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Comparison of Chemical Composition of Essential Oils and Floral Water in the Leaves, Roots and Flowering Organs of *Ferula gummosa* Boiss.

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Ferula gummosa boiss. From Apiaceae family is an Iranian medicinal and aromatic plant which has been used as an antiepileptic remedy in Iranian traditional medicine, distributed in north, northeast and central parts of Iran. It has also multiple industrial applications especially in perfumery. Most of these valuable metabolites are extracted from a yellowish white oleo-gum called Galbanum and it is harvested from the plant's roots through the process of tapping. It's increasing market demand and the high price of the oleo-gum cause the overharvesting and unfortunately reduced the plants regeneration and caused the danger of extinction. In This study, the metabolites in essential oil and floral water of different organs of this plant was evaluated. The samples were collected from nashalj, near Kashan from Isfahan province with 2100 meters altitude from sea level. Leaves, roots and flowering organs were collected and shade dried and then were hydro distilled by Clevenger for 4 h. The essential oil as a nonsoluble part of volatile oil over the water was separated and the floral water was gathered by boiling the same parts and collecting the cooled steam after removing the essential oil. The floral water was partitioned with etylacetate and both samples were analyzed by GC-FID and GC-MS. The main components in the essential oils of leaves, roots and flowering parts of *ferula gummosa* were β -Pinene 15.0, 41.0 and 20.0%, α -Pinene 2.6, 2.0 and 2.1%, Myrcene 3.2, 1.3 and 2.0%, δ -3-Carene 5.3, 0.1 and 4.2% respectively, while the major compounds in floral water of leaves were *trans*-Pinocarveol 2.6%, *endo*-Fenchyl acetate 2.3% and Allohimalol 6.3%. The main components in floral water of roots were α -Bulnesene 4.7%, Himachalol 4.8%, Intermeol 5.4%. Besides Bornyl acetate 4.3%, Hedycaryol 12%, Intermedeol 4.2% were the major components in floral water of flowering part [1].

Keywords: *Ferula gummosa*, Galbanum, Essential oil, oleo-gum, GC/MS

Reference

[1] Sayyah, M.; Mandgary, A.; Kamalinejad, M. *Journal of Ethnopharmacology*. **2002**, 82, 105-109.