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# Analytical study on ethephon residue determination in water by ion-pairing liquid chromatography/tandem mass spectrometry

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# **Abstract**

Full Article

A detailed analytical study on ethephon residue determination in water, making use of ion-pairing liquid chromatography coupled to electrospray tandem mass spectrometry (LC/MS/MS), has been carried out. Ethephon is a plant growth regulator, highly polar, which is typically present in aqueous solution in anionic form due to its acid character.

Both its retention including extraction using ion-pairs added to retention

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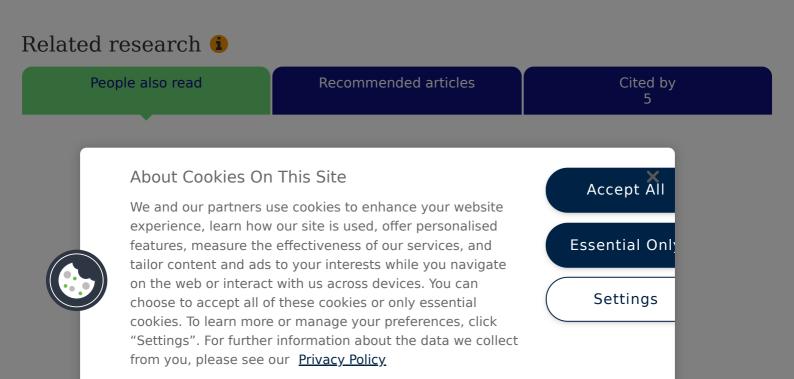
evaluation of their relative intensity ratios allowed the reliable confirmation of the

analyte in samples. The optimised approach was tested in low-salinity water spiked at  $0.1\,\mu g\,L^{-1}$  level with satisfactory recovery, and a limit of detection of  $0.02\,\mu g\,L^{-1}$ . To this purpose, the water sample was partially de-ionised in an initial stage, in order to remove major ions that would have interfered in analyses. The application of this methodology to more saline/complex water samples, as surface or wastewater, was problematic and a thorough optimisation of the de-ionisation conditions would be required.

Q Keywords: ethephon ion-pairing liquid chromatography tandem mass spectrometry tetrabuthylammonium, water analysis

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