COMPOSITION OF THE ESSENTIAL OIL OF *Trigonella disperma* FROM IRAN

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The genus *Trigonella* L. with close to 135 species belongs to the tribe Trifolieae and family of Fabaceae. Most of the species are distributed in the dry regions around the E Mediterranean, W Asia, S Europe, and N and S Africa, with only one species being present in S Australia [1–3]. They are herbaceous or annual plants with pinnately trifoliate leaves, often emitting an odor. In Flora Iranica, the genus is represented by ca. 27 species, most of which are endemic [4]. Various species of the genus *Trigonella* are important from the medical and culinary aspects. Among these, *Trigonella foenum-graecum* L. is commonly grown as a vegetable. This species has been used as an anthelmintic against most common nematodes. It has also been used in Indian folk medicine as an antipyretic, diuretic, and supportive, and for treatment of dropsy, heart disease, chronic cough, and spleen and liver enlargement. Another species, *Trigonella caerulea* is used as food in the form of young seedlings and in cheese making [5–8]. There are few reports on the essential oil content of members of this genus [9–12]. The essential oil of *Trigonella disperma* Bornm., a widespread species of the genus in the western part of Iran, has not been studied previously. We report here the composition of the essential oils of *T. disperma*, which is an endemic species growing wild in Iran, for the first time.

GC and GC–MS analyses showed that 87.1% of the leaf oil comprised a total of 18 compounds [13]. The relative concentrations of the oil compounds identified are presented in Table 1 according to their elution order on the DB-1 column. Hydrocarbons represented 35.7% of the total oil, pentacosane (27.3%) being the most abundant compound.

Significant amounts of oxygenated sesquiterpenes (32.4%) were found, spathulenol (17.3%) being the main component. The oil also contained phytol (4%) as a diterpene, sesquiterpene hydrocarbons (2.9%), oxygenated monoterpenes (1.8%), and other compounds (10.3%). Our results showed that the main compounds of *T. disperma* were different from *T. foenum-graecum* grown in Iran. δ-Cadinene (27.6%), α-cadinol (12.1%), γ-eudesmol (11.2%), and α-bisabolol (10.5%) were the main components of the essential oils obtained from the aerial parts of *T. foenum-graecum* in Iran [9].

TABLE 1. Composition of the Essential Oil of *Trigonella disperma* Bornm. from Iran

Compound[a]	RI[b]	Percentage	Compound[a]	RI[b]	Percentage
p-Xylene	800	1.0	NI[c]	1708	3.1
Decanal	1184	0.6	NI[c]	1716	1.8
Thymol	1265	1.1	NI[c]	1728	1.3
Neryl acetate	1431	0.7	Myristic acid	1738	2.1
β-Lonene	1468	2.9	Octadecane	1799	1.2
Pentacosane	1498	27.3	Hexahydroxyfarnesyl acetone	1829	6.7
Spathulenol	1572	17.8	Nonadecane	1898	0.9
Caryophyllene oxide	1580	7.9	Dibutyl phthalate	1920	3.9
Hexadecane	1597	3.9	Palmitic acid	1938	1.8
NI[c]	1661	5.3	Phytol	2100	4.0
NI[c]	1667	1.4	Tricosane	2297	0.9
Heptadecane	1699	2.4	Total		100

[a]Compounds listed in order of their RI.

[b]RI (retention index) measured relative to n-alkanes (C_6-C_{24}) on DB-1 column.

[c]NI: not identified.

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