

Use of Mixed-Mode Ion Exchange Sorbent for the Passive Sampling of Organic Acids by Polar Organic Chemical Integrative Sampler (POCIS)

Acidic herbicides are increasingly monitored in freshwater, since their high solubility favors their rapid transfer to the water phase. Therefore, contaminant levels in the water can vary rapidly and passive sampling would be preferred over spot sampling to integrate all pollution events over a given exposure time. In this work, we propose to compare the conventional pharmaceutical polar organic chemical integrative sampler (POCIS) with modified POCISs containing two different receiving phases: a standard polystyrene divinylbenzene polymer with a higher specific surface area (Chromabond HR-X) and a mixed-mode anion exchange sorbent providing additional strong anion exchange interaction sites (Oasis MAX). Due to its hydrophobic character, Chromabond HR-X had little interaction with water (no sampling of acidic herbicides); whereas Oasis MAX provided acceptable sampling parameters (longer kinetic regime together with higher sampling rates). Additional experiments with POCIS-MAX showed no influence of nitrates on analyte uptakes, and linear isotherms reaching 10 IOEg L^{-1} , supporting the applicability of this device for the sampling of organic acids in continental water. The performance and reference compound (PRC) approach would be then applicable for POCIS-MAX if no competition is observed with other anions, especially organic acids (e.g., humic acids).

Auteurs du document : Fauvelle, V., Mazzella, N., Delmas, F., Madarassou, K., Eon, M., Budzinski, H.

Mots clés : HERBICIDE, SURVEILLANCE, EAU DOUCE, POLLUTION DE L'EAU, ECHANTILLONNEUR PASSIF, ECHANTILLONNAGE STATISTIQUE, POCIS, HERBICIDES, MONITORING, FRESHWATER, WATER POLLUTION, STATISTICAL SAMPLING, PASSIVE SAMPLER

Date : 2012

Format : text/xml

Source : 31132

Langue : Inconnu

Droits d'utilisation : Date de dépôt: 2013-02-12 - Tous les documents et informations contenus dans la base CemOA Publications sont protégés en vertu du droit de propriété intellectuelle, en particulier par le droit d'auteur. La personne consultant la base CemOA Publications peut visualiser, reproduire, ou stocker des copies des publications, à condition que l'information soit seulement pour son usage personnel et non commercial. L'utilisation des travaux universitaires est soumise à autorisation préalable de leurs auteurs. Toute information relative au signalement d'une publication contenue dans CemOA Publications doit inclure la citation bibliographique usuelle : Nom du ou des auteurs, titre et source du document, date et URL de la notice (dc_identifiant).

Télécharger les documents : <https://irsteadoc.irstea.fr/cemoa/PUB00037769>

Permalien : <https://www.documentation.eauetbiodiversite.fr/notice/use-of-mixed-mode-ion-exchange-sorbent-for-the-passive-sampling-of-organic-acids-by-polar-organic-ch0>

Evaluer cette notice: