

### The Levels of Heavy Metals Accumulation in some Benthic Organisms living in Izmir Bay

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Izmir Bay has been affected by industrial pollution from the facilities took place around and domestic effluent from the city (UYSAL and TUNÇER, 1982). The purpose of this study was to determine the level of accumulated heavy metal in several organisms living in the polluted part of Izmir Bay. These samples chosen could be found in most of the part of the bay in every season.

In this investigation the samples which are *Codium tomentosum* Stackhouse, *Penaeus kerathurus* (Forsk., 1775), *Solea vulgaris* Quensel, 1806, and *Gobius niger* Linnaeus, 1758 collected from different places of Izmir Bay have been analysed for Hg, Cd, Zn, Pb, Cu, Mn, Fe from December 1987 to December 1988. The samples had been decomposed using the mixtures of HNO<sub>3</sub> - HClO<sub>4</sub> (5:1) acids in water bath with maximum temperature 40°C, under reflux system. Hg was determined by cold vapour atomic absorption spectrophotometry and the others was determined by flame (Varian Techtron 1250) (BERNHARD, 1976).

The results have been calculated as µg/kg wet weight. For the statistical evaluation based on the medians and quartiles of data were chosen (TUKEY, 1977).

As the results of these studies median values of Hg and Cd concentrations were ranged between 13-35 µgHg/kg wet weight and 65-138 µgCd/kg W.W. and *S. vulgaris* included minimum amount of these metals while *C. tomentosum* had maximum. Pb values varied between 380-2500 µgPb/kg W.W. in *P. kerathurus* as minimum and in *C. tomentosum* as maximum. Cu and Zn contents were changed in 622-5004 µgCu/kg W.W. and 3904-12016 µgZn/kg wet weight. Maximum Cu and Zn contents were found in *P. kerathurus* and minimum were in *G. niger*. Mn content of *G. niger* was minimum and of *C. tomentosum* was maximum and range between 350-37823 µgMn/kg wet weight. Fe values varied between 5061-160000 µgFe/kg W.W. in *S. vulgaris* as minimum and in *C. tomentosum* as maximum (Table 1.).

The values obtained from this study had shown about similar manner comparing with these mentioned by other authors from different areas of Mediterranean (EMARA, 1982; VASILIKIOTIS et al 1982; TUNÇER, 1988).

Table 1. The levels of heavy metals which were determined in some benthic organisms collected from Izmir Bay (µg/kg W.W.)

Species		Hg	Cd	Pb	Cu	Zn	Mn	Fe
C. tomentosum	Minimum	20	9	724	510	2727	3448	73426
	Lower Quartile	30	70	2057	692	3338	19153	88411
	Median	35	138	2500	893	4285	37823	160000
	Upper Quartile	42	244	3897	1029	6255	68493	220130
	Maximum	53	470	6720	1737	8600	131837	833776
		n=11	n=9	n=11	n=11	n=11	n=10	n=11
P. kerathurus	Minimum	6	8	66	2730	10015	261	6031
	Lower Quartile	15	14	113	4040	11134	583	8120
	Median	20	65	380	5004	12016	876	9168
	Upper Quartile	36	143	1965	6465	13857	1090	16162
	Maximum	51	432	4500	9136	15557	2595	27724
		n=12	n=11	n=11	n=12	n=12	n=12	n=12
S. vulgaris	Minimum	5	7	53	266	3011	171	3336
	Lower Quartile	10	20	165	501	3950	343	4454
	Median	13	121	1297	644	4461	370	5061
	Upper Quartile	26	154	2100	856	5720	567	5558
	Maximum	57	277	5580	1696	9263	775	10694
		n=21	n=17	n=18	n=21	n=21	n=14	n=21
G. niger	Minimum	4	8	26	184	2404	140	2838
	Lower Quartile	12	52	332	436	3110	277	4532
	Median	19	89	1228	622	3904	350	5720
	Upper Quartile	30	257	2252	960	4868	437	7576
	Maximum	66	476	6613	2794	12500	980	14464
		n=26	n=24	n=26	n=26	n=27	n=21	n=27

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