

Abstract Preview of 'Atrazine' (RHR422)

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Preview of your abstract

Abiotic degradation of triazine pesticides revealed by surface-enhanced Raman scattering R. Rubira and C.J.L. Constantino, FCT, Univ. Estadual Paulista, Presidente Prudente, SP, Brazil., , ; **S. Sanchez-Cortes** <s.sanchez.cortes@csic.es> and **M.V. Cañamares**, Instituto de Estructura de la Materia, IEM-CSIC, Serrano 121, E-28006-Madrid, Spain, , ,

Triazine herbicides are considered among the most important class of agricultural chemicals ever developed. During their 50 years of use they have contributed to the huge increment of the crop production. One of the most interesting chemical characteristics of triazine pesticides is its high tendency to degradation by several factors: hydration, photolysis, temperature. The degradation products of these compounds are common in the herbicides that are structurally related to atrazine, the most important pesticide of the series and the most frequently used one, such as simazine or prometryne. Therefore, the detection of triazine herbicides by SERS must take into account all these effects.

In this work we present preliminary results obtained in our laboratory on the detection of atrazine and prometryne and their degradation products by using different SERS substrates. The results obtained from these experiments revealed several important facts: a) the commercial triazine compounds presented an already partial degradation; b) the SERS cross section of the degraded triazines is approximately two orders of magnitude higher than the precursor original triazine; and c) these herbicides display a high tendency to the degradation at relatively mild conditions, such as under an increase of temperature to 30°C in aqueous solution.

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