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Contribution to the Knowledge of Fluoride Distribution in
the Central and Southern Adriatic

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S u m m a r y

The results of fluoride concentrations and F/Cl ratios in the central and southern Adriatic have been discussed. Monthly and vertical distribution have been worked out.

R e ´ s u m e ´

Dans cette communication on expose les résultats de recherche sur les quantités fluoride et la relation F/Cl dans l'Adriatique moyenne. Les résultats se rapportent sur les distributions saisonnière et verticale.

T h e a r e a

Fluoride concentrations together with other oceanographic parameters were measured at Stations 25, 8, 9 and 3 in the central Adriatic, and at Stations 15 in the southern part during 1973. At Stations 25, 8 and 9 samples were collected monthly from February to November, and at 3 and 15 in March, June and September. Stations 25, 8 and 9 are under the influence from the coast (especially 25 and 8), whereas 3 and 15 are in the open sea.

M e t h o d s

Fluoride concentration was measured by automatic method (GRASSHOFF, 1965) with alizarine complexone. The sensitivity of the method is 0.006 mg/l.

Rapp. Comm. int. Mer Médit., 24, 8 (1977).

R e s u l t s a n d d i s c u s s i o n

Results for F/Cl ratios are given as means by levels (Table 1):

Monthly fluoride means distribution varied more in spring, particularly at stations closer to the coast (25, 8 and 9).

Vertical distribution of means showed an increase in deeper layers. At the deepest station 15 (1190 m) it reached its maximum, 1.491 mg/l. This may be due the solution of bottom fluoride minerals in the sea as recorded from the deeper waters of the Mediterranean and Atlantic (R. Greenhalgh, J.P. Riley, 1963).

The same was obtained for F/Cl ratio, the greatest ratio (6.954×10^{-5}) found at greatest depths in the Adriatic (Table 1).

Table 1. Means of F/Cl $\times 10^{-5}$ ratio by depth

Depth (m)	St.25	St.8	St.9	Depth (m)	St.3	St.15
0	6.835	6.790	6.735	0	6.854	6.709
10	6.883	6.769	6.739	20	6.792	6.656
20	6.820	6.779	6.718	50	6.726	6.706
30	6.832	6.800	6.759	100	6.800	6.751
50		6.805	6.814	300	^x 6.786	6.643
75		6.869	6.790	500	^{xx} 6.859	6.723
100			6.782	1000		6.843
				1190		6.954

^x200 m level

^{xx}260 m level

REFERENCES

1. Grasshoff(K.); 1965. Automatic determination of fluoride, phosphate and silicate in sea water. Automation in analytical chemistry, Technicon Symposia 1965.
2. Greenhalgh (R.) and Riley (J.P.), 1963. Occurrence of abnormally high fluoride concentrations at depth in the oceans. Nature, 197 : 371-372.

