Length-Weight Relationships for Two Commercially Important Species of Clupeidae (*Sardinella Longiceps, Anodontostoma Chacunda*) From Karachi Fish Harbor, Pakistan

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ABSTRACT

Introduction: Family Clupeidae is one of the diverse groups of fish species that has been continuously captured by Pakistan Fisheries Sector and currently found dominant with 15 species that are abundant in most of the year. From the reported 216 species more than 50 species of this family live in the Indian Ocean off the coasts of Pakistan, India, Ceylon and Burma (Day, 1889).

The allometric growth formula was firstly proposed by Huxley (1883) for the description of weight and length relationships. The length frequency and wet weight of each finfish species has key feature in fisheries studies and mainly important in yield estimation and stock estimation (Abdurahim et al., 2004), in estimation of biomass relation in response of length distributions (Petrakis & Stergiou 1995, Dulcic & Kraljevic, 1996) and calculating the condition of fish (Le Cran and Eric, 1951; Petrakis & Stergiou, 1995). Inspite of their abundance and diversity very few of them have been investigated for their scientific studies except of some general biological research on few individually selected species by some researchers from Pakistan coast.

***Objective*:** The proposed study focused the Length-weight relationships of selected two species of Clupeidae fishes are of commercial importance in fishery. This study will be related to the ongoing study of fish population dynamics and growth patterns of clupeid fish stocks.

Materials and Methods: Samples of fishes were collected on monthly scheduled from Karachi fish harbor located in Sindh, Pakistan. Statistical evaluations have been performed on the basis of individual morphometric such as different body measurements (e.g., Total length and weight). The length-weight relationship of Sardinella longiceps and Anodontostoma chacunda were estimated by the power function of W = aLb where, L= total length (cm), W= body weight (g), 'a' represent a coefficient related to form of body and an exponent indicating condition of growth represented by 'b' (Beverton& Holt, 1957).

***Results*:** The associated relationship between Length-weight of two fin fish species of Clupeidae family (Sardinella longiceps and Anodontostoma chacunda), procured from Karachi fish harbor were studied and the regression coefficient 'b' values were calculated as was 2.95 and 1.99 respectively. The correlation (r2) coefficient between the size and weight for these species were estimated and it was 0.73 and 0.74 individually. In this study, it was observed that significant positive correlation between the parameter of length and weight shows that two species (Sardinella longiceps and Anodontostoma chacunda) maintain their shape throughout their life.

Conclusion: It is concluded that there is significantly positive relation was found between length and weight in both species (Sardinella longiceps and Anodontostoma chacunda) and there is no change was observed in body shape.

Keywords: *Sardinella longiceps*, Karachi fish harbor, Morphology, *Anodontostoma chacunda*, Length and weight relationship.

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