

**INTERCALIBRATION OF ANALYTICAL METHODS ON MARINE ORGANISMS**

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Several intercalibration exercises of trace element measurements were organized to examine the present state of the art of the measurement performance with the aim of improving the comparability of results among participating laboratories. Fifty six laboratories on a world-wide basis participated in the exercise in 1978. The fish flesh homogenate sample was prepared for the measurement and distributed to the laboratories by the IAEA International Laboratory of Marine Radioactivity, Monaco.

We used the proton induced X-ray spectroscopy system which we had developed at T.W. Bonner Nuclear Laboratories, Rice University, Houston, Texas. Samples for irradiation with 3 MeV protons were prepared in three different ways: using the original sample, by ashing in an electric muffle furnace, or using the wet ash technique. Trace element concentrations obtained by all three means, gave satisfactory agreement of the relative ratios. Using the wet ash technique we were able to obtain the absolute concentrations for 12 elements listed in Table I (upper row) together with the preliminary overall averages of the results from 54 laboratories. Concentrations are given in  $\mu\text{g/g}$  - dry matter.

Table I.

Cr	Mn	Fe	Ni	Cu	Zn
$12.9 \pm 1.2$	$3.5 \pm 0.9$	$62.5 \pm 1.5$	$2.5 \pm 0.4$	$5.6 \pm 0.2$	$37.7 \pm 0.9$
$2.9 \pm 0.6$	$1.0 \pm 0.1$	$61 \pm 4$	$1.2 \pm 0.2$	$4.6 \pm 0.4$	$36 \pm 3$
As	Se	Br	Rb	Sr	Pb
$2.2 \pm 0.4$	$1.2 \pm 0.2$	$23.5 \pm 0.8$	$10.6 \pm 0.7$	$2.1 \pm 0.2$	$2.8 \pm 0.7$
$2.5 \pm 0.2$	$1.9 \pm 0.3$	-	-	-	$0.7 \pm 0.2$

Agreement with the overall average results is rather good except for Cr and Mn which lie in the spectra in the region of a high background.