To Study the Content of Polychlorinated Biphenyls in Fish, Shellfish,and the Environment of Tamshui River

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Tamshui River was the main river that went across the northern metropolitan area of Taiwan.All wastes from household,business,and industry might be delivered into it and contributed to its pollution. As consciousness of environmental protection progressed and prevailed,the preservation of natural resources and maintenance of environmental integrity might became the urgent tasks of a modern society.For PCBs was an environmental pollution chemicals,the purpose of this study was aimed at its content in fish,shellfish,and environmental materials of Tamshui River so that the result could be employed as an important parameter and reference for the authorities in the effort to take actions to recover Tamshui River to its original states.

A total of 227 samples,including 130 fishes,19 shellfishes,30 river waters,28 soils and 20 sediments were tested.

The fishes and shellfishes were saponified with 1N NaOH alcoholic solution at first,and extracted with n-hexane.The soils and the sediments,after drying and being pulverized,were subjected into n-hexane extraction directly.The waters were directly extracted with n-hexane,too.The n-hexane extracted solutions,after concentration,were then cleaned-up with silica gel column or with concentrated sulfuric acid. The cleaned-up test solution finally obtained went to GC analysis with ECD.The PCBs contents in samples were qualificated and quantitated with peak pattern methods according to the acquired GC chromatogram.

The results showed that except crabs and peacock shellfishes, fishes and shellfishes from Tamshui River outlet and areas at Yeong Fwu Bridge and Fwu Her bridge,which layed across the river at about some 20 kilometers from outlet,were found to contain much higher PCBs than those from fresh water cultured and got from retail market.It also revealed that PCBs contents in the river waters,soils and sediments were higher in those areas around which popullation density and industry prosperity were higher.So it can be concluded that environment pollution of Tamshui river with PCBs obviously exists.This can be offered as an important basis for the evaluation of Tamshui River recovering and for long term study.