

OP9. Characterization of the odorant constituents of *Helichrysum italicum* essential oil

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Helichrysum italicum ssp. *italicum* (Asteraceae) is widespread all over the Mediterranean basin. It is sometimes called the “curry plant” because of the typical strong spicy smell of its leaves. In the flavor & fragrance industry, this species is extracted for the production of the absolute, or hydrodistilled to furnish an essential oil which is widely used in cosmetics and in aromatherapy. The composition of the essential oil has been extensively studied, and depending on the geographical origin of the plant, the main constituent is either neryl acetate **1** or monoterpenes like α -pinene **2** (Fig. 1). Some uncommon 2-methyl-1,3-diketones such as **7-11** appear to be specific components of *H. italicum* and have never been observed in other species so far [1,2]. In the course of our analytical studies devoted to the identification of the key odorants of fragrant plants, we performed a Gas Chromatography-Olfactometry (GC-O) analysis of a sample of Corsican *H. italicum* essential oil (neryl acetate type), using the Aroma Extract Dilution Analysis (AEDA) methodology. The identification of the odorants was realized by a detailed fractionation of the essential oil by liquid-liquid basic extraction, distillation and column chromatography, followed by GC-MS and GC-O analyses of some fractions, and co-injection of commercial and synthesized reference compounds. We could demonstrate that the characteristic curry/spicy odor of the plant was mostly due to the saturated diketones **7** and **8**, together with some other volatiles more common as essential-oil constituents (such as 1,8-cineole **3**, nerol **4**, eugenol **5**, *p*-cresol **6**, etc.). In contrast, the olfactory contribution of **1** and of the unsaturated diketones **9**, **10** and **11** was much less significant.

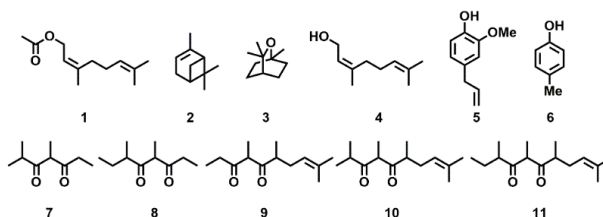


Fig. 1. Main constituents and odorants of *Helichrysum italicum* essential oil.

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