

RESULTS OF LONG-TERM OBSERVATIONS ON RADIOACTIVE  
CONTAMINATION ( $^{90}\text{Sr}$ ) OF THE DANUBE RIVER MOUTH

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Abstract

The maximum  $^{90}\text{Sr}$  contamination of water and organisms from the mouth of the Danube river was noted during the years 1966-1968. The lowest values of  $^{90}\text{Sr}$  occurred in 1976. Atmospheric fallout appears to be the major source of  $^{90}\text{Sr}$  contamination in this region.

The following results were obtained during a long-term monitoring programme:

1. Atmospheric fallout and terrestrial runoff were the major sources of  $^{90}\text{Sr}$  entering Danube waters from 1961 to 1981.
2. The maximum  $^{90}\text{Sr}$  contamination in water and organisms of the Danube mouth occurred during the years 1966-1968 (Tables 1 and 2). This peak corresponds with the maximum recorded contamination in the atmosphere at  $40^\circ$  north latitude, which resulted from nuclear weapon tests carried out prior to and during that time.
3. The minimum concentrations of  $^{90}\text{Sr}$  in water and organisms from the mouth of the Danube was noted during 1976 in spite of the fact that more than 16 atomic power plants were functioning along or near the Danube river at that time.

References

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Table 1

<sup>90</sup>Sr concentration in water from the Danube mouth  
during the period 1961 - 1981

Years	<sup>90</sup> Sr (Bk/l)	Refs.
1961 - 1963	1,85 - 11,10	(3)
1966 - 1967	64,75 - 88,80	(5)
1974 - 1975	13,69 - 18,50	(1)
1976 - 1978	8,51 - 13,69	(2)
1979 - 1981	6,66 - 10,73	This study

Table 2

<sup>90</sup>Sr concentrations in organisms from the Danube  
during the period 1967 - 1979

Hydrobionts	year	<sup>90</sup> Sr (Bk/kg wet)	Refs.
<u>Scardinius erythrophthalmus</u>	1967	5,99	(4)
" "	1976 - 1978	1,79 - 1,97	This study
" "	1979	0,51 - 0,74	This study
<u>Silurus glanis</u>	1967	1,56	(4)
" "	1976 - 1978	0,28 - 0,53	This study
<u>Carassius vulgaris</u>	1967	9,25	(4)
" "	1978 - 1979	0,53 - 0,89	This study

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#### Discussion

No comment.