二仁溪河口海域環境再開放可行性調查研究

李宗霖　　陳邦富

摘　要

本年度計出海四航次，調查二仁溪河口海域水質、漁業資源與漁產品質受金屬污染之程度。調查結果如下：

1.海水中金屬含量範圍大致爲：銅＜1～14ppb、鋅0.5～13ppb、鉛＜1～13 ppb、鎘＜0.5～0.7ppb、鎳＜0.5～13.4ppb和汞均小於1ppb。

2.懸浮粒子中金屬含量範圍大致爲：銅9.1～102.0ppm、鋅31.8～367.0ppm、鉛2.0～248ppm、鎳＜0.05～13.4ppm、鎘均小於0.05ppm。

3.於二水深，9～10 公尺與14～15公尺，計捕獲漁類二十五種，蝦類九種及其它生物，種分歧性指標分別爲1.79及1.92。

4.漁類與蝦類肉中金屬含量範圍分別爲：

銅：0.11～16.99ppm和2.61～33.33ppm。

鋅：1.9～64.76ppm和2.50～85.87ppm

鉛：0.05～0.69ppm和0.05～1.21ppm。

鎘：＜0.05pm和0.05ppm。

鎳：＜0.05～0.23ppm和＜0.05～0.2ppm。

懸浮固體及生物體中金屬含量與民國七十四年之調查比較，除了銅以外，已獲致相當之改善，值得注意的是銅污染對漁業產品品質有加劇之現象。就水質而言，與東港牡蠣養殖區比較，亦除了銅含量較高外，其餘金屬無太大差異。此一現象對牡蠣養殖影響如何，有待進一步研討。

* 國立中山大學海洋環境系副教授

Abstract

To investigate the metalic pollution and its effect on the quality of fishery products in the area of the Erh-jen estuary, four cruises were taken to collect samples. The results are summerized as follows:

1.The metals content in the seawater of that area are:

Cu <1 ~ 14ppb 、 Zn < 0.5 ~ 13ppb 、 pb < 1 ~ 13ppb 、 Cd < 0.5 ~ 0.7ppb 、 Ni < 0.5 ~ 13.4ppb and Hg < 1 pbb for all samples.

2.The metals contents in suspended solids of the seawaters in that area are :

Cu < 9.1 ~ 102.0ppm 、 Zn 31.8 ~ 367.0ppm 、 pb 2.0 ~ 248ppm 、 Ni<0.05 ~ 13.4ppm 、 Cd < 0.05ppm for all samples.

3.Twenty five species of fish, nine species of shrimp and other aquatic organisms were collected from waters of two different depths in the species diversity index was estimated to be about 1.79 and 1.92 for depths 9 ~ 10m and 14 ~ 15m.

4.The heavy metals contents in tissue among fish and shrimp are as followed:

Cu:0.11 ~ 16.99ppm and 2.16 ~ 33.33ppm

Zn:1.9 ~ 64.76ppm and 2.5 ~ 85.87ppm

Pb:< 0.05 ~ 0.69ppm and 0.05 ~ 1.21ppm

Cd:< 0.05ppm and < 0.05ppm

Ni:< 0.05 ~ 0.23ppm and < 0.05 ~ 0.2ppm

The metals contents of suspended solids and biota are compared to those in the those in the controlled area and those found in the 1985 cruise (biota only). It is then concluded that most of the metals investigated except copper are of little concern right now in regards to metalic pollution in the Erh-jen estuary. Nevertheless, the contamination of copper in seawaters with polluted suspended solids and biota still exists and has gotten worse compared to 1985 levels.