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**ELECTROCHEMICAL AND THEORETICAL ASSESSMENT OF WINE BY
MEANS OF COMPLEXATION PROCESSES WITH ZN AND CU**

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Fermentation of wines is a process which involves many different chemical transformations affecting the concentration of most of the components of this complex matrix.

In the present work, an electrochemical technique DPASV will be used to follow up the evolution of ligand-metal complexes during the first sixty days of a wine fermentation. The used approach consisted in the study of the complexing capacity of natural occurring ligands on wine with respect to Zn and Cu by means of stripping voltammetry in acetate pH 4 buffered 1:5 diluted samples onto which increasing amounts of standard metals were added. The resulting titration curves allowed the ligand concentration to be estimated, and the Scatchard and/or Langmuir algorithm transformation permitted the elucidation of the predominant stoichiometries of existing complexes. This technique has proved very sensitive to detect changes in the composition of samples along fermentation time as a function of major ligand populations.

Molecular modelling studies of the main polyphenols present in wine were undertaken with Hyperchem®. These studies were done in the presence of Cu and Zn in order to confirm the stoichiometry of the most energetically favourable ligand-metal complexes.