

**PP92. The essential-oil composition of *Inula helenium* L. subsp. *turcoracemosa* Grierson from Turkey**Ali Gambo Illo Daoura<sup>1</sup>, Hüseyin Servi<sup>2\*</sup>, Mustafa Alkan<sup>3</sup>, Kaan Polatoğlu<sup>4</sup>**Keywords:** essential oil, *Inula helenium*, caryophyllene oxide, eudesma-5,11(13)-dien-8,12-olide, isoolantolactone

*Inula helenium* L. (Asteraceae) lipophilic root extracts were previously reported to contain antiproliferative eudesmane (alantolactone derivatives), germacrane and elemene-type sesquiterpene lactones [1]. Additionally, according to a previous report, the essential oil of *I. helenium* roots contained predominantly alantolactone (52.4%), and isoolantolactone (33.0%), while the oil displayed fungistatic and bacteriostatic properties [2]. In the current study, the essential oil composition of the aerial parts of *I. helenium* subsp. *turcoracemosa* collected in Trabzon was determined. The essential oil was obtained by hydrodistillation (3 h) using a Clevenger apparatus. The essential-oil yield was below 0.01% (v/w). The essential oil was trapped in *n*-hexane and dried over anhydrous Na<sub>2</sub>SO<sub>4</sub>. The essential oil was analyzed by GC-MS without further dilution. The essential oil was analyzed with an Agilent 5977 MSD GC-MS system operating in EI mode; injector and MS transfer line temperatures were set at 250 °C. Splitless injection was used in the analysis. Innowax FSC column (60 m x 0.25 mm, 0.25 µm film thickness) and helium as the carrier gas (1 mL/min) were used in GC-MS analyses. The oven temperature program was: 60 °C for 10 min and then raised to 220 °C at a rate of 4 °C/min, afterward the temperature was kept constant at 220 °C for 10 min and then raised to 240 °C at a rate of 1 °C/min. Mass spectra were recorded at 70 eV with the mass range *m/z* 35-425. Relative amounts of the separated compounds were calculated from the integration of the peaks in MS chromatograms. Identification of essential-oil components was carried out by comparison of their retention indices (RI), relative to a series of *n*-alkanes (C<sub>5</sub> to C<sub>30</sub>), with the literature values, as well as by mass spectral comparison. Ninety-one compounds were identified representing 82.4% of the detected oil constituents. The main components of the oil were caryophyllene oxide (14.7%), eudesma-5,11(13)-dien-8,12-olide (alantolactone, 6.7%), isoolantalactone (3.8%), and aromadendrene oxide (3.3%). The aerial parts oil of *I. helenium* subsp. *turcoracemosa* also contained high amounts of eudesmane sesquiterpenes in accordance with the previous reports on *I. helenium* root essential oil. Our results indicate that eudesmanolides are also present in the aerial parts essential oil.

**References:**

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