

Analysis of the essential oils from 3 species of cymbocarpum (Apiaceae) from Iran

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Background and Aims: Apiaceae is one of the biggest plant families of Iran, holding 111 genera and 350 species. This family contains several aromatic and medicinal species like carrot, coriander, caraway, cumin, fennel, etc. In different organs of these species have been recognized compounds like essential oils and coumarins. Three Species has been reported for Cymbocarpum in flora of Iran including *C. stenocarpa*, *C. erythraeum* and *C. anethoides*. In this article, compositions of essential oil of them have been analyzed.

Methods: The first species was collected from Ghazvin Province (July 2006) and others were collected from East Azerbaijan Province (June 2010), (at the flowering period), the samples were stored in the Central Herbarium of ACECR. The essential oils were obtained by Hydrodistillation in a Clevenger type apparatus and were dried over anhydrous Sodium Sulphat. The yields of essential oils were 0.3, 0.4 and 0.5% w/w, respectively. Then, the oils stored at +4°C in the dark place until analysis. The chemical compositions of essential oils were analysis by GC and GC/MS method. The identification of the essential components was based on calculation of retention Indices and comparison of mass spectra with standards.

Results: 42, 33 and 80 components were identified in the essential oil of aerial parts, representing of the 96, 95 and 98% of the total oils, respectively. The major constituents of *C. stenocarpa* were 3-dodecen-1-al (37.1%), decanal (18.0%), 2-methylene cyclopentanol (7.7%) and 2-decenal (6.7%). In *C. erythraeum* 2-dodecenal (29.4%), 2-tridecanal (13.7%), nonane (9.1%) and α -pinene (8.6%) and in *C. anethoides* 2-dodecenal (45.5%), E-2-decenal (17.9%), α -pinene (8.4%) and E-2-tridecanal (8.35%) were main components.

Conclusions: The main class of the compounds was found in the Genus to be aliphatic aldehydes. These components are the major in the essential oil of some other Apiaceous herbs, such as *Ducrosia anethifolia* and *Heracleum* sp.

Keywords: Cymbocarpum; *C. stenocarpa*; *C. erythraeum*; *C. anethoides*; Essential oil; Aliphatic aldehydes