

## NEWS

---

2291

### **Environmental digest**

Read the latest environmental news including:

Recent legislation

Environmental quality

Chemical hazards

Public and occupational health

Research activity

## PAPERS

---

2298

### **Biomarkers of environmental contaminants in the coastal waters of Estonia (Baltic Sea): effects on eelpouts (*Zoarces viviparus*)**

Randel Kreitsberg,\* Arvo Tuvikene, Janina Baršienė,  
Nicolai Felix Fricke, Aleksandras Rybakovas,  
Laura Andreikėnaitė, Kateriina Rumvolt and Sirje Vilbaste

A multi-biomarker study of polycyclic aromatic hydrocarbons (PAHs) in the eastern Baltic Sea: a comparison of novel fish biomarkers (*e.g.* PAH metabolites in urine) at the study sites is presented.

---

2309

**Baseline element composition of foliose and fruticose lichens along the steep climatic gradient of SW Patagonia (Aisén Region, Chile)**

Fabrizio Monaci,\* Federica Fantozzi, Ricardo Figueroa, Oscar Parra and Roberto Bargagli

Samples of foliose (*Nephroma antarcticum*) and fruticose (*Usnea* sp.) lichens were collected across a steep climatic and vegetation gradient in a remote, almost pristine region of SW Chilean Patagonia.

---

2317

**Characterizing the intrinsic bioremediation potential of 1,4-dioxane and trichloroethene using innovative environmental diagnostic tools**

Sheau-Yun Dora Chiang,\* Rebecca Mora, William H. Diguisseppi, Greg Davis, Kerry Sublette, Phillip Gedalanga and Shaily Mahendra\*

This research unambiguously reveals the *in situ* biodegradation of 1,4-dioxane and TCE in an aerobic environment using novel environmental diagnostic tools.

---

2327

**Long-term changes in fish mercury levels in the historically impacted English-Wabigoon River system (Canada)**

Margaret R. Neff, Satyendra P. Bhavsar,\* George B. Arhonditsis, Rachael Fletcher and Donald A. Jackson

The English-Wabigoon River system in Northwestern Ontario, Canada, was one of the most heavily mercury-contaminated waterways in the world due to historical discharges in the 1960s from a chlor-alkali plant.

---

2338

**The impact of point source pollution on shallow groundwater used for human consumption in a threshold country**

Mercedes Cecilia Cruz, Dolores Gutiérrez Cacciabue, José F. Gil, Oscar Gamboni, María Soledad Vicente, Stefan Wuertz, Elio Gonzo and Verónica B. Rajal\*

Satellite images and multivariate analysis from environmental data were used to assess the pollution impact of point sources in a semi-rural area.

2350

**Modeling of land use and reservoir effects on nonpoint source pollution in a highly agricultural basin**

Yiping Wu and Shuguang Liu\*

Nonpoint source (NPS) pollution is tightly linked to land use activities that determine the sources and magnitudes of pollutant loadings to stream water. The sediment and nutrients trapping effects by reservoirs also deserve attention.

---

2362

**Removal of 17 $\alpha$ -ethinylestradiol from a sterile WC medium by the cyanobacteria *Microcystis novacekii***

Isabela Araujo Fioravante,\* Bruna Albergaria, Taciane Silveira Teodoro, S ergia Maria Starling Magalh es, Francisco Barbosa and Rodinei Augusti

The first report about the removal of 17 $\alpha$ -ethinylestradiol from a culture medium by a cyanobacterium species *via* a proved bioaccumulation mechanism.

---

2367

**Fingerprinting of petroleum hydrocarbons (PHC) and other biogenic organic compounds (BOC) in oil-contaminated and background soil samples**

Zhendi Wang,\* C. Yang, Z. Yang, B. Hollebone, C. E. Brown, M. Landriault, J. Sun, S. M. Mudge, F. Kelly-Hooper and D. G. Dixon

Naturally occurring biogenic organic compounds and petroleum hydrocarbons were quantitatively characterized and differentiated in oil-contaminated soils.

---

2382

**Distribution of Cd and As in organs and tissues of four marine mammal species stranded along the Italian coasts**

Antonio Bellante,\* Mario Sprovieri, Giuseppa Buscaino, Gaspare Buffa, Vincenzo Di Stefano, Daniela Salvagio Manta, Marco Barra, Francesco Filiciotto, Angelo Bonanno and Salvatore Mazzola

In this study concentrations of cadmium and arsenic were determined in tissues of four cetacean species from different geographical areas.

2392

**Quantifying the influence of EDTA on polymer nanoparticle deposition and retention in an iron-oxide-coated sand column**

Xinyao Yang,\* Dongxu Liang and Shihuai Deng

This study presented an approach for quantifying the influence of EDTA on nanoparticle deposition in iron-oxide-coated porous medium.

---

2399

**The use of  $\delta^{15}\text{N}$  signatures of translocated macroalgae to map coastal nutrient plumes: improving species selection and spatial analysis of metropolitan datasets**

M. Fernandes,\* S. Bengler, S. K. Sharma, S. Gaylard, T. Kildea, S. Hoare, M. Braley and A. D. Irving

Macroalgae act as time-integrative bioindicators of anthropogenic nitrogen inputs in coastal systems, and when translocated over large spatial scales can be used to infer the spatial footprint of point sources.

---

2411

**Design and validation of a passive deposition sampler**

Stephanie A. Einstein,\* Chang-Ho Yu, Gediminas Mainelis, Lung Chi Chen, Clifford P. Weisel and Paul J. Lioy

Schematic of the ELDS base showing the diameters of the components.

---

2421

**A comparison of nutrient losses from two simulated pastureland management scenarios**

Rohith K. Gali, Michelle L. Soupir\* and Saied Mostaghimi

Comparison of two simulated grazing management scenarios found little effect of vegetation on the removal of dissolved nutrients from runoff.

2430

---

**Evaluation of physical sampling efficiency for cyclone-based personal bioaerosol samplers in moving air environments**

Wei-Chung Su,\* Alexander D. Tolchinsky, Bean T. Chen, Vladimir I. Sigaev and Yung Sung Cheng

The need to determine occupational exposure to bioaerosols has notably increased in the past decade, especially for microbiology-related workplaces and laboratories.

2438

---

**Soil organic carbon sequestration as affected by afforestation: the Darab Kola forest (north of Iran) case study**

Yahya Kooch, Seyed Mohsen Hosseini, Claudio Zaccone,\* Hamid Jalilvand and Seyed Mohammad Hojjati

This study reports results on soil organic C sequestration in three 21 year old stands of red pine, oak and maple.

2447

---

**Essential and toxic elements in infant foods from Spain, UK, China and USA**

Ángel A. Carbonell-Barrachina,\* Amanda Ramírez-Gandolfo, Xiangchun Wu, Gareth J. Norton, Francisco Burló, Claire Deacon and Andrew A. Meharg

Spanish gluten-free rice, cereals with gluten, and pureed baby foods were analysed for essential macro-elements (Ca and Na), essential trace elements (Fe, Cu, Zn, Mn, Se, Cr, Co and Ni) and non-essential trace elements (As, Pb, Cd and Hg) using ICP-MS and AAS.

2456

---

**Assessment of pumped mercury vapour adsorption tubes as passive samplers using a micro-exposure chamber**

Richard J. C. Brown,\* Melia K. Burdon, Andrew S. Brown and Ki-Hyun Kim

For the first time mass-produced pumped mercury vapour adsorption tubes have been assessed as passive samplers.

2464

**Comparative assessments of VOC emission rates and associated health risks from wastewater treatment processes**

Wen-Ben Yang, Wei-Hsiang Chen,\* Chung-Shin Yuan,\* Jun-Chen Yang and Qing-Liang Zhao

This study investigated and compared the emission rates of VOCs of concern and the associated health risks by inhalation intake in wastewater treatment processes, with respect to the effects of treatment technologies, VOC species, and seasonal variation.

---

2475

**Sedimentary record of polycyclic aromatic hydrocarbons in a sediment core from a maar lake, Northeast China: evidence in historical atmospheric deposition**

Yu-Feng Guan, Jian-Lin Sun, Hong-Gang Ni and Jian-Yang Guo\*

The historical atmospheric deposition of PAHs in a maar lake, Northeast China was studied to identify the possible emission source of sediment PAHs.

---

2482

**Concentrations of organophosphate esters and brominated flame retardants in German indoor dust samples**

Sandra Brommer, Stuart Harrad,\* Nele Van den Eede and Adrian Covaci

This study reports concentrations of organophosphate esters (OPEs) and polybrominated diphenyl ethers (PBDEs) in indoor dust samples from Germany and shows cars and offices to be significantly more contaminated with OPEs than PBDEs.

---

2488

**Traffic emission factors of ultrafine particles: effects from ambient air**

Sara Janhäll,\* Peter Molnar and Mattias Hallquist

Emission factors of ultrafine particles related to traffic and ambient air, calculated at rooftop, improving modeling of urban particle concentrations.

2497

**A study on the effects of lead, cadmium and phosphorus on the lead and cadmium uptake efficacy of *Viola baoshanensis* inoculated with arbuscular mycorrhizal fungi**

Wei-liang Zhong, Jin-tian Li, Ya-ting Chen, Wen-sheng Shu and Bin Liao\*

AM fungi-mediated uptake of Pb and Cd by *Viola baoshanensis* was affected by Pb, Cd, and phosphorus availability.

---

2505

**Use of the Multispecies Freshwater Biomonitor to assess behavioral changes of *Poecilia reticulata* (Cyprinodontiformes: Poeciliidae) and *Macrobrachium lanchesteri* (Decapoda: Palaemonidae) in response to acid mine drainage: laboratory exposure**

Azmah Mohti,\* Mohammad Shuhaimi-Othman and Almut Gerhardt

The behavioral responses of guppy *Poecilia reticulata* and prawn *Macrobrachium lanchesteri* individuals exposed to acid mine drainage were monitored online with a Multispecies Freshwater Biomonitor™ (MFB).

---

2512

**Statistical modeling of crystalline silica exposure by trade in the construction industry using a database compiled from the literature**

Jean-François Sauvé, Charles Beaudry, Denis Bégin, Chantal Dion, Michel Gérin and Jérôme Lavoué\*

We present the statistical modeling of crystalline silica measurements from a literature-based exposure database to predict work-shift concentrations for 10 construction trades and the effects of associated exposure determinants.

---

2521

**Dissipation studies of fentrazamide (YRC-2388) in soil under anaerobic condition**

Shishir Tandon,\* Atul Pujari and N. K. Sand

Dissipation of fentrazamide in soil and water under flooded (anaerobic) conditions was studied.