



## Bulletin de veille du réseau d'écotoxicologie terrestre et aquatique



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Christian Mougin (UMR 1402 EcoSys), Sonia Grimbuhler (UMR 1463 ITAP), Soizic Morin (UR 1454 EABX)  
et Pascale Karmasyn-Veyrines (DipSO)

Destinataires : les membres de la liste : [ecotox@inrae.fr](mailto:ecotox@inrae.fr)

### Edito

Voici notre 69ème bulletin de veille, que nous espérons toujours informatif !

Nous nous rappelons que les fiches thématiques sont désormais directement consultables et téléchargeables sur le site ECOTOX : <https://ecotox.hub.inrae.fr/productions/fiches-thematiques>

Nous vous rappelons notre PCI pour la soumission de vos preprints : <https://ecotoxenvchem.peercommunityin.org/>

N'oubliez pas de nous transmettre les informations que vous souhaitez diffuser, notamment vos publications que nous pourrions avoir oubliées. En raison du dysfonctionnement de certaines requêtes, le nombre de références est un peu réduit dans ce numéro.

L'équipe vous souhaite une bonne lecture de ce bulletin !

Contact : [veille-ecotox@inrae.fr](mailto:veille-ecotox@inrae.fr)

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- TFA : Contamination généralisée de l'eau par un produit de dégradation non réglementé des pesticides PFAS !
- Air pollution in Europe: 2024 reporting status under the National Emission reduction Commitments Directive

## REGLEMENTATION

- Retrait de l'approbation de la substance active «acibenzolar-S-méthyle»
- Modification des conditions d'approbation de la substance active «métalaxyl-M»
- Autorisation de l'Union pour la famille de produits biocides dénommée «Saniswiss H2O2»
- Teneurs maximales pour certains contaminants dans les denrées alimentaires : modification et rectification du règlement
- Assignation à des États membres de l'évaluation de la substance active «deltaméthrine» aux fins de la procédure de renouvellement : modification du règlement
- LMR de fenazaquin, mepiquat and propamocarb dans ou sur certains produits
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- LMR de benzovindiflupyr, chlorantraniliprole, emamectin, quinclorac, spiromesifen, and triflumuron dans ou sur certains produits
- LMR de dithianon dans ou sur certains produits
- LMR de prothioconazole dans et sur certains produits
- Approval periods of the active substances dodemorph, fatty acids C8-C10 methyl esters, lauric acid, methyl octanoate, methyl decanoate, oleic acid and *Trichoderma atroviride* (formerly *T. harzianum*) strain IMI 206040
- LMR applicables aux résidus de dithianon présents dans ou sur certains produits
- LMR de prothioconazole présents dans ou sur certains produits

## AVIS / EXPERTISES / NORMES

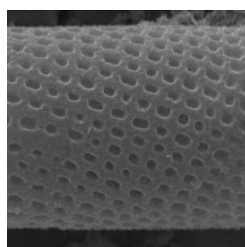
- Antiparasitaires pour équidés : les bons réflexes à adopter
- Comment prendre en compte la toxicité des mélanges ? De nouvelles approches pour l'homologation et le monitoring

## DROIT ET POLITIQUE DE L'ENVIRONNEMENT

- La réduction de l'emploi des produits phytopharmaceutiques par le développement de l'agriculture de précision
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- Le Conseil de l'UE valide les directives Déchets, Sols et Allégations environnementales
- L'utilisation des pesticides en France
- Uruguay signs, begins project to transform its agricultural system
- AAP FranceAgrimer pour des matériels concourant à la réduction de l'utilisation des produits phytopharmaceutiques
- FARM programme aims to promote safer alternatives to highly hazardous pesticides by promoting financial incentives

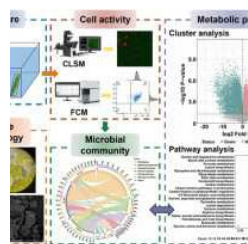
## REVUE DE PRESSE

- {La mise à jour des polluants de l'eau de l'UE passe à l'étape suivante}
- Dans l'affaire des « polluants éternels », la justice suspend l'extension des activités de Daikin à Lyon
- EPA and Partners Announce Winner of Water Toxicity Sensor Challenge
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- Pesticides, produits phytosanitaires : que disent ces termes de ceux qui les emploient ?
- « Plasticulture » : quand le plastique remplace la paille dans les champs
- Pesticides : leur toxicité sur les abeilles sauvages reste sous-estimée
- Comment fonctionne Reach, règlement européen qui encadre les substances chimiques ?
- Veterinary antimicrobials in Europe's environment: a One Health perspective
- Victoire pour la santé et l'environnement : la proposition de loi sur les PFAS est adoptée au Sénat !
- Le casse-tête de la surveillance des PFAS dans les eaux
- Déclassement d'un métabolite du chlorothalonil par l'Anses, un pesticide très présent dans l'eau potable
  
- New Study – Chemical exposure can lead to higher risk of metabolic syndrome in children
- Produits phytosanitaires : les EPI efficaces pour réduire les risques liés à leur exposition selon une étude
- EU Pesticide Committee neglects health and environment
- UNAF - Nouveau Plan Ecophyto : des impacts désastreux sur les pollinisateurs
- Pesticides : une nouvelle plateforme pour permettre aux riverains exposés de mener une action en justice
- [Protection insecticide] Une ONG demande de suspendre la dérogation de Movento pour les betteraviers



## Taxonomy of epilithic diatoms and teratological forms under the presence of metals in surface sediment

Authors: Amaral MWW, Medeiros G, Daufenbach V et al. Source: PHYTOTAXA 647:237-273, 2024, DOI 10.11646/phytotaxa.647.3.3 Abstract: Epilithic diatom species in eight sampling sites of the Cascavel River, Southern Brazil, were taxonomically analyzed. The studied streams are located in a predominantly urban micro-watershed, with dystroferric red latosol (rich in Fe and Al), being characterized by distinct metals, predominantly acidic pH, and high conductivity...



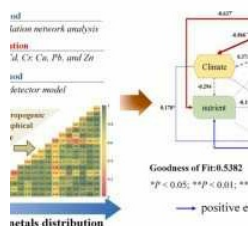
## Short-term exposure to triclocarban alters microbial community composition and metabolite profiles in freshwater biofilms

Authors: Yan Y, Qian J, Liu Y et al. Source: CHEMOSPHERE 362:142674, 2024, DOI https://doi.org/10.1016/j.chemosphere.2024.142674 Abstract: Triclocarban (TCC), an emerging contaminant in water environments, its effects on freshwater biofilms remain insufficiently understood. This study investigates the effects of TCC exposure (at concentrations of 10 µg/L and 10 mg/L) on mature freshwater biofilms...



## Assessment of microbial communities from cold mine environments and subsequent enrichment, isolation and characterization of putative antimony- or copper-metabolizing microorganisms

Authors: Prieto-Fernández F, Lambert S, Kujala K Source: FRONTIERS IN MICROBIOLOGY 15:1386120, 2024, DOI 10.3389/fmicb.2024.1386120 Abstract: Mining activities, even in arctic regions, create waste materials releasing metals and metalloids, which have an impact on the microorganisms inhabiting their surroundings. Some species can persist in these areas through tolerance to meta(loid)s via, e.g., metabolic transformations. Due to the interaction between microorganisms and meta(loid)s, interest in the investigation of microbial communities and their possible applications (like bioremediation or biomining) has increased. The main goal of the present study was to identify, isolate, and characterize microorganisms, from subarctic mine sites, tolerant to the metalloid antimony (Sb) and the metal copper (Cu). During both summer and winter, samples were collected from Finnish mine sites (site A and B, tailings, and site C, a water-treatment peatland) and environmental parameters were assessed...



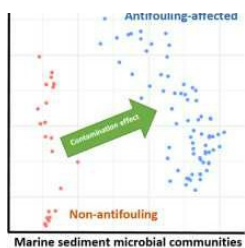
## Quantitative effects of anthropogenic and natural factors on the spatial distribution of heavy metals and bacterial communities in sediments of the Pearl River Delta

Authors: Li YJ, Ma JW, Shen XY et al. Source: ENVIRONMENTAL TECHNOLOGY & INNOVATION 35:103648, 2024, DOI 10.1016/j.eti.2024.103648 Abstract: Heavy metal (HM) contamination of aquatic ecosystems has increasingly posed threats to ecological balance and health. Analysis of sediments to determine water pollution sources is widely reported, while quantitative research about the effects of environmental factors on the distribution of HMs and relevant microbial communities is limited. Here, we investigated 6 kinds of HM pollution characteristics (As, Cd, Cr, Cu, Pb, and Zn) of the Pearl River Delta (PRD) by collecting surface sediment samples around the main stream and estuary and explored the influencing factors with a geographical detector method (GDM)...



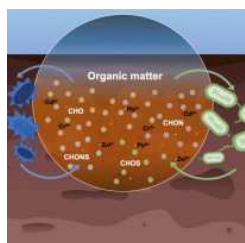
## An approach to evaluating seasonal responses to acute toxicity of antibiotic nitrofurazone on periphytic ciliated protist communities in marine environments

Authors: Ali A, Wang N, Wang QL et al. Source: EUROPEAN JOURNAL OF PROTISTOLOGY 94:126081, 2024, DOI 10.1016/j.ejop.2024.126081 Abstract: Periphytic protists including ciliates are the primary components of microbial communities in which they play a vital role in the progression of food webs by moving resources from lower to higher trophic levels. However, the toxic effects of veterinary antibiotics on periphytic protists across four seasons are minimally understood. Therefore, in this study, a 1-year survey was conducted with the antibiotic nitrofurazone (NFZ) applied at concentrations of 0.0, 1.5, 3.0, 6.0, and 12.0 mg/L. Samples of protist communities were collected using microscope glass slides during four seasons in the coastal waters of the Yellow Sea, Qingdao, northern China...



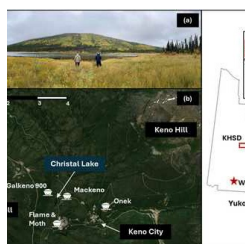
## Microplastic-antifouling paint particle contamination alters microbial communities in surrounding marine sediment

Authors: Tagg AS, Sperlea T, Hassenrück C et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 926:171863, 2024, DOI 10.1016/j.scitotenv.2024.171863 Abstract: Paint used to coat surfaces in aquatic environments often contain biocides to prevent biofouling, and as these coatings degrade, antifouling paint particles (APPs) end up in aquatic, and especially marine, sediments. However, it is currently unclear what further influence APPs in the sediment have on biotic communities or processes. This study investigates how a variety of commercially-available APPs effect the marine microbial community by spiking different laboratory-manufactured APPs to sediment...



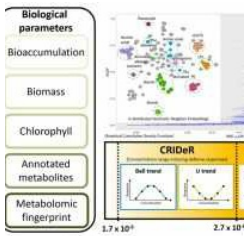
## Heavy metal induced shifts in microbial community composition and interactions with dissolved organic matter in coastal sediments

Authors: Wang Y, Hu YX, Liu YT et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 927:172003, 2024, DOI 10.1016/j.scitotenv.2024.172003 Abstract: Heavy metals can impact the structure and function of coastal sediment. The dissolved organic matter (DOM) pool plays an important role in determining both the heavy metal toxicity and microbial community composition in coastal sediments. However, how heavy metals affect the interactions between microbial communities and DOM remains unclear. Here, we investigated the influence of heavy metals on the microbial community structure (including bacteria and archaea) and DOM composition in surface sediments of Beibu Gulf, China...



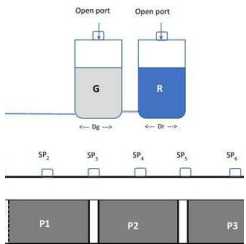
## Tracking the long-term limnological impacts of silver mining near Keno City (Yukon, subarctic Canada)

Authors: Jones EA, Michelutti N, Would JA et al. Source: JOURNAL OF PALEOLIMNOLOGY Early Access, DOI 10.1007/s10933-024-00324-0 Abstract: Mining in northern Canada has been known to cause major environmental problems; however, historical monitoring data are scarce or non-existent. Here, we use a multi-proxy (metals, bioindicators, pigments) paleolimnological approach to track the impacts of mining activity near Keno City, on the traditional land of the First Nation of Na-Cho Nyäk Dun, in central Yukon (Canada)...



## Meta-metabolomic responses of river biofilms to cobalt exposure and use of dose-response model trends as an indicator of effects

Authors: Colas S, Marie B, Milhe-Poutingon M et al. Source: JOURNAL OF HAZARDOUS MATERIALS 470:134099, 2024, DOI 10.1016/j.jhazmat.2024.134099 Abstract: The response of the meta-metabolome is rarely used to characterize the effects of contaminants on a whole community. Here, the meta-metabolomic fingerprints of biofilms were examined after 1, 3 and 7 days of exposure to five concentrations of cobalt (from background concentration to  $1 \times 10^{-5}$  M) in aquatic microcosms. The untargeted metabolomic data were processed using the DRomics tool to build dose-response models and to calculate benchmark-doses...



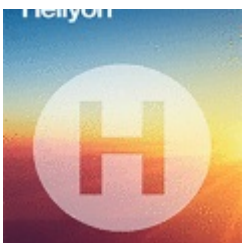
## Dynamic and structural response of a multispecies biofilm to environmental perturbations induced by the continuous increase of benzimidazole fungicides in a permeable reactive biobarrier

Authors: Alvarado-Gutierrez ML, Ruiz-Ordaz N, Galíndez-Mayer J et al. Source: JOURNAL OF ENVIRONMENTAL HEALTH SCIENCE AND ENGINEERING Early Access, DOI 10.1007/s40201-024-00903-3 Abstract: This work explores the dynamics of spatiotemporal changes in the taxonomic structure of biofilms and the degradation kinetics of three imidazole group compounds: carbendazim, methyl thiophanate, and benomyl by a multispecies microbial community attached to a fixed bed horizontal tubular reactor (HTR). This bioreactor mimics a permeable reactive biobarrier, which helps prevent the contamination of water bodies by pesticides in agricultural wastewater. To rapidly quantify the microbial response to crescent loading rates of benzimidazole compounds, a gradient system was used to transiently raise the fungicide volumetric loading rates, measuring the structural and functional dynamics response of a microbial community in terms of the volumetric removal rates of the HTR entering pollutants...

## Elevated Fungicide and Nutrient Concentrations Change Structure but not Function of Aquatic Microbial Communities

Authors: Goncalves S, Feckler A, Pollitt A et al. Source: ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY Early Access, DOI 10.1002/etc.5863 Abstract: Leaf-associated microorganisms are subjected to anthropogenic pressures, such as the increased exposure to nutrients and fungicides associated with land-use change. We assessed the sensitivity of leaf-associated microbial communities with differing exposure histories, namely, from pristine streams, and streams impacted by wastewater and agricultural run-off (vineyards). In the laboratory, microbial communities were exposed to elevated nutrient ( $\text{NO}_3\text{-N}$ : 0.2-18.0 mg/L,  $\text{PO}_4\text{-P}$ : 0.02-1.8 mg/L) and fungicide concentrations (sum concentration 0-300  $\mu\text{g/L}$ ) in a fully crossed 3 x 4 x 4-factorial design over 21 days. Leaf decomposition and exoenzyme activity were measured as functional endpoints, and fungal community composition and microbial abundance served as structural variables...

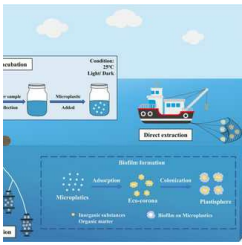
## ERA / PUBLICATIONS SCIENTIFIQUES / PLASTIQUES



## A screening method for plastic-degrading fungi

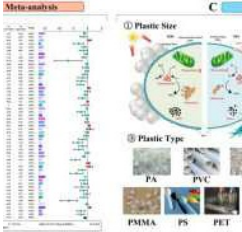
Authors: Cernosa A, Cortizas AM, Traoré M et al. Source: HELIYON 10:e31130, 2024, DOI 10.1016/j.heliyon.2024.e31130 Abstract: The growing amount of plastic waste requires new ways of disposal or recycling. Research into the biodegradation of recalcitrant plastic polymers is gathering pace. Despite some progress, these efforts have not yet led to technologically and economically viable applications. In this study, we show that respirometric screening of environmental fungal isolates in combination w...





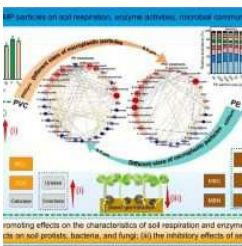
## The Aquatic Plastisphere: Methodology, Biofilm Formation Mechanism, and Microbial Diversity

Authors: Huang HD, Wang F, Ma S et al. Source: REVIEWS OF ENVIRONMENTAL CONTAMINATION AND TOXICOLOGY 262:15, 2024, DOI 10.1007/s44169-024-00063-3 Abstract: From 2019 to 2060, the amount of plastic accumulated in the aquatic environment is expected to increase from 140 million tons to 493 million tons. The continuous release of microplastics (MPs) into the environment has negatively impacted aquatic ecosystems. [...] In this paper, we review the recent works on microbes in the plastisphere, describe m...



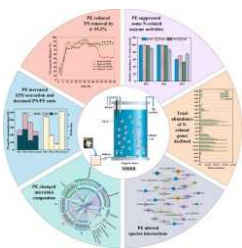
## Meta-analysis for systematic review of global micro/nano-plastics contamination versus various freshwater microalgae: Toxicological effect patterns, taxon-specific response, and potential eco-risks

Authors: Guo ZH, Li JM, Zhang ZQ Source: WATER RESEARCH 258:121706, 2024, DOI 10.1016/j.watres.2024.121706 Abstract: Micro/nano-plastics (MNPs), as emerging persistent pollutants, are threatening freshwater ecosystems worldwide. Microalgae are important primary producers at the base of trophic level and susceptible to MNPs contamination, possibly resulting in further contamination in higher trophic levels and water quality. This study conducted a systematic review of 1071 observations from 63 publi...



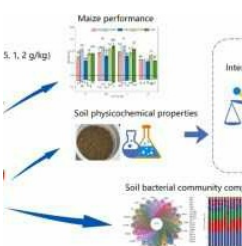
## Effects of different sizes of microplastic particles on soil respiration, enzyme activities, microbial communities, and seed germination

Authors: Gao B, Gao FY, Zhang XF et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 933:173100, 2024, DOI 10.1016/j.scitotenv.2024.173100 Abstract: Microplastics (MPs) are emerging pollutants of terrestrial ecosystems. The impacts of MP particle size on terrestrial systems remain unclear. The current study aimed to investigate the effects of six particle sizes (i.e., 4500, 1500, 500, 50, 5, and 0.5  $\mu\text{m}$ ) of polyethylene and polyvinyl chloride on soil respiration, enzyme activity, bacteria, fungi, protis...



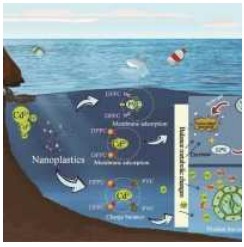
## Insight into effect of polyethylene microplastic on nitrogen removal in moving bed biofilm reactor: Focusing on microbial community and species interactions

Authors: Wu T, Ding J, Wang S et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 932:173033, 2024, DOI 10.1016/j.scitotenv.2024.173033 Abstract: Microplastics (MPs) pollution has emerged as a global concern, and wastewater treatment plants are one of the potential sources of MPs in the environment. However, the effect of polyethylene MPs (PE) on nitrogen (N) removal in moving bed biofilm reactor (MBBR) remains unclear. We hypothesized that PE would affect N removal in MBBR by influencing its microbial...



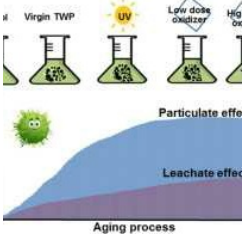
## Microplastics change soil properties, plant performance, and bacterial communities in salt-affected soils

Authors: Xu S, Zhao R, Sun J et al. Source: JOURNAL OF HAZARDOUS MATERIALS 471:134333, 2024, DOI 10.1016/j.jhazmat.2024.134333 Abstract: Microplastics are emerging contaminants found globally. However, their effects on soil-plant systems in salt-affected habitats remain unknown. Here, we examined the effects of polyethylene and polylactic acid on soil properties, maize performance, and bacterial communities in soils with different salinity levels...



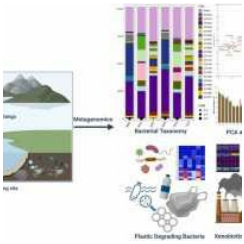
## Simultaneous exposure to nanoplastics and cadmium mitigates microalgae cellular toxicity: Insights from molecular simulation and metabolomics

Authors: Li HK, Lin LH, Liu H et al. Source: ENVIRONMENT INTERNATIONAL 186:108633, 2024, DOI 10.1016/j.envint.2024.108633 Abstract: In the severe pollution area of nanoplastics (NPs) and cadmium ions ( $Cd^{2+}$ ), the joint effects of their high environmental concentrations on primary producers may differ from those of low environmental doses. Thus, we investigated the physiological changes, cell morphology, molecular dynamic simulation, phenotypic interactions, and metabolomics responses of *C. pyreno...*



## Aging increases the particulate- and leachate-induced toxicity of tire wear particles to microalgae

Authors: Lv M, Meng FY, Man MS et al. Source: WATER RESEARCH 256:121653, 2024, DOI 10.1016/j.watres.2024.121653 Abstract: The toxic effects of tire wear particles (TWP) on organisms have attracted widespread concerns over the past decade. However, the underlying toxicity mechanism of TWPs, especially aged TWPs to marine microalgae remains poorly understood. This study investigated the physiological and metabolic responses of *Phaeodactylum tricornutum* to different concentrations of TWPs (Experiment...

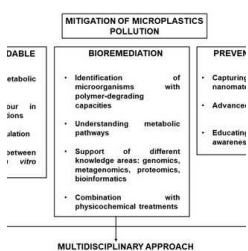


## Metagenomic landscape of sediments of river Ganga reveals microbial diversity, potential plastic and xenobiotic degradation enzymes

Authors: Rout AK, Dixit S, Tripathy PS et al. Source: JOURNAL OF HAZARDOUS MATERIALS 471:134377, 2024, DOI 10.1016/j.jhazmat.2024.134377 Abstract: The Ganga is the largest river in India, serves as a lifeline for agriculture, drinking water, and religious rites. However, it became highly polluted due to the influx of industrial wastes and untreated sewages, leading to the decline of aquatic biodiversity. This study investigated the microbial diversity and plastic-xenobiotic degrading enzymes of six...

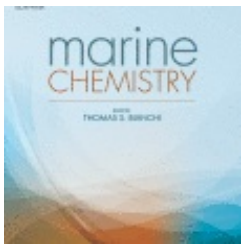
## Microplastics mitigate the effects of glyphosate on the shikimic acid pathway enzymes in cyanobacteria

Authors: Piro A, Nisticò DM, Oliva D, Mazzuca S Source: PLANT BIOSYSTEMS Early Access, DOI 10.1080/11263504.2024.2357291 Abstract: Microplastics, an environmental contaminant, can directly harm aquatic organisms and alter the toxicity and availability of other pollutants. The herbicide glyphosate (N-(phosphonomethyl) glycine) exerts its toxicity by inhibiting 5-enol-pyruvyl-shikimate-3-phosphate synthase (EPSPS), a key enzyme belonging to shikimic acid pathway that leads to the biosynthesis of arom...



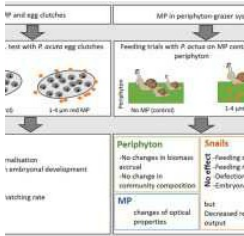
## Recent advances in the relationships between biofilms and microplastics in natural environments

Authors: Ventura E, Marín A, Gámez-Pérez J, Cabedo L Source: WORLD JOURNAL OF MICROBIOLOGY & BIOTECHNOLOGY 40:220, 2024, DOI 10.1007/s11274-024-04021-y Abstract: Plastic pollution in the form of microplastics (MPs), poses a significant threat to natural ecosystems, with detrimental ecological, social, and economic impacts. This review paper aims to provide an overview of the existing research on the interaction between microbial biofilms and MPs in natural environments...



## Microbial interactions with microplastics: Insights into the plastic carbon cycle in the ocean

Authors: Ziervogel K, Kehoe S, De Jesus AZ et al. Source: MARINE CHEMISTRY 262:104395, 2024, DOI 10.1016/j.marchem.2024.104395 Abstract: The fate of microplastics (MPs) in the ocean is mostly driven by (i) photo-oxidation to smaller particles and dissolved constituents, which fuel the dissolved organic carbon pool (plastic-derived DOC, pDOC), and (ii) interactions with organic matter forming sinking aggregates (marine plastic snow). Two separate laboratory experiments were conducted to investigate ...



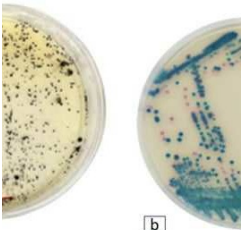
## Fate and effects of microplastic particles in a periphyton-grazer system

Authors: Merbt SN, Kroll A, Sgier L et al. Source: ENVIRONMENTAL POLLUTION 347:123798, 2024, DOI 10.1016/j.envpol.2024.123798 Abstract: In the aquatic environment, microplastic particles (MP) can accumulate in microbial communities that cover submerged substrata, i.e. in periphyton. Despite periphyton being the essential food source for grazers in the benthic zones, MP transfer from periphyton to benthic biota and its ecotoxicological consequences are unknown. Therefore, in this study, we investiga...



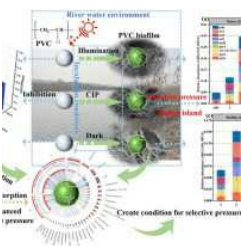
## Exploring changes in microplastic-associated bacterial communities with time, location, and polymer type in Liusha Bay, China

Authors: Wang T, Lu FL, Yang CY et al. Source: MARINE ENVIRONMENTAL RESEARCH 198:106525, 2024, DOI 10.1016/j.marenvres.2024.106525 Abstract: Microplastics have become a widespread concern within marine environments and are particularly evident in aquaculture regions that are characterized by plastic accumulation. This study employed 16 S rDNA sequencing to investigate the dynamic succession of microbial communities colonizing polyvinyl chloride, polystyrene, and polyamide microplastics in seawater,...



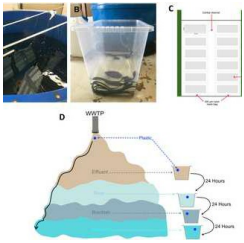
## Emerging Issues on Antibiotic-Resistant Bacteria Colonizing Plastic Waste in Aquatic Ecosystems

Authors: Ferheen I, Spurio R, Marcheggiani S Source: ANTIBIOTICS-BASEL 13:339, 2024, DOI 10.3390/antibiotics13040339 Abstract: Antibiotic-resistant bacteria adhesion onto plastic substrates is a potential threat to environmental and human health. This current research investigates the prevalence of two relevant human pathogens, Staphylococcus spp. and Klebsiella spp., and their sophisticated equipment of antibiotic-resistant genes, retrieved from plastic substrates submerged into an inland water body...



## Regulation of ARGs abundance by biofilm colonization on microplastics under selective pressure of antibiotics in river water environment

Authors: Zheng ZJ, Wang XL, Zhang WZ et al. Source: JOURNAL OF ENVIRONMENTAL MANAGEMENT 355:120402, 2024, DOI 10.1016/j.jenvman.2024.120402 Abstract: Interactions of microplastics (MPs) biofilm with antibiotic resistance genes (ARGs) and antibiotics in aquatic environments have made microplastic biofilm an issue of keen scholarly interest. The process of biofilm formation and the degree of ARGs enrichment in the presence of antibiotic-selective pressure and the impact on the microbial community need...



## Microbial communities colonising plastics during transition from the wastewater treatment plant to marine waters

Authors: Tulloch CL, Bargiela R, Williams GB et al. Source: ENVIRONMENTAL MICROBIOME 19:27, 2024, DOI 10.1186/s40793-024-00569-2 Abstract: Plastics pollution and antimicrobial resistance (AMR) are two major environmental threats, but potential connections between plastic associated biofilms, the 'plastisphere', and dissemination of AMR genes are not well explored. We conducted mesocosm experiments tracking microbial community changes on plastic surfaces transitioning from wastewater effluent to mar...

## PESTICIDES ET SANTE DES AGRICULTEURS

### Widespread occurrence of pesticides in low-income housing

Authors: Vaezafshar S, Siegel JA, Jantunen L, Diamond ML Source: JOURNAL OF EXPOSURE SCIENCE AND ENVIRONMENTAL EPIDEMIOLOGY 00665-y, 2024, DOI 10.1038/s41370-024-00665-y Abstract: Low socioeconomic status (SES) residents living in social housing, which is subsidized by government or government-funded agencies, may have higher exposures to pesticides used in indoor residences since pesticides are applied due to structural deficiencies, poor maintenance, etc. To estimate exposure of residents in low-...

### Occurrence and distribution of pesticides and transformation products in ambient air in two European agricultural areas

Authors: Debler F, Abrantes N, Harkes P, Campos I et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 940: 173705, 2024, DOI 10.1016/j.scitotenv.2024.173705 Abstract: Pesticides present a significant risk for both humans and the environment. However, quantitative data for a broad range of airborne pesticides in agricultural areas are missing. During or after the application, pesticides can reach the atmosphere and partition between the particulate and gaseous phase. As part of the EU project SPRINT, we...

### The association between children's exposure to pesticides and asthma, wheezing, and lower respiratory tract infections. A systematic review and meta-analysis

Authors: Keleb A, Daba C, Asmare L, Bayou FD et al. Source: FRONTIERS IN PUBLIC HEALTH 12: 1402908, 2024, DOI 10.3389/fpubh.2024.1402908 Abstract: Exposure to pesticides is a global public health problem, especially for children. Its association with chronic respiratory disease among children has attracted considerable attention, but the existing evidence remains inconclusive and cannot be certain. Therefore, this systematic review and meta-analysis aim to determine the global pooled effect size of...

### Pesticide exposure and increased breast cancer risk in women population studies

Authors: Panis C, Lemos B Source: SCIENCE OF THE TOTAL ENVIRONMENT 933: 172988, 2024, DOI 10.1016/j.scitotenv.2024.172988 Abstract: Pesticide exposure is emerging as a risk factor for various human diseases. Breast cancer (BC) is a multifactorial disease with known genetic and non-genetic risk factors. Most BC cases are attributable to non-genetic risk factors, with a history of adverse environmental exposures playing a significant role. Pesticide exposure can occur at higher levels in female popula...

## **Pesticide exposure and chronic respiratory diseases**

Authors: Jestin-Guyon N, Raheison-Semjen C  
Source: REVUE DES MALADIES RESPIRATOIRES 41(5): 343-371, 2024, DOI 10.1016/j.rmr.2024.03.004  
Abstract: Pesticides are used worldwide, mainly in agriculture as a means of controlling pests and protecting crops. That said, the entire world population is ultimately subject to pesticide exposure (consumption of fruits and vegetables, living near treated fields . . .), with varying degrees of toxicity involved. In recent decades, epidemiological studies have c...

## **Glyphosate presence in human sperm: First report and positive correlation with oxidative stress in an infertile French population**

Authors: Vasseur C, Serra L, El Balkhi S, Lefort G et al.  
Source: ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY 278: 116410, 2024, DOI 10.1016/j.ecoenv.2024.116410  
Abstract: Environmental exposure to endocrine disruptors, such as pesticides, could contribute to a decline of human fertility. Glyphosate (GLY) is the main component of Glyphosate Based Herbicides (GBHs), which are the most commonly herbicides used in the world. Various animal model studies demonstrated its reprotoxicity. In Europe, GLY autho...

## **Exposome and Metabolome Analysis of Sugarcane Workers Reveals Predictors of Kidney Injury**

Authors: Stem AD, Brindley, S, Rogers KL, Salih A et al.  
Source: KIDNEY INTERNATIONAL REPORTS 9(5): 1458-1472, 2024, DOI 10.1016/j.ekir.2024.01.060  
Abstract: Sugarcane workers are exposed to potentially hazardous agrochemicals, including pesticides, heavy metals, and silica. Such occupational exposures present health risks and have been implicated in a high rate of kidney disease seen in these workers. To investigate potential biomarkers and mechanisms that could explain chronic kidney disease (CKD)...

## **Risk perception and use of personal protective equipment (PPE) in pesticide use: does risk shape farmers' safety behavior?**

Authors: Tsakiris P, Damalas CA, Koutroubas S  
Source: INTERNATIONAL JOURNAL OF ENVIRONMENTAL HEALTH RESEARCH, 2359076, 2024, DOI 10.1080/09603123.2024.2359076  
Abstract: Risk perception and use of personal protective equipment (PPE) in pesticide use were studied in 109 farmers of northern Greece. Farmers differed in the levels of pesticide risk perception, with 26.6% showing very low and low levels, 34.9% showing moderate levels, and 38.5% showing high and very high levels. Pesticide risk perceptio...

## **Urinary biomonitoring of glyphosate exposure among male farmers and nonfarmers in the Biomarkers of Exposure and Effect in Agriculture (BEEA) study**

Authors: Chang VC, Ospina M, Xie S, Andreotti G et al.  
Source: ENVIRONMENT INTERNATIONAL 187: 108644, 2024, DOI 10.1016/j.envint.2024.108644  
Abstract: Glyphosate is the most widely applied herbicide worldwide. Glyphosate biomonitoring data are limited for agricultural settings. We measured urinary glyphosate concentrations and assessed exposure determinants in the Biomarkers of Exposure and Effect in Agriculture (BEEA) study. We selected four groups of BEEA participants based on self-reported pesti...

## **Spray drift in field crops: A dataset to analyse the influence of air induction nozzles, hedges, and their combination on the reduction of sedimentary drift, aerial drift and exposure of bystanders**

Authors: Perriot B, Pasquier D, Hudebine Y, Verpont F et al.  
Source: DATA BRIEF 54:110366, 2024, DOI 10.1016/j.dib.2024.110366  
Abstract: n 2021 and 2022, the national and cross-sector project CAPRIV funded by the French Ministry of Agriculture, made it possible to assess the influence of application techniques associated or not with a hedge or an anti-drift net on spray drift and bystander exposure. The acronym CAPRIV stands for "Concilier l'application des PPP et la protection des riverains" (Reco...

## **Epigenetic processes involved in response to pesticide exposure in human populations: a systematic review and meta-analysis**

Authors: Rohr P, Karen S, Francisco LFV, Oliveira MA et al. Source: ENVIRONMENTAL EPIGENETICS 10(1): dvae005, 2024, DOI 10.1093/eep/dvae005 Abstract: In recent decades, the use of pesticides in agriculture has increased dramatically. This has resulted in these substances being widely dispersed in the environment, contaminating both exposed workers and communities living near agricultural areas and via contaminated foodstuffs. In addition to acute poisoning, chronic exposure to pesticides can lead t...

## **Application and demonstration of meso-activity exposure factors to advance estimates of incidental soil ingestion among agricultural workers**

Authors: Lupolt SN, Kim BF, Agnew J, Ramachandran G et al. Source: JOURNAL OF EXPOSURE SCIENCE AND ENVIRONMENTAL EPIDEMIOLOGY, 2024, DOI <https://doi.org/10.1038/s41370-024-00671-0> Abstract: Soil is an understudied and underregulated pathway of chemical exposure, particularly for agricultural workers who cultivate food in soils. Little is known about how agricultural workers spend their time and how they may contact soil while growing food. Exposure factors are behavioral and environmental variables...

## **Spray Drift, Operator Exposure, Crop Residue and Efficacy: Early Indications for Equivalency of Uncrewed Aerial Spray Systems with Conventional Application Techniques**

Authors: Bonds JAS, Pai N, Hovinga S, Stump K et al. Source: JOURNAL OF THE ASABE 67(1): 15646, 2024, DOI 10.13031/ja.15646 Abstract: Uncrewed Aerial Spray Systems (UASS) are being adopted at a rapid pace in agricultural applications of crop protection products. The data required to effectively regulate their use must be gathered to position UASS in terms of equivalency with other conventional practices. In Fall 2021, the CropLife America Drones Working Group initiated an effort to collect publishe...

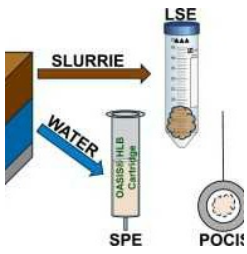
## **PBPK modeling to support risk assessment of pyrethroid exposure in French pregnant women**

Authors: Thépaut E, Bisson M, Brochot C, Personne S et al. Source: ENVIRONMENTAL RESEARCH 251(1):118606, 2024, DOI 10.1016/j.envres.2024.118606 Abstract: Pyrethroids are widely used pesticides and are suspected to affect children's neurodevelopment. The characterization of pyrethroid exposure during critical windows of development, such as fetal development and prenatal life, is essential to ensure a better understanding of pyrethroids potential effects within the concept of Developmental Origins o...

## **Inhalation bioaccessibility of imidacloprid in particulate matter: Implications for risk assessment during spraying**

Authors: Liu YY, Lin FX, Yue XY, Zhang S et al. Source: JOURNAL OF HAZARDOUS MATERIALS 469: 133986, 2024, DOI 10.1016/j.jhazmat.2024.133986 Abstract: Adverse health outcomes due to the inhalation of pesticide residues in atmospheric particulate matter (PM) are gaining global attention. Quantitative health risk assessments of pesticide inhalation exposure highlight the need to understand the bioaccessibility of pesticide residues. Herein, the inhalation bioaccessibility of imidacloprid in PM was det...

**PUBLICATIONS DU RESEAU ECOTOX**



## Novel extraction methods and compound-specific isotope analysis of methoxychlor in environmental water and aquifer slurry samples

Authors: Vinyes-Nadal M, Masbou J, Kümmel S, Gehre M et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 931: 172858, 2024, DOI 10.1016/j.scitotenv.2024.172858 Abstract: Multi-element compound-specific stable isotope analysis (ME-CSIA) allows monitoring the environmental behavior and transformation of most common and persistent contaminants. Recent advancements in analytical techniques have extended the applicability of ME-CSIA to organic micropollutants, including pesticides. Nevertheless, the applica...

## Direct Phototransformation of Sulfamethoxazole Characterized by Four-Dimensional Element Compound Specific Isotope Analysis

Authors: Liu X, Akay C, Köpke J, Kümmel S et al. Source: ENVIRONMENTAL SCIENCE & TECHNOLOGY Early Access, 2024, DOI 10.1021/acs.est.4c02666 Abstract: The antibiotic sulfamethoxazole (SMX) undergoes direct phototransformation by sunlight, constituting a notable dissipation process in the environment. SMX exists in both neutral and anionic forms, depending on the pH conditions. To discern the direct photodegradation of SMX at various pH levels and differentiate it from other transformation proces...

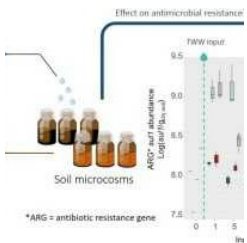


## Organic farming reduces pesticide load in a bird of prey

Authors: Fuentes E, Moreau J, Millet M, Bretagnolle V et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 930: 172778, 2024, DOI 10.1016/j.scitotenv.2024.172778 Abstract: Human activities have led to the contamination of all environmental compartments worldwide, including bird species. In birds, both the environment and maternal transfer lead to high inter-brood variability in contamination levels of pollutants, whereas intra-brood variability is generally low. However, most existing studies focused on...

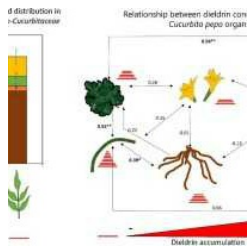
## Succinate dehydrogenase inhibitors (SDHi): focus on mitotoxic pesticides

Authors: Hospital CD, Tête A, Coumoul X, Bortoli S Source: ENVIRONNEMENT RISQUES & SANTE 23(1): 7-20, 2024, DOI 10.1684/ers.2023.1756 Abstract: Succinate dehydrogenase inhibitor (SDHi) fungicides are used to control fungal proliferation in cereals, fruits and vegetables, which may affect yields and cause adverse health effects. Their mode of action is based on blocking the activity of succinate dehydrogenase (SDH), an enzyme which exists in all species with mitochondria. SDH is involved in two ...



## Role of endogenous soil microorganisms in controlling antimicrobial resistance after the exposure to treated wastewater

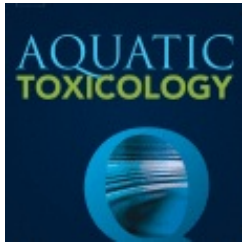
Authors: Della-Negra O, Bastos MC, Bru-Adan V, Santa-Catalina G et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 931: 172977, 2024, DOI 10.1016/j.scitotenv.2024.172977 Abstract: The reuse of treated wastewater (TWW) for irrigation appears to be a relevant solution to the challenges of growing water demand and scarcity. However, TWW contains not only micro-pollutants including pharmaceutical residues but also antibiotic resistant bacteria. The reuse of TWW could contribute to the dissemination of ant...



## Dieldrin accumulation, distribution in plant parts and phytoextraction potential for several plant species and Cucurbita pepo varieties

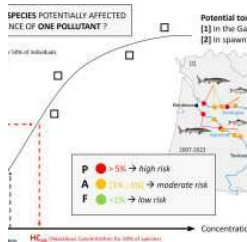
Authors: Affholder MC, Mench M, Gombert-Courvoisier S, Cohen GJ  
Source: SCIENCE OF THE TOTAL ENVIRONMENT 931: 172968, 2024, DOI

10.1016/j.scitotenv.2024.172968  
Abstract: Dieldrin, an organochlorine pesticide (OCP) widely used for crop protection in the second half of the 20th century till the 70's, is worldwide still present in arable soils. It can be transferred to crops, notably cucurbits, depending on plant species and cultivars. Finding strategies to decrease OCP bioavailability in soil is the...



## ToF-SIMS imaging shows specific lipophilic vitamin alterations in chronic reprotoxicity caused by the emerging contaminant Pravastatin in Gammarus fossarum

Authors: Fu TT, Calabrese V, Bancel S, Quéau H et al.  
Source: AQUATIC TOXICOLOGY 271: 106935, 2024, DOI 10.1016/j.aquatox.2024.106935  
Abstract: Blood lipid-lowering agents, such as Pravastatin, are among the most frequently used pharmaceuticals released into the aquatic environment. Although their effects on humans are very well understood, their consequences on freshwater organisms are not well known, especially in chronic exposure conditions. Gammarus fossarum is commonly used as sentinel species...

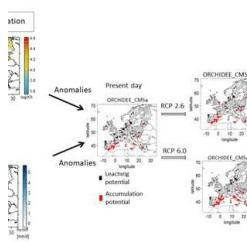


## Assessment of the impact of chemical pollution on endangered migratory fish in two major rivers of France, including spawning grounds

Authors: Bellier B, Bancel S, Rochard E, Cachot J et al.  
Source: SCIENCE OF THE TOTAL ENVIRONMENT 931: 172748, 2024, DOI 10.1016/j.scitotenv.2024.172748  
Abstract: Water pollution is a one of the most contributors to aquatic biodiversity decline. Consequently, ecological risk assessment methods have been developed to investigate the effects of existing stresses on the environment, including the toxic effects of chemicals. One of the existing approaches to quantify toxic risks is called "Potentially ...

## Plant acclimation to ionising radiation requires activation of a detoxification pathway against carbonyl-containing lipid oxidation products

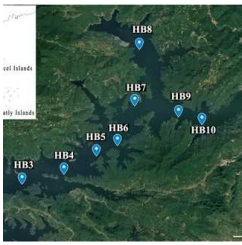
Authors: Ksas B, Chiarenza S, Dubourg N, Ménard V et al.  
Source: PLANT CELL AND ENVIRONMENT Early Access, 2024, DOI 10.1111/pce.14994  
Abstract: Ionising gamma radiation produces reactive oxygen species by water radiolysis, providing an interesting model approach for studying oxidative stress in plants. Three-week old plants of Arabidopsis thaliana were exposed to a low dose rate (25 mGy h<sup>-1</sup>) of gamma radiation for up to 21 days. This treatment had no effect on plant growth and morphology, but it in...



## Estimations of soil metal accumulation or leaching potentials under climate change scenarios: the example of copper on a European scale

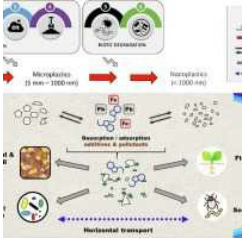
Authors: Sereni L, Paris JM, Lamy I, Guenet B  
Source: SOIL 10(1): 367-380, 2024, DOI 10.5194/soil-10-367-2024  
Abstract: Contaminant inputs to soil are highly dependent on anthropogenic activities, while contaminant retention, mobility, and availability are highly dependent on soil properties. The knowledge of partitioning between soil solid and solution phases is necessary to estimate whether deposited amounts of contaminants will be either transported with runoff or accumulated. Besides, runoff i...





## Microbial contamination in a large drinking water reservoir in north Vietnam

Authors: Le ND, Nguyen TMH, Hoang TTH, Rochelle-Newall E et al. Source: AQUATIC SCIENCES 86(3): 72, 2024, DOI 10.1007/s00027-024-01086-7 Abstract: Surface water is used by 50% of the global population as a source of drinking water. It is therefore important to have an understanding of the quality of surface water used for this purpose, given its potential risk to human health. We studied fecal indicator bacteria [FIB; comprising total coliforms (TC), Escherichia coli (EC) and fecal streptococci] nu...



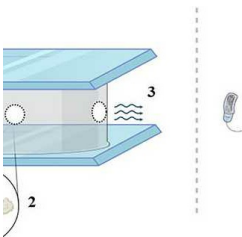
## The Plasticene era: Current uncertainties in estimates of the hazards posed by tiny plastic particles on soils and terrestrial invertebrates

Authors: Renault D, Wiegand C, Balzani P, Richard CMC et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 927: 172252, 2024, DOI 10.1016/j.scitotenv.2024.172252 Abstract: Plastics are ubiquitous in our daily life. Large quantities of plastics leak in the environment where they weather and fragment into micro- and nanoparticles. This potentially releases additives, but rarely leads to a complete mineralization, thus constitutes an environmental hazard. Plastic pollution in agricultural soils currently r...



## Microbial pesticides – challenges and future perspectives for testing and safety assessment with respect to human health

Authors: Wend K, Zorrilla L, Freimoser FM, Gallet A Source: ENVIRONMENTAL HEALTH 23(1): 49, DOI 10.1186/s12940-024-01090-2 Abstract: Plant protection measures are necessary to prevent pests and diseases from attacking and destroying crop plants and to meet consumer demands for agricultural produce. In the last decades the use of chemical pesticides has largely increased. Farmers are looking for alternatives. Biopesticides should be considered a sustainable solution. They may be less toxic than che...



## Non-target effects of neurotoxic insecticides on Ganaspis cf. brasiliensis, a classical biological control agent of the spotted wing Drosophila

Authors: Lisi F, Cavallaro C, Fellin L, Gugliuzzo A et al. Source: CABI AGRICULTURE & BIOSCIENCE 5(1): 48, 2024, DOI 10.1186/s43170-024-00251-0 Abstract: Background The spotted wing drosophila, Drosophila suzukii, is an invasive pest causing significant economic losses worldwide. Current pest control strategies mainly rely on insecticides, which negatively impact fruit marketability and the sustainability of integrated pest management (IPM) programs. In addition, pesticides can have dramatic co...

## Impact of urban pollution on freshwater biofilms: Oxidative stress, photosynthesis and lipid responses

Authors: Roux C, Madru C, Millan-Navarro, D et al. Source: JOURNAL OF HAZARDOUS MATERIALS 472:134523, 2024, DOI 10.1016/j.jhazmat.2024.134523 Abstract: Urban ecosystems are subjected to multiple anthropogenic stresses, which impact aquatic communities. Artificial light at night (ALAN) for instance can significantly alter the composition of algal communities as well as the photosynthetic cycles of autotrophic organisms, possibly leading to cellular oxidative stress. The combined effects of ALAN and ...

## Early impacts of marginal land-use transition to *Miscanthus* on soil quality and soil carbon storage across Europe

Authors: Bertola M, Magenau E, Martani E, Kontek M et al. Source: GLOBAL CHANGE BIOLOGY BIOENERGY 16(6): e13145, 2024, DOI 10.1111/gcbb.13145 Abstract: *Miscanthus*, a C-4 perennial rhizomatous grass, is a low-input energy crop suitable for marginal land, which cultivation can improve soil quality and promote soil organic carbon (SOC) sequestration. In this study, four promising *Miscanthus* hybrids were chosen to evaluate their short-term potential, in six European marginal sites, to sequester SOC and...



## Spray drift in field crops: A dataset to analyse the influence of air induction nozzles, hedges, and their combination on the reduction of sedimentary drift, aerial drift and exposure of bystanders

Authors: Perriot, B (Perriot, Benjamin) [1] ; Pasquier, D (Pasquier, David) [1] ; Hudebine, Y (Hudebine, Yoan) [2] ; Verpont, F (Verpont, Florence) [2] ; Vergès, A (Verges, Adrien) [3] ; Codis, S (Codis, Sebastien) [3] ; Douzals, JP (Douzals, Jean -Paul) [4] ; Bedos, C (Bedos, Carole) [5] ; Grimbuhler, S (Grimbuhler, Sonia) [4] ; Sellam, M (Sellam, Marianne) [6] ; Source: DATA IN BRIEF 54: 110366, 2024, DOI 10.1016/j.dib.2024.110366 Abstract: In 2021 and 2022, the national and cross-sector project...



## Comprehensive analysis of a widely pharmaceutical, furosemide, and its degradation products in aquatic systems: Occurrence, fate, and ecotoxicity

Authors: Sandré F, Moillon R, Morin C, Garrigue-Antar L Source: ENVIRONMENTAL POLLUTION 348: 123799, 2024, DOI 10.1016/j.envpol.2024.123799 Abstract: Many pharmaceutical compounds end up in the environment due to incomplete removal by wastewater treatment plants (WWTPs). Some compounds are sometimes present in significant concentrations and therefore represent a risk to the aquatic environment. Furosemide is one of the most widely used drugs in the world. Considered as an essential drug by the W...

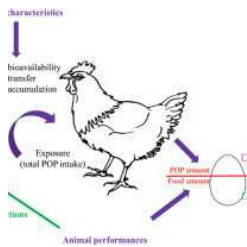
## Spinosad-induced intergenerational sublethal effects on *Tuta absoluta*: biological traits and related genes expressions

Authors: Ullah F, Guencan A, Gul H, Hafeez M et al. Source: ENTOMOLOGIA GENERALIS Early Access, 2024, DOI 10.1127/entomologia/2024/2452 Abstract: The South American tomato pinworm, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae), is considered one of the most economically important invasive pests that causes severe damage to tomato crops. The biopesticide spinosad is widely used for controlling *T. absoluta*. This study aimed to investigate the spinosad-induced intergenerational sublethal effects ...



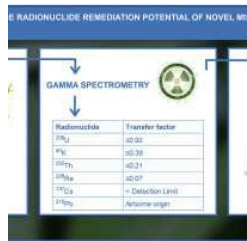
## Temporal fluctuation of metallic trace elements concentrations in three morphotypes of floating holopelagic *Sargassum* from the Caribbean coast (Guadeloupe, French West Indies)

Authors: Cipolloni OA, Couture P, Cordonnier S, Pascal PY Source: MARINE POLLUTION BULLETIN 201: 116229, 2024, DOI 10.1016/j.marpolbul.2024.116229 Abstract: Since 2011, the Caribbean coasts have unprecedented stranding of a pelagic brown macroalgae *Sargassum* inducing damages for coastal ecosystems and economy. This study evaluated the temporal fluctuations of metallic trace elements (MTE) in *Sargassum* freshly arrived on the Caribbean coast. From May 2020 to September 2021, 12 floating samples of t...



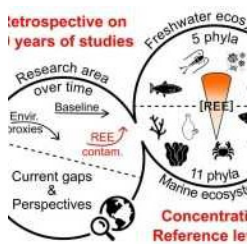
## Generic methodology to prevent food contamination by soil born legacy POPs in free range livestock

Authors: Amutova F, Delannoy M, Akhatzhanova A, Akhmetsadykov N et al. Source: HELIYON 10(7): e28533, 2024, DOI 10.1016/j.heliyon.2024.e28533 Abstract: Government monitoring commonly includes regulating POPs in animal feed and products of animal origin, with many countries setting Maximum Residue Levels (MRLs) to ensure safe tolerable concentrations. However, these MRLs do not address the presence of most POP families in soil, where concentrations can be much higher due to the contaminants' strong ...



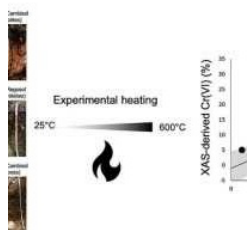
## Assessment of the radionuclide remediation potential of novel miscanthus hybrids

Authors: Jurisic V, Raseta D, Kontek M, Clifton-Brown J et al. Source: HELIYON 10(6): e27788, 2024, DOI 10.1016/j.heliyon.2024.e27788 Abstract: here are few studies related to the radionuclide remediation options, which comply to the demands of the environmentally non-destructive physical remediation methods. So far, most of the research was conducted on the phytoremediation capacity of different energy crops, as well as the established miscanthus hybrids which involved metal and heavy metal conta...



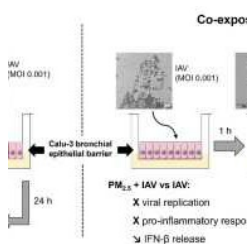
## Global natural concentrations of Rare Earth Elements in aquatic organisms: Progress and lessons from fifty years of studies

Authors: Pereto C, Baudrimont M, Coynel A, Source: SCIENCE OF THE TOTAL ENVIRONMENT 922: 171241, 2024, DOI 10.1016/j.scitotenv.2024.171241 Abstract: Rare Earth Elements (REEs) consist of a coherent group of elements with similar physicochemical properties and exhibit comparable geochemical behaviors in the environment, making them excellent tracers of environmental processes. For the past 50 years, scientific communities investigated the REE concentrations in biota through various types of research...



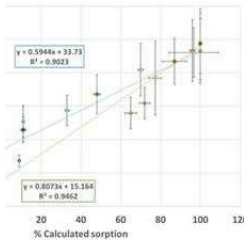
## Heating effect on chromium speciation and mobility in Cr-rich soils: A snapshot from New Caledonia

Authors: They G, Juillot F, Calmels D, Bollaert Q et al. Source: SCIENCE OF THE TOTAL ENVIRONMENT 922: 171037, 2024, DOI 10.1016/j.scitotenv.2024.171037 Abstract: In the context of global warming, wildfires are expected to increase in both frequency and intensity in the forthcoming decades. Among the environmental and ecological wildfires-induced impacts, the risk of freshwater pollution by soilborne trace metals deserves a more extensive and accurate assessment because of its potential threat to ...



## Exposure to PM2.5 modulate the pro-inflammatory and interferon responses against influenza virus infection in a human 3D bronchial epithelium model

Authors: Chivé C, Martín-Faivre L, Eon-Bertho A, Alwardini C et al. Source: ENVIRONMENTAL POLLUTION 348: 123781, 2024, DOI 10.1016/j.envpol.2024.123781 Abstract: Epidemiological studies showed a positive association between exposure to PM 2.5 and the severity of influenza virus infection. However, the mechanisms by which PM 2.5 can disrupt antiviral defence are still unclear. From this perspective, the objective of this study was to evaluate the effects of PM 2.5 on antiviral signalling in the resp...



## Non-target screening to track contaminant removal and release during nature-based water treatment

Authors: Guy C, Duporté G, Luquot L, Gomez E  
Source: FRONTIERS IN ENVIRONMENTAL SCIENCE 12: 1385806, 2024, DOI 10.3389/fenvs.2024.1385806  
Abstract: Introduction: Population growth and increasing water demand have exacerbated water resource scarcity. Treated wastewater (TWW) is a valuable alternative resource, but its complex composition, including micropollutants, raises concerns about reuse risks. Reactive barriers (RB) made with natural materials offer a solution to remove TWW contaminants. Evalu...

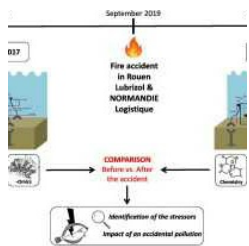


## Single injection LC-MS/MS analytical method for the quantification of diverse families of micropollutants, including PFAS and organotins, in Gammarus fossarum

Authors: Duny M, Cortejade A, Wiest L, Nicolas, M et al.  
Source: JOURNAL OF CHROMATOGRAPHY A 1720: 464778, 2024, DOI 10.1016/j.chroma.2024.464778  
Abstract: Since the last decades, light has been shed on the pollution of aquatic ecosystems. Considering apolar compounds in water, analysis of the dissolved phase is not sufficient due to their possible bioaccumulation. Additional analysis of sediments, biota, or sentinel species is necessary. Among sentinel species, Gammarus fossarum is a small shrimp...

## Global Lake Health in the Anthropocene: Societal Implications and Treatment Strategies

Authors: Weyhenmeyer GA, Chukwuka AV, Anneville O, Brookes J et al.  
Source: EARTHS FUTURE 12(4): e2023EF004387, 2024, DOI 10.1029/2023EF004387  
Abstract: The world's 1.4 million lakes (>= 10 ha) provide many ecosystem services that are essential for human well-being; however, only if their health status is good. Here, we reviewed common lake health issues and classified them using a simple human health-based approach to outline that lakes are living systems that are in need of oxygen, clean water...



## Relevance of flounder caging and proteomics to explore the impact of a major industrial accident caused by fire on the Seine estuarine water quality

Authors: Laurent J, Diop M, Amara R, Fisson C et al.  
Source: MARINE POLLUTION BULLETIN 201: 116178, 2024, DOI 10.1016/j.marpolbul.2024.116178  
Abstract: On September 26th 2019, a major fire occurred in the Lubrizol factory located near the Seine estuary, in Rouen France. Juvenile flounders were captured in the Canche estuary (a reference system) and caged one month in the Canche and in the Seine downstream the accident site. No significant increases of PAHs, PCBs and PFAS was detected in Seine vs Canc...

## Cartographie des zones agricoles et des pratiques associées pour caractériser la pollution par les pesticides sur le long terme

Authors: Dufleit V, Tran A, Bonnal V, Lecat L et al.  
Source: Environnement, Risques & Santé 22: 64-72 Suppl 1, 2023, DOI 10.1684/ers.2023.1762  
Abstract: To study the impact of pesticide uses in agriculture on human health, data on the types and quantities of pesticide active substances introduced into the environment over a long period of time are needed. However, when there is no systematic or available written records of pesticide applications, the characterization of environmental contaminat...

## Modélisation de la qualité de l'air : vers l'évaluation de l'exposition atmosphérique aux pesticides

Authors: Couvidat F, Bedos C, Quivet E Source: Environment, Risques & Santé 22(suppl 1): 58-63, 2023, DOI 10.1684/ers.2023.1760 Abstract: Determining atmospheric exposure is critical to assess the health impact of pesticides, but few tools currently exist to map pesticide concentrations at the national scale. One possible method would be to use air quality models such as the CHIMERE model to simulate pesticide atmospheric concentrations. This type of model represents the physicochemical proces...

## OUVRAGES / RAPPORTS / ACTES DE CONGRES

OCEAN REPORT  
2024



### State of the Ocean Report 2024

The State of the Ocean Report (StOR) has the ambition to inform policymakers about the state of the ocean and to stimulate research and policy actions towards 'the ocean we need for the future we want', contributing to the 2030 Agenda and in particular SDG 14, which reads 'Conserve and sustainably use the oceans, seas and marine resources', as well as other global processes such as the UNFCCC, the Convention on Biological Diversity and the Sendai Framework for Disaster Risk Reduction. Structured ...

[aquadocs.org](http://aquadocs.org)

### TFA : Contamination généralisée de l'eau par un produit de dégradation non réglementé des pesticides PFAS !

Génération Futures et le Pesticide Action Network Europe (ainsi que d'autres organisations membres de ce réseau) dévoilent ce triste héritage et réclament une action politique rapide. Une étude exploratoire conjointe de 23 échantillons d'eau de surface et de six échantillons d'eau souterraine provenant de dix pays de l'UE, menée par les organisations membres du Réseau européen d'action contre les pesticides (PAN Europe), a révélé des niveaux alarmants d'un polluant éternel peu connu et largement...

[www.generations-futures.fr](http://www.generations-futures.fr)

### Air pollution in Europe: 2024 reporting status under the National Emission reduction Commitments Directive

This briefing describes progress made by the EU and its Member States towards reducing emissions of the five main air pollutants regulated under the National Emission reduction Commitments Directive. It assesses Member State performance against emission reduction commitments for 2020-2029, as well as progress towards meeting more ambitious reduction commitments that will apply 2030 onwards. It also highlights trends for a broader range of air pollutants and their sources in Europe. The briefing i...

[www.eea.europa.eu](http://www.eea.europa.eu)

## REGLEMENTATION

### Retrait de l'approbation de la substance active «acibenzolar-S-méthyle»

RÈGLEMENT D'EXÉCUTION (UE) 2024/1696 DE LA COMMISSION du 19 juin 2024 retirant l'approbation de la substance active «acibenzolar-S-méthyle» conformément au règlement (CE) n° 1107/2009 du Parlement européen et du Conseil, modifiant le règlement d'exécution (UE) n° 540/2011 de la Commission et abrogeant le règlement d'exécution (UE) 2016/389 de la Commission Numéro officiel : UE/2024/1696 Date de signature : 19/06/2024

## **Modification des conditions d'approbation de la substance active «métalaxyl-M»**

RÈGLEMENT D'EXÉCUTION (UE) 2024/1718 DE LA COMMISSION du 19 juin 2024 modifiant les règlements d'exécution (UE) 2020/617 et (UE) n° 540/2011 en ce qui concerne les conditions d'approbation de la substance active «métalaxyl-M» Numéro officiel : UE/2024/1718 Date de signature : 19/06/2024 Liens juridiques : Modification Règlement d'exécution UE/540/2011 25/05/2011 Modification Règlement d'exécution UE/2020/617 05/05/2020

## **Autorisation de l'Union pour la famille de produits biocides dénommée «Saniswiss H2O2»**

RÈGLEMENT D'EXÉCUTION (UE) 2024/1710 DE LA COMMISSION du 19 juin 2024 accordant une autorisation de l'Union pour la famille de produits biocides dénommée «Saniswiss H2O2» conformément au règlement (UE) n° 528/2012 du Parlement européen et du Conseil Numéro officiel : UE/2024/1710 Date de signature : 19/06/2024

## **Teneurs maximales pour certains contaminants dans les denrées alimentaires : modification et rectification du règlement**

RÈGLEMENT (UE) 2024/1756 DE LA COMMISSION du 25 juin 2024 modifiant et rectifiant le règlement (UE) 2023/915 concernant les teneurs maximales pour certains contaminants dans les denrées alimentaires Numéro officiel : UE/2024/1756 Date de signature : 25/06/2024 Liens juridiques : Modification Règlement UE/2023/915 25/04/2023

## **Assignation à des États membres de l'évaluation de la substance active «deltaméthrine» aux fins de la procédure de renouvellement : modification du règlement**

RÈGLEMENT D'EXÉCUTION (UE) 2024/1734 DE LA COMMISSION du 21 juin 2024 modifiant le règlement d'exécution (UE) n° 686/2012 en ce qui concerne l'assignation à des États membres de l'évaluation de la substance active «deltaméthrine» aux fins de la procédure de renouvellement Numéro officiel : UE/2024/1734 Date de signature : 21/06/2024 Liens juridiques : Modification Règlement d'exécution UE/686/2012 26/07/2012

## **LMR de fenazaquin, mepiquat and propamocarb dans ou sur certains produits**

Commission Regulation (EU) 2024/1439 of 24 May 2024 amending Annexes II and III to Regulation (EC) No 396/2005 of the European Parliament and of the Council

## **LMR de deltamethrin, metalaxyl, thiabendazole and trifloxystrobin dans ou sur certains produits**

Commission Regulation (EU) 2024/1342 of 21 May 2024 amending Annex II to Regulation (EC) No 396/2005 of the European Parliament and of the Council

## **LMR de benzovindiflupyr, chlorantraniliprole, emamectin, quinclorac, spiromesifen, and triflumuron dans ou sur certains produits**

Commission Regulation (EU) 2024/1355 of 21 May 2024 amending Annexes II, III and V to Regulation (EC) No 396/2005 of the European Parliament and of the Council

## **LMR de dithianon dans ou sur certains produits**

Commission Regulation (EU) 2024/1314 of 15 May 2024 amending Annex III to Regulation (EC) No 396/2005

## LMR de prothioconazole dans et sur certains produits

Commission Regulation (EU) 2024/1318 of 15 May 2024 amending Annex II to Regulation (EC) No 396/2005

## Approval periods of the active substances dodemorph, fatty acids C8-C10 methyl esters, lauric acid, methyl octanoate, methyl decanoate, oleic acid and Trichoderma atroviride (formerly T. harzianum) strain IMI 206040

Commission Implementing Regulation (EU) 2024/1280 of 30 April 2024 amending Implementing Regulation (EU) No 540/2011

## LMR applicables aux résidus de dithianon présents dans ou sur certains produits

RÈGLEMENT (UE) 2024/1314 DE LA COMMISSION du 15 mai 2024 modifiant l'annexe III du règlement (CE) n° 396/2005 du Parlement européen et du Conseil en ce qui concerne les limites maximales applicables aux résidus de dithianon présents dans ou sur certains produits Numéro officiel : UE/2024/1314 Date de signature : 15/05/2024 Liens juridiques : Modification le 05/12/2024 Règlement CE/396/2005 23/02/2005

## LMR de prothioconazole présents dans ou sur certains produits

RÈGLEMENT (UE) 2024/1318 DE LA COMMISSION du 15 mai 2024 modifiant l'annexe II du règlement (CE) n° 396/2005 du Parlement européen et du Conseil en ce qui concerne les limites maximales applicables aux résidus de prothioconazole présents dans ou sur certains produits

## AVIS / EXPERTISES / NORMES



### Antiparasitaires pour équidés : les bons réflexes à adopter

Pour vermifuger les chevaux et les ânes, plusieurs bonnes pratiques doivent être respectées afin d'éviter la résistance des parasites digestifs aux antiparasitaires et ne pas mettre en danger la santé des équidés.

[www.anses.fr](http://www.anses.fr)



### Comment prendre en compte la toxicité des mélanges ? De nouvelles approches pour l'homologation et le monitoring

Les cocktails de produits chimiques présents dans l'environnement posent un véritable défi aux autorités, à la recherche et à l'industrie car le risque qu'ils représentent est très difficile à évaluer. Le Centre Ecotox aide à développer des concepts applicables dans la pratique.

[www.centreecotox.ch](http://www.centreecotox.ch)

## DROIT ET POLITIQUE DE L'ENVIRONNEMENT



## **La réduction de l'emploi des produits phytopharmaceutiques par le développement de l'agriculture de précision**

Face aux enjeux de souveraineté alimentaire et de nécessaire réduction de l'usage des produits phytopharmaceutiques, des solutions alternatives pour permettre la protection des cultures sont à travailler et à déployer rapidement. L'agriculture de précision est-elle une solution partielle à ces enjeux parfois contradictoires ? La mission conduite par le CGAAER apporte des premiers éléments de réponse.

[agriculture.gouv.fr](http://agriculture.gouv.fr)

## **Traitement des micropolluants : lancement d'un appel à manifestation d'intérêt**

Disposer de démonstrateurs sur les traitements (1) des micropolluants dans différents contextes : c'est l'objectif de l'agence de l'eau Adour-Garonne. Elle vient de lancer pour y parvenir un appel à manifestation d'intérêt (2) (AMI) ouvert jusqu'au 13 septembre.

[www.actu-environnement.com](http://www.actu-environnement.com)

## **Pollution plastique**

La France vise à réduire l'utilisation du plastique et à favoriser la substitution du plastique par d'autres matériaux ou le développement d'emballages réutilisables ou recyclables et recyclés. Pour ce faire, diverses mesures ont été mises en place à travers plusieurs lois telles que la loi de transition énergétique pour la croissance verte, la loi anti-gaspillage pour une économie circulaire, et la loi climat et résilience. La loi anti-gaspillage pour une économie circulaire fixe comme objectif ...

[www.ecologie.gouv.fr](http://www.ecologie.gouv.fr)

## **Croisement des données santé et environnement : les lauréats du 2e appel à projets sont dévoilés**

Les lauréats de la seconde édition de l'appel à projets qui vise à croiser les données entre la santé et l'environnement, « la donnée pour recherche et l'innovation en santé environnement », sont désormais connus : sur les cinq projets sélectionnés, deux s'intéressent au lien avec le changement climatique.

[www.actu-environnement.com](http://www.actu-environnement.com)

## **Le Conseil de l'UE valide les directives Déchets, Sols et Allégations environnementales**

Les ministres européens de l'Environnement ont adopté leur position sur les directives sur les déchets et les sols, en s'alignant sur les propositions de la Commission. Ils se sont davantage inspirés des eurodéputés pour les allégations environnementales.

[www.actu-environnement.com](http://www.actu-environnement.com)

## **L'utilisation des pesticides en France**

La contamination des milieux (eau, sol, air) par les pesticides est une problématique majeure qui interpelle la population et qui n'est pas sans faire écho aux inquiétudes que peuvent susciter l'usage de certaines substances et leurs conséquences pour la santé. La France s'est engagée dans une démarche de réduction de l'usage des pesticides avec le plan Ecophyto II+ réaffirmée dans le plan Biodiversité.

[www.ecologie.gouv.fr](http://www.ecologie.gouv.fr)



## Uruguay signs, begins project to transform its agricultural system

In a significant step towards promoting sustainable agriculture, FAO signed a project agreement with the Government of Uruguay (Ministry of Livestock, Agriculture, and Fisheries, and Ministry of Environment) to launch a joint project for reducing the use of harmful agrochemicals and plastic pollution. The project, titled "Strengthening Investment for Adoption of Alternatives and Sustainable Management of Agrochemicals and Agricultural Plastics in Uruguay", aims to enhance capacity agrochemical ov...

[www.fao.org](http://www.fao.org)

## AAP France Agrimer pour des matériels concourant à la réduction de l'utilisation des produits phytopharmaceutiques

Le site est ouvert, ne tardez pas à faire la demande si certains investissements vous intéressent.

[bretagne.chambres-agriculture.fr](http://bretagne.chambres-agriculture.fr)

## FARM programme aims to promote safer alternatives to highly hazardous pesticides by promoting financial incentives

The Financing Agrochemical Reduction and Management (FARM) programme was officially launched in Nairobi, Kenya, in March 2024. It consists of six projects in Ecuador, India, Kenya, Laos, the Philippines, Uruguay, and Vietnam. The five-year initiative aims to catalyze investments to minimize the use of harmful agrochemicals in agrifood systems.

[www.fao.org](http://www.fao.org)

## REVUE DE PRESSE

### {La mise à jour des polluants de l'eau de l'UE passe à l'étape suivante}

L'UE a proposé de renforcer les normes relatives aux polluants de l'eau en mettant à jour la liste des polluants prioritaires et les normes de qualité environnementale (NQE) pour les eaux de surface et les eaux souterraines. La semaine dernière, le Conseil européen a approuvé son mandat de négociation sur la directive, ce qui permet à la présidence d'entamer des discussions avec le Parlement européen sur le texte final.

[www.centrecotox.ch](http://www.centrecotox.ch)

### Dans l'affaire des « polluants éternels », la justice suspend l'extension des activités de Daikin à Lyon

Le tribunal administratif de Lyon a suspendu l'exploitation d'une nouvelle unité du groupe chimique sur son site industriel au sud de Lyon, soupçonné, avec son voisin Arkema, de pollution aux PFAS.

[www.lemonde.fr](http://www.lemonde.fr)

### EPA and Partners Announce Winner of Water Toxicity Sensor Challenge

Today, June 20, 2024, the U.S. Environmental Protection Agency announced the results of Phase Two of the Water Toxicity Sensor Challenge. The challenge winner, Aqua Science, LLC, is receiving a prize of \$105,000 for their innovative system, BioLight Toxy, that uses a bioluminescent bacterium that responds when exposed to toxins in water.

[www.epa.gov](http://www.epa.gov)

## Approche « Une santé » : l'OFB et l'Anses s'engagent dans une collaboration

Un autre petit pas vient d'être réalisé pour rendre plus concrète l'approche « Une santé » (One Health) : l'Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (Anses) et l'Office français de la biodiversité (OFB) viennent de signer une convention-cadre pour améliorer leur collaboration. Les thèmes couverts ? La santé animale, tout d'abord.

[www.actu-environnement.com](http://www.actu-environnement.com)

## PFAS : vers la création d'un institut écocitoyen dans la Vallée de la chimie

Des réflexions sont menées sur la mise en œuvre d'un institut écocitoyen qui couvrirait le territoire de la Vallée de la chimie, dans le Rhône. L'objectif ? Améliorer la connaissance sur la contamination par les PFAS et la transmission des informations. Article réservé aux abonnés

[www.actu-environnement.com](http://www.actu-environnement.com)

## The end of FAO's Toxic Alliance with the pesticide industry

The three-year controversial partnership between the UN Food and Agriculture Organization (FAO) and pesticide lobby group CropLife International has finally ended. Small farmers and campaigners welcome this as a milestone toward a healthier future for citizens and farm workers all around the world and for the environment.

[www.pan-europe.info](http://www.pan-europe.info)



## Women's health and endocrine disruptors: FREIA research project launches new webinar series

This webinar series from the FREIA research project brings together leading partners to talk about their scientific findings after five years of research into the effects of endocrine disrupting chemicals (EDCs) on female reproduction.

[www.env-health.org](http://www.env-health.org)



## Pesticides, produits phytopharmaceutiques : que disent ces termes de ceux qui les emploient ?

« Pesticides », « produits phytosanitaires », « intrants », « phytos » ... Ces termes sont régulièrement présentés comme interchangeable. En réalité, ils disent beaucoup de ceux qui les emploient.

[theconversation.com](http://theconversation.com)



## « Plasticulture » : quand le plastique remplace la paille dans les champs

L'intensification de l'usage du plastique pour les serres, le paillage et l'ensilage, multiplie les risques de pollution.

[www.lemonde.fr](http://www.lemonde.fr)

## Pesticides : leur toxicité sur les abeilles sauvages reste sous-estimée

Une nouvelle étude met en lumière de grandes variations entre les abeilles domestiques et sauvages dans leur vulnérabilité face aux néonicotinoïdes. Une variabilité dont ne rend pas compte la réglementation, ne s'appuyant que sur les plus résistantes. Article réservé aux abonnés.

[www.actu-environnement.com](http://www.actu-environnement.com)

## Comment fonctionne Reach, règlement européen qui encadre les substances chimiques ?

Adopté par l'Union européenne en 2006, le règlement Reach (Registration, evaluation, authorization of chemicals, soit enregistrement, évaluation et autorisation des produits chimiques en français), qui encadre la fabrication et l'utilisation des substances chimiques en Europe, a souvent été critiqué pour ses lenteurs et sa complexité.

[theconversation.com](http://theconversation.com)

## Veterinary antimicrobials in Europe's environment: a One Health perspective

Antimicrobials are an essential tool to prevent or treat disease in humans and animals. In food systems, they help to ensure the health and welfare of animals raised for food. However, their use can also lead to environmental pollution and potentially affect human health, including by contributing to the threat of antimicrobial resistance (AMR). This briefing summarises the latest knowledge on how antimicrobials used in food-producing animals may impact the health of humans, animals and ecosystem...

[www.eea.europa.eu](http://www.eea.europa.eu)

## Victoire pour la santé et l'environnement : la proposition de loi sur les PFAS est adoptée au Sénat !

Fruit d'un travail collectif entre politiques, associations, scientifiques et journalistes, la proposition de loi visant à protéger la population des risques liés aux substances per- et polyfluoroalkylées a été adoptée au Sénat. Contre la position du Gouvernement, les sénateurs et sénatrices ont voté à l'unanimité en faveur du texte, à l'appel du groupe Union Centriste, dont le sénateur Bernard Pillefer était le rapporteur.

[www.generations-futures.fr](http://www.generations-futures.fr)

## Le casse-tête de la surveillance des PFAS dans les eaux

Les PFAS sont dans le viseur du législateur. Mais il y a un verrou : il ne s'agit pas seulement de surveiller une poignée de composés connus, mais de considérer des millions de molécules différentes.

[theconversation.com](http://theconversation.com)



## Déclassement d'un métabolite du chlorothalopiridate par l'Anses, un pesticide très présent dans l'eau potable

Générations Futures s'inquiète des conséquences d'un tel déclassement et d'un déni de l'application du principe de précaution. La Suisse vient de prendre une décision différente.

[www.generations-futures.fr](http://www.generations-futures.fr)

## New Study – Chemical exposure can lead to higher risk of metabolic syndrome in children

A new study published today by the EU-funded ATHLETE project, where HEAL is a partner, found that prenatal exposure to endocrine disrupting chemicals (EDCs), which interfere with the normal functioning of the hormonal system, can result in poorer metabolic health in children, which in turn can have lifelong negative effects on health. Metabolic syndrome is a combination of conditions that can increase the risk of cardiovascular diseases and diabetes.

[www.env-health.org](http://www.env-health.org)

## **Produits phytosanitaires : les EPI efficaces pour réduire les risques liés à leur exposition selon une étude**

Phyteis, l'organisation professionnelle qui fédère, en France, les 18 entreprises qui fournissent des produits phytosanitaires à usage agricole, rapporte qu'une publication scientifique à laquelle elle a participé, confirme l'efficacité des équipements de protection individuelle (EPI) pour réduire l'exposition aux risques liés à l'utilisation des phytos.

[www.reussir.fr](http://www.reussir.fr)

[ecophyto](#)

## **EU Pesticide Committee neglects health and environment**

The pesticide committee meeting (SCoPAFF) this week showcases significant shortcomings in the way European authorities address critical health and environmental risks related to pesticides. Despite clear scientific evidence and legal obligations, the European Commission is proposing to renew several harmful pesticides. One is linked to Parkinson's disease, while other endocrine-disrupting, reprotoxic and PFAS pesticides may continue their destructive work. Many proposed decisions blatantly disreg...

[www.pan-europe.info](http://www.pan-europe.info)

## **UNAF - Nouveau Plan Ecophyto : des impacts désastreux sur les pollinisateurs**

L'UNAF déplore les modifications du contenu de la Stratégie Ecophyto 2030 dévoilé par le gouvernement Attal le 6 mai dernier. Cette stratégie, censée créer un cadre pour la réduction de l'utilisation des pesticides en France, est un désastre annoncé pour les pollinisateurs, notamment les abeilles des apicultrices et apiculteurs français, et la biodiversité en général.

[www.unaf-apiculture.info](http://www.unaf-apiculture.info)

[ecophyto](#)

## **Pesticides : une nouvelle plateforme pour permettre aux riverains exposés de mener une action en justice**

[VIDÉO] L'avocate Corinne Lepage a présenté mercredi une plateforme permettant aux voisins de champs traités par des produits phytosanitaires et malades de rejoindre une action en justice. Son cabinet demande à l'État que les riverains bénéficient du même régime d'indemnisation que les agriculteurs victimes des mêmes pathologies. Le gouvernement réfléchit à la mise en place d'un tel dispositif, mais selon l'avocate, il en limite la portée en contraignant la personne malade à apporter la preuve du...

[www.tf1info.fr](http://www.tf1info.fr)

[ecophyto](#)

## **[Protection insecticide] Une ONG demande de suspendre la dérogation de Movento pour les betteraviers**

Agir pour l'Environnement demande au Conseil d'Etat de suspendre en urgence une dérogation accordée aux betteraviers pour utiliser davantage un insecticide face au risque de jaunisse qui menace la production sucrière, a annoncé l'association mardi.

[www.terre-net.fr](http://www.terre-net.fr)