MARTIN PAULUS: Assessment Approaches for Biomonitoring with Accumulation Indicators in the Federal Republic of Germany

In environmetal monitoring, the application of bioindication methods became more and more important over the past years. At the same time increasing requirements on the assessment of concentrations of hazardous substances in plants and animals have developed. Meanwhile, accumulation indicators should not only illustrate differences related to time and space but also indicate effects of tissue concentrations on living systems. In this context, the objektive of this book is to discuss the possibilities and to propose solutions for a more effective biomonitoring in the Federal Republic of Germany on a national scale. Following subject areas are treated:

- Ability of biomonitoring by use of accumulation indicators: Information content of tissue concentrations for environmental assessment.
- Precision and representativeness: Standard operating procedures and quality assurance.
- Approaches for the assessment of tissue concentrations in environmental monitoring.
- Present possibilities for a national effect monitoring in consideration of the recent scientific knowledge.

Because of the lack of sufficient information about critical tissue concentrations, there is at present no basis for an effect related assessment in biomonitoring with accumulation indicators. The only realizable approach consists in the establishment of an nation-wide reference systeme (cf. human biomonitoring). In Germany, a suitable data base is given by the federal environmental specimen banking program (ESB), which is recommended in this book as the framework for a national biomonitoring assessment system. For the realization of a strictly effect related approach, future research activities have to be focused on the detection of internal threshold concentrations.