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Chemical Composition of French Mimosa Absolute Oil

Journal of Agricultural and Food Chemistry, **58**, 1844-1849 (2010)
Rodolphe Perriot *et al.*

Tags
HP-20M, HP-1, DB-1, DB-XLB, 5890A GC, 6890N GC, 5973 MS, 5971 MS, materials testing & research, consumer products

Abstract
Since decades mimosa (*Acacia dealbata*) absolute oil has been used in the flavor and perfume industry. Today, it finds an application in over 80 perfumes, and its worldwide industrial production is estimated five tons per year. Here we report on the chemical composition of French mimosa absolute oil. Straight-chain analogues from C6 to C26 with different functional groups (hydrocarbons, esters, aldehydes, diethyl acetals, alcohols, and ketones) were identified in the volatile fraction. Most of them are long-chain molecules: (*Z*)-heptadec-8-ene, heptadecane, nonadecane, and palmitic acid are the most abundant, and constituents such as 2-phenethyl alcohol, methyl anisate, and ethyl palmitate are present in smaller amounts. The heavier constituents were mainly triterpenoids such as lupenone and lupeol, which were identified as two of the main components. (*Z*)-Heptadec-8-ene, lupenone, and lupeol were quantified by GC–MS in SIM mode using external standards and represents 6%, 20%, and 7.8% (*w*/*w*) of the absolute oil. Moreover, odorant compounds were extracted by SPME and analyzed by GC-sniffing leading to the perception of 57 odorant zones, of which 37 compounds were identified by their odorant description, mass spectrum, retention index, and injection of the reference compound.

Chemical composition and antibacterial, antifungal and antioxidant activities of the flower oil of *Retama raetam* (Forssk.) Webb from Tunisia

Natural Product Research, **29**, 789-796 (2010)
Hayet Edziri *et al.*

Tags
HP-20M, HP-5, HP-5ms, HP-INNOWax, 5890 GC, materials testing & research, consumer products

Abstract
The chemical composition of the essential oils obtained by hydrodistillation from the flowers of *Retama raetam* (Forssk.) Webb cultivated in Tunisia was determined by GC and GC/MS analysis. A total of 50 components representing 98.58% of the oil were identified: nonanal (35.75%), α-humulene (29.29%), acetaldehyde (7.84%), linalool (5,62%), myrcene (3.38%), tridecanal (2.21%), β-caryophyllene (1.79%), α-terpinyl acetate (1.46%), terpinolene (1.26%) and methyl anthranilate (1.06%) were found to be the major components. The oil was evaluated for antibacterial and antifungal activities using a microdilution assay against some bacteria and yeasts. The minimal inhibitory concentrations (MIC) of the essential oil varied between 0.625 and 5 mg mL^{-1} and the minimum bactericidal concentrations (MBC) were superior to 5 mg mL^{-1} of oil for most strains. The antioxidant potential of the essential oil was evaluated using the 2,2′-diphenyl-1-picrylhydrazyl free radical scavenging method. The essential oil possesses good antioxidant properties (IC_{50} = 0.800 mg mL^{-1}). The results may suggest that the flower oil of *R. raetam* possesses compounds with antibacterial, antifungal and antioxidant capacities, and thus the oil can be explored as a natural preservative ingredient in food and/or pharmaceutical preparations.

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