



## **Seasonal trend of nitrogen dioxide levels measured by means of passive samplers in La Plana de Castellón (Spain)**

J.M. Delgado-Saborit (1), M.A. Querol-Balaguer (1), J.M. Amigó-Descarrega (2), V.J. Esteve-Cano (1)

1. Inorganic and Organic Chemistry Dpt., Universitat Jaume I, Castellón, Spain.
2. Department of Geology, Universitat de València, Burjassot, Spain.

The aim of this work is the study of seasonal trends of NO<sub>2</sub> levels in a Mediterranean Spanish coastal area. Measurement campaigns were made in summer 2001 and winter 2002. Fourteen samples were collected each sampling period covering an interest area of 1,400 km<sup>2</sup>. Measurements were made with Radiello® passive samplers.

Highly different levels of NO<sub>2</sub> were recorded in rural areas compared with roads and cities. In summer, the highest levels were recorded in roads; meanwhile in winter-time highest levels were recorded in Castellon city center. NO<sub>2</sub> levels in rural area were all below 10 µg/m<sup>3</sup>. In roads, levels were between 30-50 µg/m<sup>3</sup> in summer and 50-75 µg/m<sup>3</sup> in winter. In urban environments, NO<sub>2</sub> levels were in the range 20-40 µg/m<sup>3</sup> during summer and between 60-90 µg/m<sup>3</sup> in winter. All these values registered were in consonance with those reported in the literature. Beside this, a seasonal trend was established with increasing values of NO<sub>2</sub> in winter season. As well, NO<sub>2</sub> levels recorded in sites situated in the ceramic area were clearly related with the economic activity of the tile and glaze factories. Finally, the Benicassim site was of interest due to NO<sub>2</sub> levels recorded reflects undoubtedly the tourist pattern of the area as NO<sub>2</sub> levels descend sharply from summer to winter correlated with the high decrease in the population of this city.

# **1 ACKNOWLEDGEMENTS**

Authors are grateful to the Ministerio-Ciencia-Tecnologia for financial support through the REN2002-04337-C02-01/CLI project. JM Delgado is grateful to the Generalitat-Valenciana for the FPI grant.