



Chemical composition and evaluation of the antioxidant activity of *Tagetes lucida* essential oil

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Tagetes lucida is an aromatic plant, popularly known as pericón, anisillo, hierbanis, and tarragon. This species belongs to the Asteraceae family and is native to Guatemala, Honduras and Mexico. It is distributed mainly in Central and South America, where it is used for flavoring food, for medicinal and ornamental purposes. Pericón possesses biological activities such as anti-inflammatory, insecticidal, bactericidal and anesthetic (1). The aim of this study was to analyze the essential oil (EO) and to evaluate its antioxidant activity. The EO was obtained by microwave radiation-assisted hydrodistillation (MWHD) in a Clevenger-type apparatus with a Dean Stark distillation receiver. The chromatographic analysis was performed using Agilent Technologies 6890 GC equipment with 5973 mass selective detector (EI, 70 eV). Chromatographic columns DB-5 and DB-WAX (60 m X 0.25 mm ID X 0.25 μ m) were used. The injection port temperature was 250 °C, split injection mode (30:1). The oven temperature was programmed from 45-150 °C, at 4 °C min⁻¹, was increased to 250 °C (5 min) at 5 °C min⁻¹ and 275 °C (15 min), at 10 °C min⁻¹. The identification of compounds was performed by comparing their mass spectra with those of the databases ADAMS, NIST and Wiley and their linear retention indices with those found in the literature. The antioxidant activity was determined by oxygen radical absorbance capacity (ORAC) for hydrophilic antioxidants (4), with some modifications. The predominant essential oil component was estragole (99.1 %), accompanied by β -myrcene (0.6 %) and *trans*-ocimene (0.1 %). Guzmán and Manjarrez (2) reported methyl eugenol (80 %) and estragole (12 %) as the major components of *T. lucida* EO; and Cicció (3) found 95-97 % of estragole. The EO antioxidant capacity (234 \pm 8 μ mol Trolox® g⁻¹ EO) was lower than that of commonly used substances, such as BHT (457 \pm 9 μ mol Trolox® g⁻¹ substance) and α -tocopherol (550 \pm 13 μ mol Trolox® g⁻¹ substance).

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