Identification of 3-hydroxymethyl sulfentrazone in rats' urine
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The identification of adverse effects on environmental health caused by chemical agents is particularly challenging. Sulfentrazone, a phenyl triazolinone herbicide, is converted in soil of temperate regions, to 3-hydroxymethyl sulfentrazone (HMS) and has a high leaching potential both vertically and horizontally. It is also one of the most often used herbicides in tropical regions. However, the fate of this compound in these regions is not known. Given (a) the importance of knowing the environmental behavior of this herbicide in soils of tropical regions, (b) considering the commercial unavailability of the HMS, and (c) its low acute oral toxicity (LD50=2855 mg.kg⁻¹), this compound was isolated from rats' urine after administration of the herbicide. The proposed mammalian metabolic pathway is the conversion of the parent compound mainly to 3-HMS (86-95%), which is excreted in the urine. For that, male Wistar rats were exposed to 100 mg sulfentrazone kg⁻¹ of body weight, diluted in olive oil. The compound was kept in olive oil in metabolic cages and the urine was collected in ice for 48 h. The HMS was purified by preparative HPLC and identified by mass spectrometry. HMS metabolite was identified as the peak that showed a mean retention time of 12.52 min. Since the HMS metabolite is present in urine, it was possible under low doses to determine in a next step the highest possible to be obtained in a dose that not cause damage to the rats.

TU 025
Organic and metal contaminants in Eurasian caviar: Trends & risks
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Concentrations of organic (POPs) and inorganic contaminants were measured in 13 samples and 3 species of caviar (Acipenser) originating in Azerbaijan, Bulgaria, Iran and Russia. The most prevalent POP, DDT, had a wider range of concentrations (0.0006-3.916 ng/g wet). BFRs were detected in 13 samples of 12 species. Arsenic (As) also varied considerably (236-1587 ng/g wet). The highest levels of organic compounds were detected in Hucho huco caviar from Azerbaijan. Concentration trends, estimated by incorporating data from four earlier studies, show that PCB and DDT levels have been declining since 1978, chlorobenzenes, chlorobenzene and other POP's showed no trends, and HCHs peaked around 2000. A screening level risk assessment suggests that most health risks from caviar consumption are due to selected POPs. DDT and As, although the toxic (inorganic) fraction of As in caviar remains to be determined. Issues of biomonitoring in these species are discussed.

TU 026
Use of the exploited hydrobiological database (BDHE) as tool for biodiversity assessment
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Nuclear power plants typically use river water for cooling. In France, physicochemical and biological measurements are regularly conducted in order to monitor the possible environmental impact of the discharge. The raw data of this extensive monitoring program covering 14 sites for 15 to 20 years has been combined to a hydrobiological database (BDHE). Several studies have been conducted using the BDHE in order to assess various phenomena of anthropogenic or natural disturbance of the ecosystem. However, due to its large size and its increasingly complex data structure, the BDH has become difficult to handle. In order to allow future exploitation of this valuable database, an exploited hydrobiological database (BDHE) was set up in 2006. Herein, data are pre-processed, i.e. sampling sites are grouped, simple statistics are added and several formatted graphs are provided. As example, the evolution of biodiversity is shown and different sites as well as between different rivers are compared.

TU 027
Identifying areas with chronic air pollution using simultaneously two sets of biomonitoring lichen data: biodiversity and pollutants accumulation
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Both lichen biodiversity and lichen pollutants accumulation has often been used in biomonitoring studies of air pollution. In certain areas both sets of lichen data were obtained simultaneously. The aim of this work is to show how both lichen data sets may be optimized in order to give more information than is usually obtained from these studies. Moreover this spatial data might be used for pinpointing areas with chronic air pollution opposing to areas with acute air pollution episodes. For that, one of the most industrialised areas of Portugal was chosen. The study was centred in Sines area which is characterized by very important industrial facilities established since the late 1970's, namely a coal power plant, an oil refinery, a chemical plant and, more recently, an industrial landfill as well as many other smaller industries. Biodiversity data was obtained at 71 locations in Queveca sub free trunks. Pollutants were obtained by analysing S, Pb, Cu, Ni, Al, Fe, Ti, Si, Mg, Mn, H, Ca, K, Cd in the lichen Parmotrema hypoleucinum in 130 sampling sites. A comparison between the individual and the integrated spatial models was performed. This data applied to other studies will be important for: environmental-health studies; to determine the localizatlon of air quality stations; and to better manage the air quality at regional scales.

TU 028
Incorporating atmospheric ammonia deposition with nitrogen in lichens
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Atmospheric ammonia deposition with nitrogen in lichens has been used for long time as biomonitor of several pollutants, since they intercept them in a very efficient way. Our hypothesis is that both total nitrogen and ammonium nitrogen measured on lichens might be used as an estimation of the NH3 atmospheric deposition. For that we measured the NH3 atmospheric deposition with low-cost diffusion tubes (CEH - ALPHAp) that provide long-term data and high spatial coverage for the assessment of temporal trends and spatial variability. We measured total nitrogen using elemental analysis and extracted the appoplastic free and the wall bound NH4+ of the lichens using a sequential elution method. The raw data was processed, Le. sampling sites were grouped, simple statistics were added and several formatted graphs were provided. As example, the variability of the model to distinct climate conditions is discussed.

NOx on different lichen functional groups
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This work was to collect all the information available on oxidized forms of nitrogen from the southern Portuguese monitoring stations at a spatial scale. The aim was relate the biodiversity obtained at a spatial scale with the concentrations of N in lichens, NOx in the monitoring stations and other elements in the source apportionment of N. Since there are only few monitoring stations a model of the impact of lichen biodiversity and of its levels of NOx in different regions was explored taking into account changes in the land-cover types (urban, industrial, road, rural, forest, etc) and on the land-use intensity (livestock density, etc). The results show that functional groups respond strongly to changes in N availability. In particular, the nitrophytic group is N limited and it does not respond to the variation of the oligotrophic species. These nitrophytic species, otherwise not abundant, become the dominant lichen group even under a N surplus. This occurs when the source of N was artificial aerosols (urban, industrial and road) or when the source of N was livestock or uncovered soil. Functional groups in a regional scale allowed us to locate the areas with altered N supply and impact on lichen biodiversity. Implications for the effect of N on lichen biodiversity and N loads in lichens in Mediterranean areas will be evaluated.