

**EVALUATION OF ENVIRONMENTAL OZONE IMPACTS BY USING THREE  
COMPLEMENTARY TECHNIQUES IN AN INDUSTRIAL BASSIN IN NORTHERN FRANCE**

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Ozone is one of the most problematic pollutant as well for health as for environment. Bioindication has allowed to show that a decrease in precursors emission could lead, in some cases, to an increase of ozone impacts, especially downtown and in industrial area. We've studied this pollution in Dunkerque area. The aim of this study was to evaluate environmental impacts of ozone during some summers. Environmental impacts were evaluated using 13 biostation equipped with sensitive tobacco plants. Atmospheric concentrations were determined with four automatic stations from Opal'Air network. This was completed with passive samplers displayed on some biostations. Results from the different methods were correlated. Ozone concentrations are conditioned by climatic conditions and presence of precursors. Necrosis on tobacco leaves were clearly linked with ozone concentrations and exposure conditions. This work has enabled us to put in advance ozone in particular situation as downtown or in industrial area. In a second way, these experiments conducted us to associate three complementary techniques for ozone monitoring. With tobacco, we've obtained a more precise picture of the ozone impacts and we've observed that the combination of tobacco and passive samplers could be a good alternative of automatic network in areas which are not equipped with.