

PERSPECTIVES IN BIOMONITORING OF AIR POLLUTANTS WITH PLANTS

J. Franzaring, A. Klumpp

University of Hohenheim, Institute for Landscape and Plant Ecology, Stuttgart, Germany

European air quality policy aims at defining and establishing objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment. In line with this goal, the European Commission has recently proposed the use of bioindicators to assess regional patterns of air pollutants and the development of an EU wide biomonitoring system to effectively address environment and health linkages. This has affirmed the use of biological methods in environmental monitoring and planning and has given incentive to improve the existing techniques. In many countries plants have long been used as reactive and accumulative indicators to confirm phytotoxic impacts of air pollutants and to demonstrate the discharge of toxic compounds into the environment and food chain. However, the methods have not been harmonised to date and the observed plant responses may not always be related to adverse effects of air pollutants on health and ecosystems. The presentation will focus on recent developments and perspectives in biomonitoring of air pollution. Examples for active and passive approaches will be given for classical air pollutants, which continue to be a problem in many emerging economies, and for pollutants which have come to the environmental agenda more recently. International and national biomonitoring programmes will be reviewed with the final suggestion to intensify the efforts to harmonise methodologies.