

**Spatiotemporal Distribution of Arsenic Species of Oysters
(*Crassostrea Gigas*) in the Coastal Area of Southwestern
Taiwan.**

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摘要

Abstract

This study investigated total arsenic (As) and As species contents of oysters (*Crassostrea gigas*) in different production areas, seasons and sea locations on the southwestern coast of Taiwan. Analytical results indicate that contents of total As, arsenite, arsenate, dimethylarsinic acid, monomethyl-arsonic acid and arsenobetaine in oysters are 9.90 ± 3.68 , 0.091 ± 0.104 , 0.033 ± 0.038 , 0.529 ± 0.284 , 0.037 ± 0.046 and 3.94 ± 1.33 mg/g (dry wt), respectively. A ratio of inorganic As concentrations to total As concentrations is 1.26%. Total As contents of oysters cultured in the outer sea are statistically significantly lower than those of oysters cultured in the inner sea. The total As contents of oysters is the highest in Putai, where the blackfoot disease prevails. The low As contents in oysters is attributed to the low temperature in winter, which slows the metabolism of oysters. A maximum value is $33.37 \mu\text{g/g}$ (dry) in Putai in spring, because a considerable amount of aquacultural waste water with high As contents is discharged into adjacent drainage channels and rivers there during that season.