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The use of instrumental technique and chemometrics for essential oil authentication: A review

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THE USE OF GC-MS AND FTIR SPECTROSCOPY COUPLED WITH MULTIVARIATE ANALYSIS FOR THE DETECTION OF RED GINGER OIL ADULTERATION

Syafri, S. , Jaswir, I. , Yusof, F. (2022) *Rasayan Journal of Chemistry*

A novel qnmr application for the quantification of vegetable oils used as adulterants in essential oils

Truzzi, E. , Marchetti, L. , Benvenuti, S. (2021) *Molecules*Novel Strategy for the Recognition of Adulterant Vegetable Oils in Essential Oils Commonly Used in Food Industries by Applying ¹³C NMR SpectroscopyTruzzi, E. , Marchetti, L. , Benvenuti, S. (2021) *Journal of Agricultural and Food Chemistry*[View all related documents based on references](#)

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Abstract

The use of essential oils for diverse purposes shows the increasing demand worldwide. These conditions encouraged fraudulent practices to maximize profit and set competitive prices. This review describes the characterization of essential oils (EOs) and their extraction technique before analysis. The type of adulteration and the technique for authentication, including chromatographic, spectroscopic, and others, either alone or in combination with the chemometrics technique, are also profoundly explained. Many studies use a combination of targeted and non-targeted approaches. Combining these two approaches were considered to produce accurate and reliable results for the authentication of EOs. The most advanced method was for authentication of lavender oil, citrus oils (lemon, bergamot, neroli), rose oil, peppermint oil, wintergreen oil, patchouli oil, and citronella oils. However, many EOs traded, and no international standards to regulate them. © 2022 The Author(s)

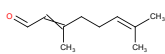
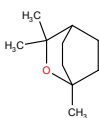
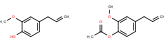
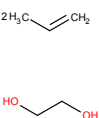

Author keywords

Adulteration; Authenticity; Chemometrics; Essential oils

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