A comparative study on some heavy metal concentrations (Zn, Cu, Pb, Cd, Ni, Cr) in the sediments from Homa (Izmir) and Karine (Aydin-Türkiye) Fisheries Lagoons

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Homa and Karine are the most important fisheries lagoons in Ege region. Mean dephts of Homa and Karine fisheries lagoons are 0.50 m. and 1 m. Homa fisheries lagoons has 1800 ha. square and Karine fisheries lagoon has 8500 ha. square. Annual fish production varied in between 30-60 tons for Homa and 95-110 tons for Karine.

Sediments were collected from 5 different stations with a benne "Orange-peel" of capacity 4.5 l. This study was carried out on May, August and November 1991 in Homa, on November 1991 in Karine.

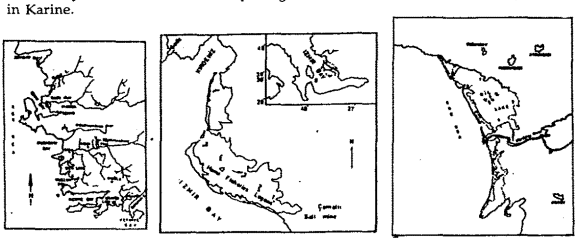

Fig. 1. Localisations of stations in Homa and Karine fisheries laggoons (1. Homa, 2. Karine)

All sediment samples were stocked in the plastic bags. Each sample was ovendried at 60°C for 24 h. and then sieved, using a 160 µm. From the dried sediment samples a quantity of 1 g. (<160 µm) was degisted with conc. HCl: HNO_3 (3:1 v/v Merck) under the reflux at 120°C ror 2 h. and then filtered with Whatman filter-paper. All samples were diluted to 50 ml with bidistilled water (ARNOUX *et al.*, 1981) and assayed using AAS 2380 Perkin-Elmer Atomic Absorption Spectrophotometer.

We were given the heavy metal concentrations in the sediments from Homa and Karine fisheries lagoons in Table I.

Table I. Some heavy metal concentrations in the sediments from Karine and Homa fisheries lagoons (µg/g dry weight).

KARİNE						
Zn	Nov.	33.5	63.0	45.0	42.0	54.0
Cu	Nov.	20.0	20.0	15.0	14.0	18.0
Pb	Nov.	40.0	35.0	40.0	15.0	30.0
Cd	Nov.	2.0	1.5	25	2.0	1.5
Ni	Nov.	260	279.5	264.0	237.5	258.5
Cr	Nov.	45.0	49.0	31.5	53.5	51.5

HOMA						
	Stations	1	2	3	4	5
Zn	May.	82.0	100.0	90.0	87.0	71.0
	Aug.	54.0	63.0	72.0	135.0	93.0
	Nov.	51.0	63.0	69.0	114.0	81.0
Cu	May.	26.5	20.0	22.5	26.5	20.0
	Aug.	17.0	26.0	23.5	24.0	24.0
	Nov.	19.0	19.5	20.5	17.5	14.0
Pb	May.	40.0	32.0	35.0	36.5	42.0
	Aug.	45.0	50.0	55.0	55.0	60.0
	Nov.	65.0	70.0	80.0	75.0	35.0
Cd	May.	2.0	2.0	2.0	2.5	2.5
	Aug.	1.5	3.0	2.5	2.5	4.5
	Nov.	2.5	1.5	2.0	2.5	2.0
Ni	May.	113.5	100.0	110.0	119.0	95.5
	Aug.	87.0	121.0	113.5	104.5	109.5
	Nov.	97.0	100.5	105.0	97.0	77.0

Homa fisheries lagoon takes part in outer Bay of Izmir and it is influenced on the sewages which come from Gediz River and very polluted inner Bay of Izmir (YARAMAZ, ALPBAZ, 1990).

Karine fisheries lagoon takes part in Southern Ege and it is influenced on the sewages from Menderes River.

According to our results, heavy metal concentrations of Homa sediments are higher than Karine sediments.

According as Table II, heavy metal concentrations of Homa and Karine sediments are lower than inner Bay of Izmir thus there is no risk in point of heavy metal pollution in these fisheries lagoons now.

Table II. Comparison of Heavy metal concentrations in the sediments from Homa fisheries lagoon, Inner and Middle Bay of Izmir and Venice lagoon (µg/g dry weight).

Localite	Zn	Cu	Pb	Cd	Cr	References
Inner Bay of Izmir	61-899	16-213	13-305	1.3-6.6	21-237	Gey, Mordoğan, 1988
Middle Bay of Izmir	38.5-110	12.5-28.5	41.3-61.0	2.0-5.0	-	Yaramaz et al. 1991
Homa fisherics lagoon	32-68	19-27	10-95	2-5.5	43-78	Yaramaz et al. 1990
Venice lagoon	61-5930	21-463	3.1-278	1.1-25.4	-	Pavoni et al. 1987

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