

Length-weight relationship and growth pattern of *Sepioteuthis lessoniana* lesson 1830 (Cephalopoda: Teuthida) from the Jaffná Lagoon, Sri Lanka

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Abstract

In the present study, length-weight regression equations were derived for male and female *S. lessoniana* collected from the Jaffna lagoon, Sri Lanka in order to find out the regression parameters and growth pattern of this species. *Sepioteuthis lessoniana* (Lesson 1830) are one of the commercially important group of cuttlefishes and becoming an important model system for neurobiological and behavioral research. It appears to be the most adaptable species to the laboratory environment and there exist a need for detail study on length-weight relationship for this species. Such a mathematical equation enables conversion of one parameter in to another as is often required during monitoring field measurements. Regression coefficients were estimated by using the logarithms of the mantle lengths and the corresponding weights and the growth pattern of the species was also noticed. The curvilinear relationships of mantle length-weight relationships for male and female were $TW = 0.200 * ML^{2.477}$ and $TW = 0.229 * ML^{2.437}$, respectively. Covariance analysis for mantle length-weight relationships of males and females revealed that there is no significant difference ($p > 0.05$) between male and female and hence a common formulae of $TW = 0.213 * TL^{2.459}$ was derived for *S. lessoniana*. The 'b' values 2.477 and 2.4347 obtained for male and female, respectively indicate that the growth rate significantly differ from the ideal value '3' and its growth said to be negative allometry

Author keywords

Allometric growth; Big fin reef squid; Cube law; Length-weight relationship; *Sepioteuthis lessoniana*

Indexed keywords

EMTREE medical terms: allometry; animal behavior; article; body growth; body height; body weight; controlled study; cuttlefish; experimental model; female; growth rate; lagoon; male; neurobiology; nonhuman; regression analysis; sex difference; squid; Sri Lanka

Species Index: Cephalopoda; Sepiidae; *Sepioteuthis lessoniana*; Teuthida