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### Molecular classification of oils content: Antifungals and antimicrobials

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*Mentha pulegium* and *Eucalyptus camaldulensis* are important plant species with applications in flavouring processed foods. Their essential oils were tested for antifungal activity to explore biocontrol ways vs. fungal rot of apples in storage. Extracts analyses by gas chromatography-mass spectrometry revealed *M. pulegium* dominated by pulegone and *E. camaldulensis*, by 1,8 cineole and  $\alpha$  pinene. Oils antifungal activity was studied vs. *Alternaria alternata* and *Penicillium expansum*. Oil of *M. pulegium* is thrice most active than *E. camaldulensis*. Chemical components show synergism. Inhibition suggests food-preservation application. Classification algorithms are proposed based on information entropy and its production. Oils components are classified by numbers of C=C bonds, O atoms and cycles. Classification algorithms are based on information entropy. When applying procedures to moderate-size sets, excessive results appear compatible with data and suffer combinatorial explosion; however, after equipartition conjecture one obtains selection criterion resulting from classification between hierarchical trees. Information entropy permits classifying oils components and agrees with principal component analyses.

#### Biography

Francisco Torrens has completed his PhD at the age of 29 years from Universitat de Valencia and Postdoctoral studies from Universite de Nancy. He is the Director of the Molecular Simulation and Computer-Aided Drug Design and Development Unit in the Institute for Molecular Science UV, a Premier Nonprofit University. He has published more than 350 papers in reputed journals, 1600 presentations and has been serving as an Editorial Board Member of repute.

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