

PROJECT : CHEMICAL RESIDUES IN THE ESTUARINE COBBLER.

OBJECTIVE : To obtain preliminary information on the levels of mercury, lead, cadmium and organochlorine pesticide residues in estuarine cobblers (Chiloglanis macrocephalus) of the Swan River.

PROCEDURES : Twenty-seven cobblers were caught in the Mosman Bay area of the Swan River during April - May of 1973. Muscle and liver samples from each fish were analysed for mercury, lead, cadmium and organochlorine residues. Analyses were performed by the Government Chemical Laboratories.

RESULTS : Results are presented in Tables 1 and 2.

TABLE 1.
Residue levels in cobbler tissues.

	Muscle Concn. (Mean and range).	Liver Concn. (Mean and range).
Lead	0.10 ppm. (0.01-0.50), n=27	0.48 ppm. (0.07 - 0.78), n=10
Mercury	0.03 ppm. (0.01 - 0.07), n=27	0.07 ppm. (0.01- 0.11), n=5
Cadmium	≤ 0.05 ppm. n = 10	-
DDT & Metabolites	0.016 ppm. (0.001 - 0.07), n=27	0.11 ppm. (0.02 - 0.25), n=27
Diieldrin	0.008 ppm. (0.001 - 0.04), n=27	0.05 ppm. (0.02 - 0.18), n=27

TABLE 2.

Relationship between age and lead residue level in muscle.

One Year		Two Years and Older.	
mean	0.05 ppm.	mean	0.14 ppm.
variance	0.0034	variance	0.0154
n = 12		n = 15	
t = 2.127			

Cobblers of age two years and older had significantly higher lead levels in muscle than cobblers of age one year ($p < 0.025$). Levels of other residues did not differ significantly.

CONCLUSIONS : The National Health and Medical Research Councils recommended tolerance levels for these chemicals in fish muscle are:

Lead	2 ppm
Mercury	0.5 ppm.
Cadmium	5 ppm.
DDT & Metabolites	1 ppm.
Dieldrin	0.2 ppm.

Mean residue levels in muscle were well below these limits. None of the tissues analysed had residue levels exceeding the limits.

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