



PLANT THERAPY
100% PURE ESSENTIAL OILS

GC/MS BATCH NUMBER: C40105

ESSENTIAL OIL: CARROT SEED

BOTANICAL NAME: DAUCUS CAROTA

ORIGIN: INDIA

KEY CONSTITUENTS PRESENT IN THIS BATCH OF OIL	%
CAROTOL	76.6
DAUCENE	2.5
DAUCOL	2.3
β -BISABOLENE	2.1
trans- β -FARNESENE	1.5

Comments from Robert Tisserand: Fresh, tobacco-persimmon odor profile. This is a high carotol chemotype.

Date : August 14, 2017

SAMPLE IDENTIFICATION

Internal code : 17H07-PTH3-1-DM

Customer identification : Carrot Seed - India - C4010575R

Type : Essential oil

Source : *Daucus carota*

Customer : Plant Therapy

ANALYSIS

Method : PC-PA-001-15E06, "Analysis of the composition of a liquid essential oil by GC-FID" (in French).

Identifications double-checked by GC-MS

Analyst : Benoit Roger Ph. D.

Analysis date : 2017-08-14

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174

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IDENTIFIED COMPOUNDS

Identification	Column: BP5			Column: WAX			Molecular Class
	R.T.	R.I.	%	%	R.I.	R.T.	
Heptanal	3.13	909	0.03	0.02	1128	2.83	Aliphatic aldehyde
α-Thujene	3.31	920	0.01	0.60	948	1.23*	Monoterpene
α-Pinene	3.42	927	0.61	[0.60]	948	1.23*	Monoterpene
Camphene	3.71	944	0.04	0.04	996	1.54	Monoterpene
Thuja-2,4(10)-diene	3.80	949	0.03	0.08	1062	2.09*	Monoterpene
Angelic acid	4.06	965	0.02	0.01	1719	19.73	Aliphatic acid
Sabinene	4.14	969	0.05	[0.08]	1062	2.09*	Monoterpene
β-Pinene	4.20	973	0.25	0.24	1042	1.92	Monoterpene
Myrcene	4.48	989	0.54	0.51	1116	2.69	Monoterpene
α-Phellandrene	4.75	1005	0.02	0.01	1109	2.60	Monoterpene
para-Cymene	5.13	1025	0.05	0.06	1213	3.95	Monoterpene
Limonene	5.17*	1027	0.43	0.40	1141	3.01	Monoterpene
β-Phellandrene	5.17*	1027	[0.43]	0.02	1147	3.09*	Monoterpene
1,8-Cineole	5.20	1029	0.02	[0.02]	1147	3.09*	Monoterp. ether
cis-β-Ocimene	5.35	1037	tr	0.04	1194	3.66*	Monoterpene
trans-β-Ocimene	5.53	1047	0.01	0.01	1206	3.85	Monoterpene
γ-Terpinene	5.72	1057	0.04	[0.04]	1194	3.66*	Monoterpene
Terpinolene	6.20	1083	0.02	0.01	1228	4.17	Monoterpene
para-Cymenene	6.41	1095	0.03	0.02	1371	6.39	Monoterpene
Perillene	6.53	1100	0.03	0.01	1338	5.85*	Monoterp. ether
Linalool	6.69*	1106	0.02	0.03	1499	9.33	Monoterp. alcohol
trans-Sabinene hydrate	6.69*	1106	[0.02]	0.14	1485	8.94	Monoterp. alcohol
Nonanal	6.78	1109	0.05	[0.01]	1338	5.85*	Aliphatic aldehyde
trans-Pinocarveol	7.61	1139	0.03	0.28	1571	12.02	Monoterp. alcohol
(2E)-Nonenal	8.29	1164	0.04				Aliphatic aldehyde
Terpinen-4-ol	8.79	1182	0.01	0.63	1526	10.32*	Monoterp. alcohol
Myrtenal	9.31*	1200	0.04	0.06	1531	10.50*	Monoterp. aldehyde
Myrtenol	9.31*	1200	[0.04]	0.08	1706	18.84	Monoterp. alcohol
α-Terpineol	9.45	1203	0.04	0.07	1623	14.38	Monoterp. alcohol
Cuminal	11.37	1245	0.05	0.05	1673	17.04	Monoterp. aldehyde
δ-Elemene	15.14	1319	0.07	0.02	1410	7.14	Sesquiterpene
α-Terpinyl acetate	16.75	1343	0.02	0.02	1610	13.69	Monoterp. ester
Daucene	17.94	1361	2.54	2.57	1435	7.73	Sesquiterpene
Unknown (m/z = 159, 177 (73), 93 (73), 107 (67), 91 (57)... 220? (6))	18.08	1363	0.12				Oxygenated sesquiterp.
Daucene isomer	18.40	1368	0.36	0.42	1489	9.05	Sesquiterpene
β-Elemene	18.92	1375	0.02	0.78	1519	10.06*	Sesquiterpene
Geranyl acetate	19.62	1386	0.12	0.14	1694	18.09	Monoterp. ester
β-Caryophyllene	20.59	1400	0.72	[0.78]	1519	10.06*	Sesquiterpene
cis-α-Bergamotene	21.24	1408	0.04	0.03	1511	9.74	Sesquiterpene

Aromadendrene	21.51	1411	0.09	[0.06]	1531	10.50*	Sesquiterpene
<i>trans</i> - α -Bergamotene	22.16	1419	0.60	[0.63]	1526	10.32*	Sesquiterpene
<i>cis</i> - β -Farnesene	22.69	1425	0.15	0.19	1583	12.48*	Sesquiterpene
α -Humulene	23.38	1433	0.06	[0.19]	1583	12.48*	Sesquiterpene
Acora-3,9-diene?	23.89	1439	0.39				Sesquiterpene
<i>trans</i> - β -Farnesene	24.55	1447	1.53	1.48	1616	13.97	Sesquiterpene
Dehydroaromadendrene	24.86	1451	0.87	0.71	1605	13.38	Sesquiterpene
β -Selinene	26.22	1467	0.05	0.06	1630	14.73	Sesquiterpene
<i>ar</i> -Curcumene	26.57	1471	0.09	0.08	1697	18.28	Sesquiterpene
Bicyclogermacrene	26.73	1473	0.09	0.06	1651	15.86	Sesquiterpene
Isodaucene	27.15	1478	0.78	0.79	1634	14.95	Sesquiterpene
Germacrene A	27.81	1486	0.30	0.21	1686	17.70	Sesquiterpene
<i>cis</i> - α -Bisabolene	28.22	1491	0.02	0.10	1661	16.38	Sesquiterpene
γ -Cadinene	28.56	1495	0.09	0.09	1669	16.83*	Sesquiterpene
β -Bisabolene	28.91	1500	2.10	2.12	1658	16.23	Sesquiterpene
δ -Cadinene	29.58	1509	0.10	[0.09]	1669	16.83*	Sesquiterpene
Methyl (<i>E</i>)-isoeugenol	29.86	1513	0.43	0.27	2108	40.57*	Phenylpropanoid
Dauca-4(11),8-diene	30.21	1518	0.23				Sesquiterpene
<i>trans</i> - α -Bisabolene	31.85	1541	0.09	0.13	1710	19.10	Sesquiterpene
Unknown (m/z = 135, 159 (98), 107 (92), 177 (86), 121 (86), 91 (80)... 220 (23))	33.10	1558	2.02	4.32	1935	34.17	Oxygenated sesquiterpene
Caryophyllene oxide	33.87	1569	0.20	0.51	1845	28.50	Sesquiterp. ether
Spathulenol	33.92	1570	0.32	0.35	2032	38.19*	Sesquiterp. alcohol
Carotol	35.74	1595	76.59	74.65	1921	33.52	Sesquiterp. alcohol
Unknown, not seen in MS (carrot)	35.79	1596	0.05	0.04	1943	34.58	
10- <i>epi</i> - γ -Eudesmol	35.86	1597	0.12	0.05	1981	36.28	Sesquiterp. alcohol
Muuroala-4,10(14)-dien-1- β -ol analog?	36.38	1609	0.48				Sesquiterp. alcohol
Muuroala-4,10(14)-dien-1- β -ol	36.55	1614	0.32	[0.35]	2032	38.19*	Sesquiterp. alcohol
γ -Eudesmol	36.74	1618	0.20	0.10	2067	39.28	Sesquiterp. alcohol
Hinesol	36.90	1622	0.24	[0.27]	2108	40.57*	Sesquiterp. alcohol
Caryophylla-4(12),8(13)-dien-5 β -ol	37.15	1628	0.07	2.40	2184	42.54*	Sesquiterp. alcohol
Daucol	37.61	1639	2.27	[2.40]	2184	42.54*	Sesquiterp. alcohol
α -Cadinol	38.08	1651	0.06	0.07	2132	41.20	Sesquiterp. alcohol
Unknown (m/z = 59, 95 (64), 93 (44), 107 (41)... 204 (29), 207? (24))	38.55	1663	0.26				

Unknown (m/z = 122, 79 (71), 91 (62), 93 (60), 107 (59), 41 (54), 123 (53)... 220? (2))	38.65	1665	0.18				
α -Asarone	39.73	1692	0.05	0.04	2373	46.86	Phenylpropanoid
Drimenol	42.04	1763	0.10	0.09	2358	46.54	Sesquiterp. alcohol
Total identified			95.53%	91.99%			

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

Note: no correction factor was applied

OTHER DATA

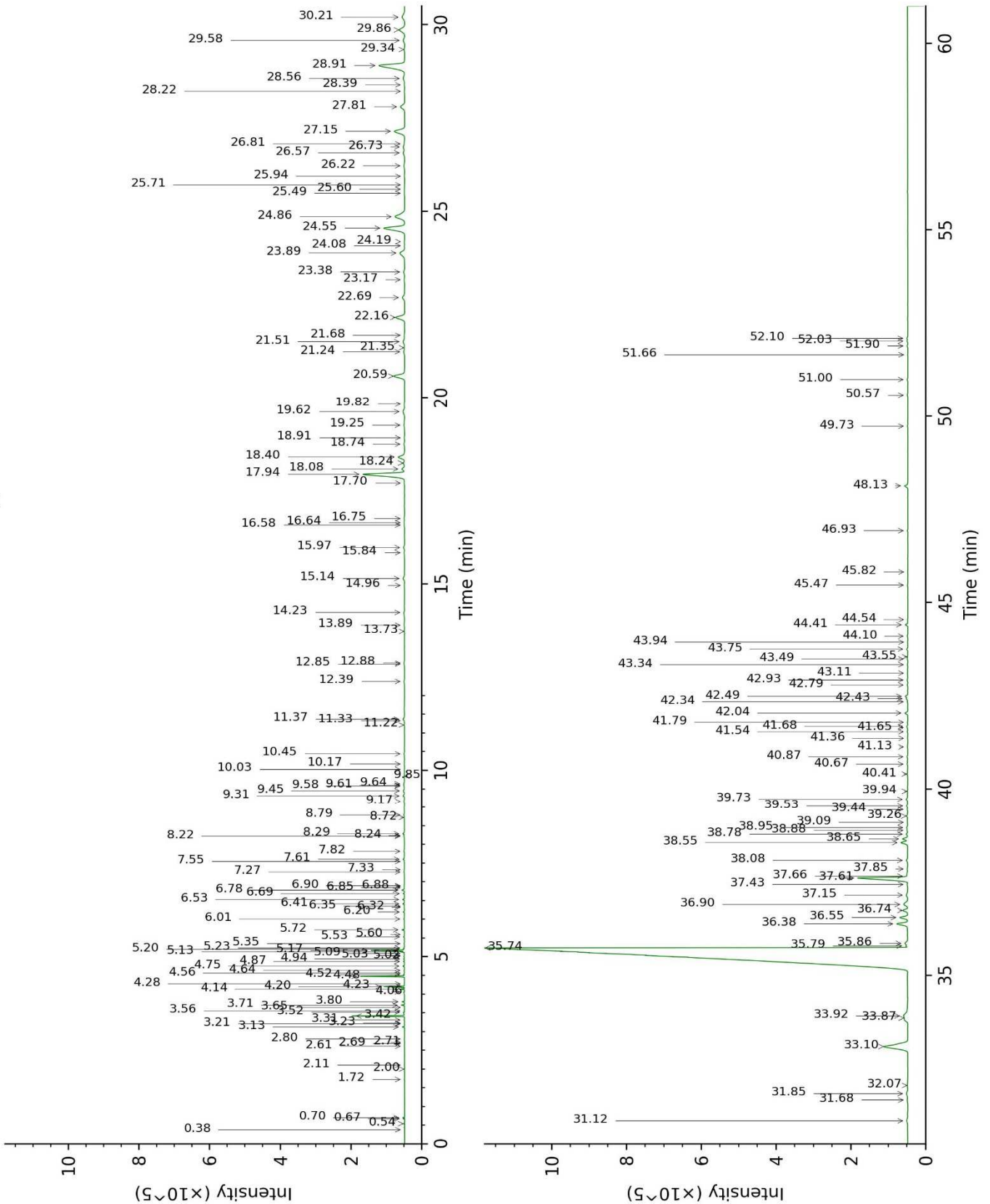
Physical aspect : Yellow orange liquid

Refractive index : 1.4660 \pm 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent were detected using this method.

17H07-PTH3-1-DM_BP5



17H07-PTH3-1-DM_WAX

