

PubMed

Display Settings: AbstractYing Yong Sheng Tai Xue Bao. 2007 Apr;18(4):871-6.

[Purification function and ecological services value of *Crassostrea* sp. in Yangtze River estuary].

[Article in Chinese]

Quan WM, Zhang JP, Ping XY, Shi LY, Li PJ, Chen YQ.

Key and Open Laboratory of Marine and Estuarine Fisheries of Agriculture Ministry, East China Sea Fisheries Research Institute, Chinese Academy of Fisheries Sciences, Shanghai 200090, China. quanweim@163.com

Abstract

Oyster reef ecosystem is a natural decontamination plant of estuarine environment. This paper analyzed the bioaccumulation of heavy metals by *Crassostrea* sp. population at the dams of Yangtze River estuary, with its purification capacity and ecological services value assessed. The results indicated that *Crassostrea* sp. had a high capacity in bio-accumulating Cu, Zn and Cd, with the bio-concentration factor (BCF) and biota-sediment accumulation factor (BSAF) being $(14.28 \pm 2.41) \times 10^3$, $(12.75 \pm 2.02) \times 10^3$ and $(14.51 \pm 3.71) \times 10^3$, and 26.78 \pm 4.53, 23.24 \pm 3.69 and 16.62 \pm 4.25, respectively. The bioaccumulation capacity decreased in the order of Cu > Zn > Cd > As > Pb > Hg. The total weight and fresh meat weight of the oyster at the dams of Yangtze River estuary were about 1.07×10^6 t and 1.75×10^5 t, respectively, and the total storage of nutrients and heavy metals were 1.462×10^6 kg N, 1×10^5 kg P, 24 745 kg Cu, 58 257 kg Zn, 609 kg Pb, 254 kg Cd, 0.18 kg Hg and 329 kg As. The total ecological services value of the oyster reef was estimated at about 8.27×10^6 RMB $\times a^{-1}$, including habitat value of about 5.10×10^6 RMB $\times a^{-1}$ and environmental value of about 3.17×10^6 RMB $\times a^{-1}$. Such an environmental value was equivalent to the value of treating about 7.31×10^6 t combined sewage each year, and corresponded to a large municipal sewage plant with a treatment capacity about 20 000 t d^{-1} .

PMID: 17615887 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances**LinkOut - more resources**