Conductometric transducers consisting of two identical pairs of platinum interdigitated thin-films electrodes were fabricated in Institute of Chemo- and Biosensorics (Muenster, Germany) by vacuum deposition on a glass substrate.

It was shown that acetylcholinesterase conductometric biosensor is more sensitive to these pollutants than butyrylcholinesterase biosensor. It was shown for the first time that the inhibition effect of parathion-methyl on the enzyme activity increases dramatically as soon as the photodegradation begins. The toxicity curve does not exactly follow the curve of the appearance of paraoxon-methyl, which is more toxic than parathion-methyl in more than ten times. The results obtained could be explained by a strong synergistic effect of different metabolites on the enzyme activity. The biosensor system can be used as a rapid technique ("early warning system") for measuring pollutants in the environmental processes.

DETERMINATION OF SELENIUM IN GARLIC (Allium Sativum) AFTER ACTIVATED CARBON ENRICHMENT BY ET-AAS

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Determination of selenium has become of increasing importance in life sciences in recent years. Selenium has dual role in metabolism as an essential element at low concentration levels and as a toxic substance at higher levels as well as its cancer prevention (1). The biological effects of selenium may be explained from its chemical form, which shows different toxicities being exhibited for organic and inorganic compounds. Daily uptake of selenium has to be control from foods, which contains 100 mg/kg selenium levels such as in garlic (Allium Sativum) (1).

Determination of selenium in water, soil and serum samples by AAS has been widely studied but several works were done for vegetable matrices (2). The selenium level is thoroughly low (μg/L) depending on the type of soils which might be the limitation of the analysis. Due to complex matrix which might causes interferences, sample preparations step becoming more significant in the analytical scheme. Wet digestion process was commonly advisable for the total selenium determinations by graphite furnace.

In this study, an analytical scheme was introduced using microwave digestion system compared with conventional wet digestion. Interferences will be outlined which covers acids as well as matrix component from real garlic. Activated carbon method will be introduced as important. Calibration methods that will be used for the accuracy the results. Recovery test will be shown for the parameters such as pH, time, amount of carbon and complexing agent.

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