

Artemisia vulgaris L.

(2)

(1)

(1)

(1)

(2)

2010/10/27

2011/05/02

Artemisia

.GC/MS

-

() *vulgaris* L.

98.82%

55

Camphor 8.65%

:

trans-Anethole 6.54%

Davanone 6.98%

trans-Pinocarvyl acetate 7.65%

2-methyl-Naphthalene 4.45%

 β -Caryophyllene 4.31% δ^3 -Carene 5.69%

Hexahydrofarnesyl

Limonen-6-ol 3.58 %

Germacrene D 4.15 %

 β -Elemene 2.70 % acetone 3.54%*Artemisia vulgaris* L.

:

.GC/MS

Chemical Composition of the Essential Oil of *Artemisia vulgaris* L. from Syria

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ABSTRACT

Chemical composition of the essential oil of the aerial parts of *Artemisia vulgaris* L. (*Asteracea*), grown in Syria was determined by GC/MS. The oil obtained by hydrodistillation, was found to contain 55 components, accounting for 98.82 %. The major components determined were Camphor 8.65%, *trans*-Pinocarvyl acetate 7.65%, Davanone 6.98 %, *trans*-Anethole 6.54 %, δ^3 -Carene 5.69 %, β -Caryophyllene 4.31 %, 2-methyl-Naphthalene 4.45%, Germacrene D 4.15 %, Limonen-6-ol 3.58 %, Hexahydrofarnesyl acetone 3.54 %, and β -Elemene 2.70 %.

Key words: *Artemisia vulgaris* L., *Asteracea*, Essential oil, GC/MS.

- (*Asteracea*
.[1] 800 family)
- A. cina* *A. absinthium* :
.[2] *A. vulgaris* *A. dracunculus*
- (Mother Herbarum)
- [3] (Mugwort)
Midge) (Muggia)
- . [4] (
- 1994 N. Bisset
Amenorrhoea
Repellent insects Anthelmintic
.[5] Antibacterial
2008 Temraz *et al.*
- in vitro*
Gilani *et al.* . [6] *in vivo*
- . [7]
- . [8-10]
- Nano *et al* 14 19
Monoterpenes

70% Myrcene

27% 1,8-cineole

18 Borneol Acetate

19% Borneol

12% Camphor

%

. [11]

1,8-Cineole (10%)

Myrcene (14%)

Sabinene (16%)

. [12]

Borneol Camphor

1,8-Cineole

. [13-14] Camphene

Limonene

Thujone :

[15] Isothujone

A. vulgaris

. [16]

Caryophyllene oxide (31 %)

β -Cubebene (12%)

β -Caryophyllene (24%) :

. [17] β -Elemene (6%)

A. vulgaris

L.

:

2010

3

100 g.

(

(20 – 25 C°)

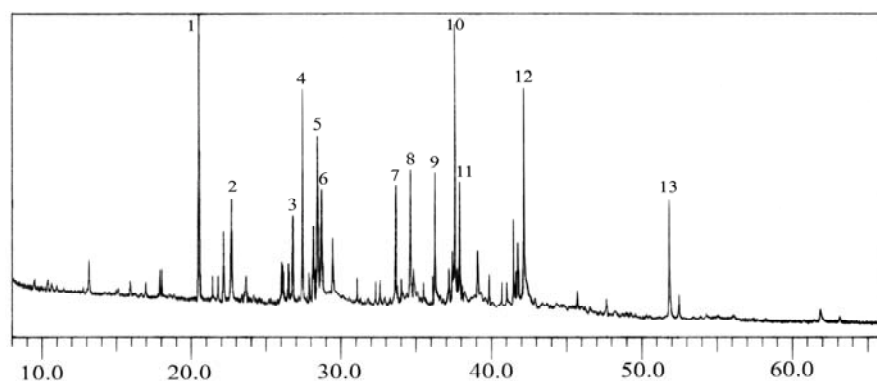
)

35 C°

0.3 %

4C°

Shimadzu GC-17A/QP5050 GC/MS
 (30 m X (OV-5 fused Silica)
 1 mL/min 0.25 mm, i.d. 0.25 μm)
 .(1:10) (split mode)
 4 40 C° .280 C°, 250 C°
 280 160 C° .160 C° 3 C°
 . 10 6 C° C°
 .(70 eV) EI 30 – 550 m/z



A. vulgaris L.

GC/MS

(1)

1- Camphor, 2- Azulene, 3- Chrysanthenyl acetate, 4- δ^3 -Carene, 5- *trans*-Anethole
 6- 2-Methyl Naphthalene, 7- β -Elemene, 8- *trans*-Caryophyllene, 9- Germacrene D, 10- *trans*-
 Pinocarvyl acetate, 11- Limonene-6-ol, 12- Davanone, 13- Hexahydrofarnesyl acetone.

Camphor (8.65 %) (1 1)

trans-Pinocarvyl acetate

.Davanone (6.98 %) (7.65 %)

trans-

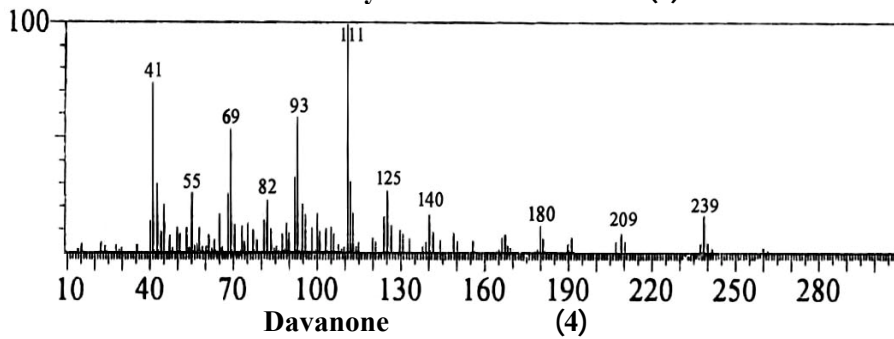
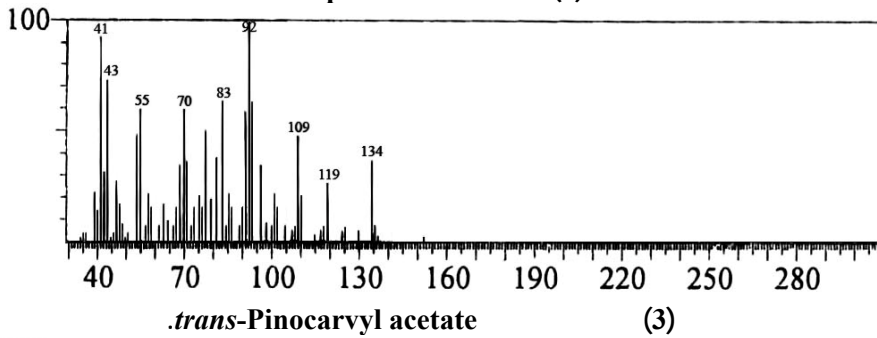
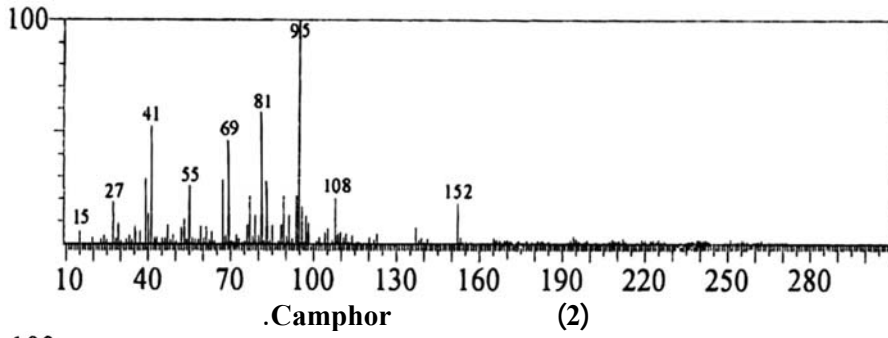
trans-Pinocarvyl acetate (7.65 %)

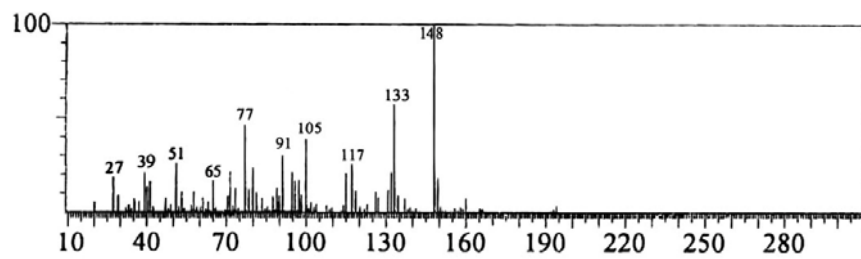
Camphor (8.65 %)

Limonene- (3.58 %) δ^3 -Carene (5.69 %) Anethole (6.54 %)
 β -Caryophyllene Davanone (6.98 %) .6-ol
Hexahydrofarnesyl acetone Germacrene D (4.15%) (4.31%)
 β -Elemene (2.70%) (3.54 %)

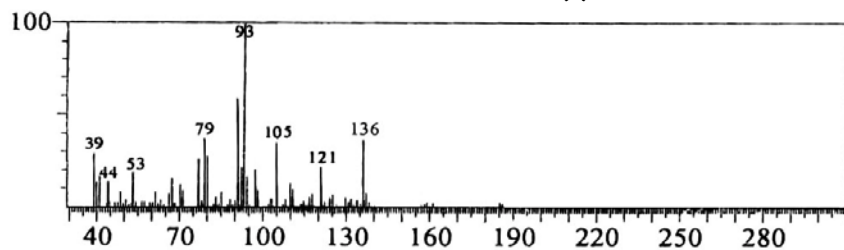
(6 5 4 3 2)

(7)





trans-Anethole (5)



δ^3 -Carene (6)

A. vulgaris L.

trans-

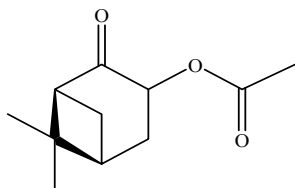
Davanone

Pinocarvyl acetate

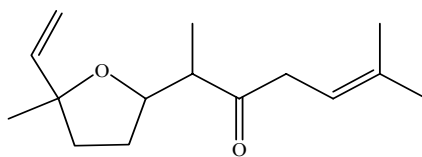
(5.2%)

Davanone

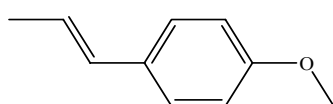
[1]



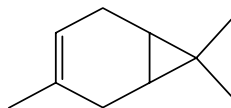
trans-Pinocarvyl acetate



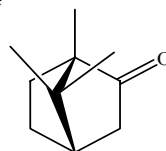
Davanone



trans-Anethole



δ^3 -Carene



Camphor

(7)

Artemisia vulgaris L.**(1)**

	RT		%
1	9.491	2- β - Pinene	0.32
2	10.365	Myrcene	0.48
3	10.661	6-Benzoylhexanoic acid	0.21
4	13.200	1,8- Cineole	1.02
5	15.893	Linalool Oxide	0.38
6	16.933	<i>cis</i> -Linalooloxide	0.46
7	17.950	Linalool	0.65
8	18.178	<i>trans</i> -2-Nonen-1-ol	0.55
9	20.486	Camphor	8.65
10	21.355	9,12,15-Octadecatrienal	0.43
11	21.759	Artemisia Alcohol	0.44
12	22.141	Borneol	2.21
13	22.667	Azulene	3.87
14	23.641	Estragol	1.35
15	26.048	Cuminal	1.20
16	26.133	Carvone	1.08
17	26.474	Linalyl Acetate	1.02
18	26.766	Chrysanthenyl Acetate	2.85
19	27.416	δ^3 -Carene	5.69
20	27.798	Pentamethyl Benzene	0.57
21	27.945	(-)-Myrtenol	0.48
22	28.140	Isobornyl Acetate	2.04
23	28.406	<i>trans</i> -Anethole	6.54
24	28.684	Naphthalene , 2-methyl-	4.45
25	29.428	Naphthalene , 1-methyl-	1.76
26	31.092	(+)-Grandisol	0.34
27	32.267	Ylangene	0.38
28	32.570	α -Copaene	0.57
29	33.638	β -Elemene	2.70
30	34.041	Methyl Eugenol	0.42
31	34.602	β -Caryophyllene	4.31
32	34.865	β -Copaene	0.75
33	35.459	Alloaromadendrene	0.54
34	36.089	Neryl Acetate	0.91
35	36.249	Germacrene D	4.15
36	37.174	γ -Muurolen	0.70
37	37.416	β -Ionone	1.45
38	37.573	<i>trans</i> - Pinocarvyl acetate	7.65
39	37.750	γ -Patchoulene	0.42
40	37.889	Limonen-6-ol	3.58
41	38.075	α -Gurjunene	0.91
42	38.212	2,3,7-Trimethyloctanal	0.52

			...(1)
43	39.078	δ -Cadinene	1.12
44	39.819	γ -Selinene	0.51
45	40.674	β -Bisabolene	0.53
46	41.008	<i>d</i> -Nerolidol	0.66
47	41.459	Artemisia Ketone	2.35
48	41.631	Spathulenol	0.95
49	41.753	Caryophyllene Oxide	1.60
50	42.156	Davanone	6.98
51	45.775	Bisabolone Oxide	0.42
52	47.733	Chamazulen	0.36
53	51.827	Hexahydrofarnesyl acetone	3.54
54	52.447	Isobutyl o-phthalate	0.43
55	61.922	Phytol	0.37
98.82			%
12			%
46			%
58			%
17.95			%
10.61			%
28.56			%
0.37			%
			1.18%

α -Thujone

Artemisia vulgaris L.

trans-Pinocarvyl Camphore :
 β - δ^3 -Carene *trans*-Anethole Davanone acetate
Limonen-6-ol 2-Methyl Naphtalene Caryophyllene
 β -Elemene Hexahydrofarnesyl acetone

trans-Pinocarvyl acetate

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