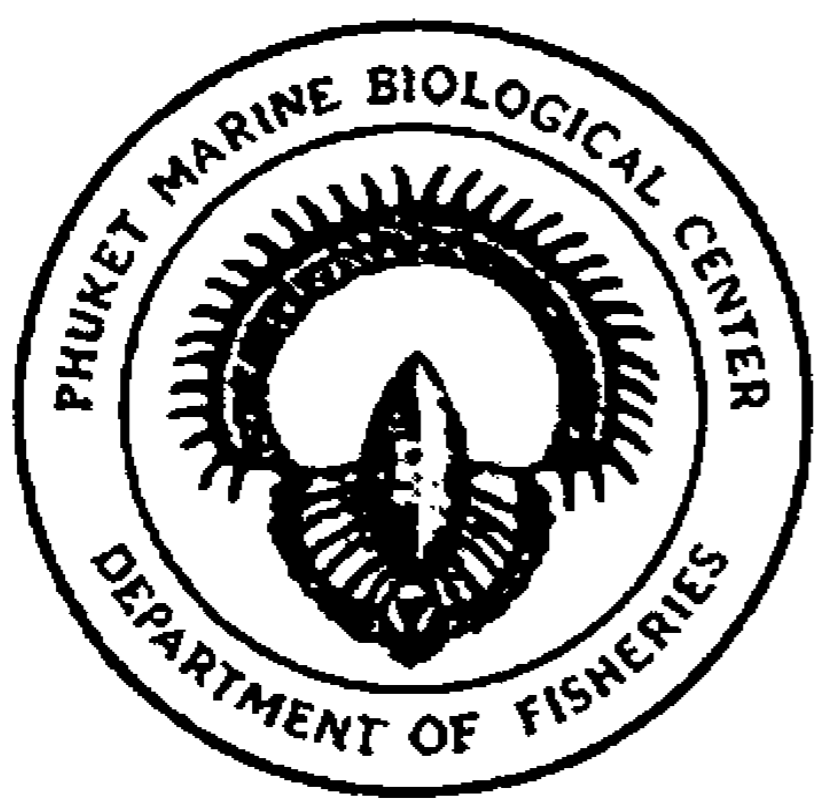


Biometrics of male and female top shell *Trochus niloticus* Linné

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Paongan, Y. T. Winanto & E. Soekendarsi. 2001. Biometrics of male and female top shell *Trochus niloticus* Linné. - Phuket Marine Biological Center Special Publication 25(1): 87-88.

Regression analysis showed a linear correlation between shell diameter and weight of male *Trochus niloticus* ($r^2 = 0.893$), shell height ($r^2 = 0.899$), and diameter of operculum ($r^2 = 0.848$). In females the coefficients of correlation for the same relationships were 0.929, 0.965, and 0.614 respectively.

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INTRODUCTION

The top shell *Trochus niloticus* Linné, 1758 (family Trochidae) has a large, conical shell. Externally the shell has a creamy white background colour with reddish stripes and pale red spots. Top shells live in coral reefs and feed on algae on dead corals (Soekendarsi *et al.* 1998). It is commercially important and has therefore been exploited to a level where it has become endangered in many places. Researchers such as Moorehouse (1932), Amirthalingan (1932), and Heslinga (1981) have examined observations on the relationships between shell dimensions. In this study we examine the relationships between shell diameter to wet weight, shell length and operculum diameter among male and female *Trochus niloticus*.

METHODS

A total of 44 male and 46 female specimens were collected by diving in shallow water at Baki Island, Spermonde Archipelago, South Sulawesi. The shells had a maximum diameter of 49.2-81.4 mm, shell height 49.3-81.3 mm, operculum diameter 16.9-29.5 mm, and wet

weight of 37.2-180.3 g. Determination of the sex was based on the colour of the gonad as described by Amirthalingan (1932). The male gonad is in creamy white and the female gonad dark green. Shell dimensions were measured with sliding calipers to the nearest 0.1 mm.

RESULTS AND DISCUSSION

Male top shell. - Regression analysis showed a linear correlation between shell diameter and wet weight described by the equation $y = 4.283x - 191.830$ ($r^2 = 0.893$; $p < 0.001$) (Figure 1). The relationship between shell diameter and shell height was $y = 0.960x - 0.251$ ($r^2 = 0.899$; $p < 0.001$) (Figure 2), and between shell diameter and diameter of operculum: $y = 0.321x + 1.891$ ($r^2 = 0.882$; $p < 0.001$) (Figure 3)
Female top shell. - Regression analysis showed a linear correlation between shell diameter and wet weight described by the equation $y = 4.964x - 240.150$ ($r^2 = 0.925$; $p < 0.001$) (Figure 4). The relationship between shell diameter and shell height was $y = 0.953x - 1.546$ ($r^2 = 0.965$; $p < 0.001$) (Figure 5), and between shell diameter and diameter of operculum: $y =$