# RESIDUES OF MERCURY AND ARSENIC IN FOOD OF THE ANIMAL ORIGIN IN THE SLOVENIA REGION

**Katja Florjanc[1], Primož Florjanc[2]**

[1] Institute for Food Hygiene and Bromatology, Veterinary Faculty Ljubljana, Gerbičeva 60, 1000 LJUBLJANA, Slovenia

[2] VETING Research & Development Ltd., Braslovče 18, 3314 BRASLOVČE, Slovenia

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## ABSTRACT

Results of the measurements done in a decade between 1985 and 1994 were studied. 987 samples were analyzed to measure the content of total mercury and 1687 samples to measure the total arsenic.

The analysis of the results showed that the content of the mercury and arsenic in food of the animal origin is not problematic. Only a few samples measured showed higher content of these two elements and most of them were tissues of water living organisms, respectively. A significant difference about the content of these elements between certain areas in Slovenia was not found. Koper area and its surrounding are the only exception but we can not state that the pollution of the environment in this part of Slovenia is higher because the majority of the samples were marine organisms. Significant difference about the content of arsenic among those years was not established. The content of the mercury was found significantly higher in the year of 1986.

## OBJECTIVES AND EXPERIMENTAL METHODS

987 samples were analyzed to measure the content of the total mercury and 1687 samples to measure the total arsenic.

Flameless atomic absorption spectrophotometry (hydride technic) was used to measure the total mercury and the spectrophotometric method was used for the total arsenic.

## RESULTS

Based on this study it was concluded that the content of the total mercury in the food of the animal origin produced in Slovenia is a little bit higher than in some other countries. The results indicate higher content of the mercury in the water organisms than in the slaughter animals and the game. The highest content of the mercury in pigs and cattle was found in the kidney followed by the liver and the meat. These results are comparable with the results in some other countries. The content of the mercury was found significantly higher in the year of 1986. The content of the mercury in Koper area is significantly higher to the areas Maribor, Ljubljana and Murska Sobota.

The results of the arsenic measurements in the food of the animal origin are comparable with the results in some other countries. The content of the arsenic in the pork and poultry is lower than in some compared countries. The content of the arsenic is significantly the highest in marine organisms followed by freshwater fish and significantly the lowest is the content in the tissues of the slaughter animals, game, milk, milk products, honey and eggs. The distribution in the pigs and cattle is the same as it was established for the mercury. The highest content was found in the kidney lower in the liver and in the meat. On the other side the highest content of the arsenic in the poultry was found in the liver, the lowest measure was in the kidney, respectively. The highest content in wildlings was found in the meat. The differences in the arsenic content between the foodstuffs of the animal origin except the water organisms are not significant and the same situation is also among the years. The content of the arsenic in Koper area is significantly higher than in other Slovenian regions.

## CONCLUSIONS

The final conclusions are that the mercury and arsenic contents in the food of the animal origin produced in Slovenia is not problematic.

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