

Determination of growth parameters of the king soldier bream (*Argyrops spinifer*), using the backcalculation method and otolith reading data in coastal waters of Bushehr Province, Persian Gulf
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Abstract

Age and growth of the king soldier bream, *Argyrops spinifer* (Forsskal 1775) in the Persian Gulf (Bushehr coasts) were investigated. A total of 622 samples were obtained from June 2010 to May 2011. Total length (TL) of fish ranged from 13.5 to 64.2cm (females) and 15 to 61.2cm (males). Male and female fish age ranged between 2⁺ to 25⁺ and 2⁺ to 21⁺ years, respectively. Values of the von Bertalanffy growth function were calculated in females, males and total population by using the backcalculation method and otolith reading data. The values of these parameters according to otolith reading data were $K=0.061$, $L_{\infty}=82.10\text{cm}$ (TL), $t_0=-2.39$ years for females and $K=0.082$, $L_{\infty}=67.90\text{cm}$ (TL), $t_0=-2.88$ for males and $K=0.065$, $L_{\infty}=75.50\text{cm}$ (TL), $t_0=-3.21$ for total population and according to backcalculation method were $K=0.088$, $L_{\infty}=76.37\text{cm}$ (TL), $t_0=-0.329$ years for females and $K=0.101$, $L_{\infty}=65.71\text{cm}$ (TL), $t_0=-0.168$ for males and $K=0.094$, $L_{\infty}=74.55\text{cm}$ (TL), $t_0=-0.191$ for total population. The results of the study provide the direction for the future management models for the continued sustainable exploitation of this species in the Persian Gulf region.

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