

**Radiocesium Levels in Algae, Shellfish and Sediment Samples  
collected from the Eastern Mediterranean Coast of Turkey**

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Radioactive contamination from the Tchernobyl accident in the marine environment of Turkey has been detected in fish (Topcuoglu *et al.*, 1987), algae (Güven *et al.*, 1990) and shellfish (Bulut *et al.*, in press). In this study we report the data obtained on the radioactivity levels in algae, shellfish and sediments collected from eastern Mediterranean coasts of Turkey in 1989.

The algae samples were collected from Akkuyu, Yumurtalık, Botaş and Karataş. *Patella* sp. were collected in Akkuyu. The sediment samples were taken with a Beckman type dredge from approximately a 10 m depth in the Akkuyu area. The samples were dried and analysed by a  $\gamma$ -ray Canberra S-85 4 K MCA spectrometer coupled to a high purity Germanium detector (Ortec GMX).

Table 1

Sample	Location	$^{134}\text{Cs}$	$^{137}\text{Cs}$	$^{40}\text{K}$
<b>ALGAE</b>				
<i>Cystoseira crinita</i>	Akkuyu (1)	nd	nd	1.198 $\pm$ 0.169
<i>C. fimbriata</i>	Akkuyu (1)	nd	0.0021 $\pm$ 0.0018	0.879 $\pm$ 0.174
<i>Fadina pavonia</i>	Akkuyu (1)	nd	0.0019 $\pm$ 0.0018	0.701 $\pm$ 0.125
<i>Jania rubens</i>	Akkuyu (1)	nd	0.0024 $\pm$ 0.0020	0.166 $\pm$ 0.077
<i>Halopteris</i> sp.	Akkuyu (1)	nd	0.0016 $\pm$ 0.0015	0.471 $\pm$ 0.116
<i>Dictyota dichotoma</i>	Akkuyu (1)	nd	0.0022 $\pm$ 0.0019	1.272 $\pm$ 0.136
<i>Cladostephus verticillatus</i>	Akkuyu (1)	nd	nd	0.967 $\pm$ 0.237
<i>Fadina pavonia</i>	Yumurtalık(2)	nd	nd	-
<i>Jania rubens</i>	Yumurtalık(2)	nd	nd	-
<i>Sargassum hornshuchii</i>	Yumurtalık(2)	nd	0.0032 $\pm$ 0.0026	-
<i>S. hornshuchii</i>	Botaş (2)	nd	nd	-
<i>S. hornshuchii</i>	Karataş (2)	nd	nd	-
<i>S. linea</i>	Karataş (2)	nd	0.0025 $\pm$ 0.0021	-
<b>SHELLFISH</b>				
<i>Patella</i> sp. (soft part)	Akkuyu (1)	nd	0.0020 $\pm$ 0.0018	0.061 $\pm$ 0.006
<i>Patella</i> sp. (shell)	Akkuyu (1)	nd	0.0019 $\pm$ 0.0018	0.061 $\pm$ 0.006
<b>SEDIMENT</b>				
Sample 1	Akkuyu (1)	nd	0.0025 $\pm$ 0.0021	0.241 $\pm$ 0.044
Sample 2	Akkuyu (1)	nd	0.0020 $\pm$ 0.0017	0.290 $\pm$ 0.145

(1) Collection date July 1989, Counted date Sept. 1989

(2) Collection date June 1989, Counted date Feb. 1990

nd: not detected

The results are given in Table 1. They indicate that  $^{134}\text{Cs}$  activity was not detected.  $^{137}\text{Cs}$  was found in the sampler in varying amounts, i.e. in very low or non-detectable levels.

Comparison of the results with those of the earlier study showed that the amounts of  $^{137}\text{Cs}$  in *Cystoseira fimbriata* and *Jania rubens* were 0.0047 and 0.0039 Bq/g respectively in 1984 but diminished to 0.0021 and 0.0024 Bq/g. At the same time, the amounts of  $^{137}\text{Cs}$  in sediments collected from Akkuyu were negligible in 1984 and 1989 (Cnaem, 1986). On the other hand, the  $^{137}\text{Cs}$  activity levels are also in the same range in Antalya sediments collected in 1986 before and after Tchernobyl accident (unpublished data).

These results indicate that the effect of the Tchernobyl accident was not apparent in the Mediterranean coasts of Turkey.

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