Length at first maturity and spawning time of *Holothuria Leucospilota* (Brandt, 1835) in the northern waters of the Oman Sea (Sistan and Baluchestan Province)

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Abstract

The aim of the study is to better understand the biology and managment of *Holothuria Leucospilota* (this important stock) in the south of the Iran country. This study is designed on a monthly sampling in 2018 to 2020 years, based on determining six stations in the eastern coasts of the Sistan and Blouchestan province including Ramin, Kachoo, Aliabady, Beries, Beries plane, Pasabandar. A total of eight hundred and two sea cucumbers (624 males, 178 females) were biometrics as well as described. The mean length and weight of females and males of H. Leucospilota were 361±105, 366±96 mm and 438±150, 411±140 g respectively; and difference between the mean length and weight of females and males of *H. Leucospilota* was no significant (P> 0.05). Range of the total length was between 6-43 cm and the average 23±6 cm and the total weight was between 228-788 g and the average 284±164 g. Length-weight relationship of *H. leucospilota* species were for female specimens $W= 30.79 L^{0.92}$ (R2 = 0.68, N = 178), for female specimens $W= 25.76 L^{0.97}$ (R2 = 0.61, N = 624), for total specimens $W= 24.93 L^{0.98}$ (R2 = 0.62, N = 802), and the value of b Length-weight relationship indicating their allometric growth (P<0.05). This species has two major spawning peaks and the larger peak was in June and July and the smaller peak spawning was observed in December and January and There was no significant correlation between temperature and GSI index in different months (P> 0.05, r = 0.39). The mean size at first maturity was estimated to be 246 mm (male) and 220 m (female) and 222 mm for all specimens. This information is key to conserving and managing of stock this valuable species.

Keywords: Spawning, Allometric growth, *Holothuria leucospilota*, Sexual maturity.