# Chemical characterization of secondary metabolites of the *Ambrosia peruviana* (Asteraceae) essential oil by gas chromatography coupled to mass spectrometry

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The genus *Ambrosia* belongs to the Asteraceae family and it has 40 species; it is known for its ethnobotanical uses (1,2). The antioxidant (3), antifungal and cytotoxic (4) effects of its essential oils have been studied. *Ambrosia peruviana* is one of the species of this genre. It is native to Central and South America and is commonly known as altamisa, artemisa, altamiz, alcanfor, ambrosia silvestre and maki. This work aimed to study the chemical composition of the essential oil (EO) of *A. peruviana*. The vegetal material used was collected in the municipality of Zapatoca, Santander, Colombia. The taxonomic identification of the botanical samples was done at the Colombian National Herbarium (Bogota) and a voucher specimen was kept as Nº COL 579246. EO extraction was performed by hydro-distillation assisted by microwave radiation (MWHD). The total extraction time was 45 min, divided by three stages(each one of 15 min). The analysis of secondary metabolites was carried out by gas chromatography coupled to mass spectrometry (GC/MS), by using two capillary columns:a polar stationary phase of polyethylene glycol) (DB-WAX, J & W Scientific, Folsom, CA, USA) of 60 m X 0.25 mm (i.d.) X 0.25 µm ($d_f$), and a non-polar stationary phase of 5% phenyl methylsiloxane (DB-5MS, J & W Scientific, Folsom, CA, USA) 60 m X 0.25 mm (i.d.) X 0.25 µm ($d_f$).The GC oven was programmed from 45 °C (5 min), to 150 °C (2 min) at 4 °C $min^{-1}$, then to 250 °C (5 min) at 5 °C $min^{-1}$ and finally to 290 °C (60 min) at 10 °C $min^{-1}$; the injection mode was split (30:1*). ar*-Curcumene (24 %) was identified as the major component of *A. peruviana* EO, followed by *β*-bisabolene (17 %), *γ*-curcumene (13 %), phytol (5 %) and spathulenol (4 %). Studies of antimicrobial activity of *A. peruviana* EO(1) have shown a minimum inhibitory concentration (MIC) between 350-500 µg $ml^{-1}$.

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