

Heterogeneous atmospheric reactivity of pesticides currently used in viticulture

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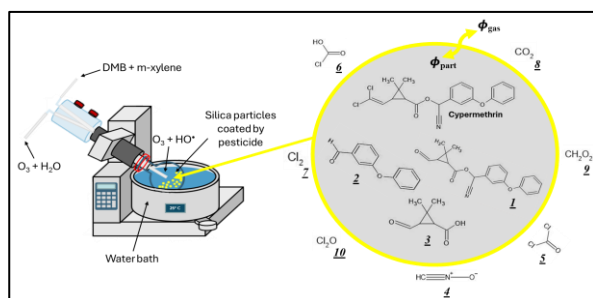
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OBJECTIVES

- Study of the atmospheric reactivity of nine pesticides commonly used in viticulture adsorbed on silica particles with ozone (O_3) and hydroxyl radicals ($\cdot OH$).
- Determination of the atmospheric half-lives of the pesticides under study.
- Identification of the degradation products after hydrolysis and oxidation by these two atmospheric oxidants in both gaseous and particulate phases.

HIGHLIGHTS

- Overall atmospheric half-lives can vary from a few days to more than one week.
- The 9 studied pesticides can be classified as Persistent Organic Pollutants (POPs) with respect to O_3 and $\cdot OH$.
- 10 degradation products have been identified for cypermethrin between the two phases, including phosgene (Cl_2CO), known as a toxic chemical warfare gas even at low concentrations.
- 18 and 22 degradation products have been identified for pendimethalin and cyprodinil, respectively, with no toxicological data available for most of them.



The degradation products of cypermethrin and their distribution between the particulate and gaseous phases.