

## Chemical Compositions of the Essential Oils of the Aerial Parts of *Chamaemelum mixtum* (L.) Alloni

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### Abstract :

The chemical compositions of the aerial parts essential oils of *Chamaemelum mixtum* (L.) Alloni from Corsica and Sardinia were investigated employing gas chromatography and gas chromatography–mass spectrometry (GC-MS). The structure of (Z)-heptadeca-9,16-dien-7-one, a natural compound not previously described, was elucidated by GC-MS (electron impact and chemical ionization) and one-dimensional and two-dimensional nuclear magnetic resonance spectroscopy. The variation in *C. mixtum* essential oil was studied, and statistical analysis showed the clustering of oil samples into three groups according to the amount of oxygenated compounds; these groups correlated to the harvest area. The strong biological activity of the oxygenated fraction (minimum inhibitory concentration of <0.1 mg/mL) of the Corsican oil against *Candida albicans*, *Citrobacter freundii*, *Enterococcus faecalis*, *Escherichia coli*, *Klebsiella pneumoniae*, *Listeria monocytogenes*, and *Staphylococcus aureus* can be attributed to the presence of irregular monoterpene alcohols and (Z)-heptadeca-9,16-dien-7-one.

### Keywords :

*Chamaemelum mixtum* (L.) Alloni essential oil; chemical variability; (Z)-heptadeca-9,16-dien-7-one; irregular oxygenated monoterpenes; GC-MS; NMR; antibacterial activity.

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