

Essential oil of *Tanacetum dumosum* as a new source for fragranol

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Background and Aims: *Tanacetum* (tansy) belongs to a tribe Anthemideae that is one of the largest tribes of Asteraceae family. The essential oils of several Iranian tansies were analyzed by different authors and found to have monoterpenoids as major constituents. Among them pinenes, 1,8-cineol, camphor, chrysanthenol derivatives and thujones are detected more frequently. To the best of our knowledge this is the first report on characterization of chemical composition of the essential oil of *T. dumosum*.

Methods: The aerial parts of the *Tanacetum dumosum* Boiss., was collected from Dena mountain at altitude of 3200 m in July 2011. The essential oil of the leaves and flowers of plant (70 g) was extracted by hydrodistillation method to yield 0.2 ml of pale-yellow oil, dried over anhydrous sodium sulfate and analyzed by gas chromatography-mass spectrometry (GC-MS) and GC- flame ionization detector (GC-FID).

Results: Twenty seven mono and sesquiterpenoids were identified in oil using GC retention indices (RRI) and mass spectral (MS) data, obtained from GC and GC-MS experiments. Among them the mono terpene hydrocarbons, santolin triene (2.2%) and α -pinene (2.2%) and the oxygenated monoterpenes, fragranol (26.7%), 1,8-cineol (5.7%), fragranyl acetate (23.6%) and trans-carvyl acetate (10.1%) were detected as the major constituents. Helifolenol A, Beta-sesquiphellandrene, caryophyllene oxide and germacrene D are the major sesquiterpenes detected in this oil but still in lower quantities compared to the monoterpenoids fraction.

Conclusion: monoterpene hydrocarbons were identified as one of the major components of the oil. The good smell of the plant may be due to the presence of fragranol and its acetate ester and may suggest this plant for future use in perfume industries.

Keywords: *Asteraceae*; *Tanacetum dumosum*; Essential oil; Fragranol