

Bi2003 Ecotoxicology

Syllabus / Questions for final test

Introduction to Ecotoxicology - lecturer: Ludek Bláha

- CASE STUDIES AND EXAMPLES - examples of adverse effects at population and ecosystem effects (e.g. DDT, avermectin antiparasitics, cyanobacterial blooms)
- ADVERSE OUTCOME PATHWAYS - from Bioavailability (definition) through Toxicity mechanisms to Effects (organism-population-ecosystem) - concept and examples/case studies (e.g. estrogens)
- DOSE-RESPONSE - Concentration-response relationships (principles, standard toxicity curve, derivation of EC50, LOEC, NOEC)
- TYPES OF EFFECTS - (i) Modes of Action of chemicals at molecular level (key examples), (ii) Effects of chemicals at cell level (key processes), (iii) Effects of chemicals at the organism level (apical endpoints - mortality, reproduction + other chronic), (iv) Effects at population and ecosystem levels (examples)
- ASSESSING EFFECTS - testing of chemicals and contaminated samples - principles (models, batteries of assays from different trophic levels), effect assessment (laboratory bioassays - micro/mesocosm - field biomonitoring/bioindication)
- ECOTOXICITY APPLICATIONS - (i) RISK ASSESSMENT PRINCIPLES - Hazard vs Risk, key steps, PEC, derivation of PNEC (using assessment factors), HI or Risk Quotient, EQS, (ii) LEGISLATION - REACH example