

# P **Mentha spicata**

## Common Name(s)

Hortela da Folha Miuda, Spearmint

## How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	(+)-DIHYDROCARVONE	Leaf	550	13750		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-ISOMENTHONE	Leaf	23	575	-1.1806897850952103	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-LINALOOL	Essential Oil	--	863000		
0	(+)-MENTHOFURAN	Leaf	4	100	-0.6542082025768665	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	(+)-NEOMENTHOL	Leaf	1	25	-1.3911934652185358	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	(+)-PIPERITENONE-OXIDE	Leaf	5700	14250	1.5322768307102888	
4	(+)-PULEGONE	Leaf	--	8300	1.6080152922980508	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	(+)-PULEGONE	Essential Oil	--	30000	-1	
0	(-)-CARVONE	Leaf	6200	6900	0.5667200668065975	
0	(-)-CARVONE	Essential Oil	--	--		
0	(-)-DIHYDROCARVONE	Leaf	900	2250		
0	(-)-ISOMENTHONE	Essential Oil	--	--		
0	(-)-LIMONENE	Plant	--	--		
0	(-)-LIMONENE	Leaf	700	2000	1.2705511342858904	
0	(-)-LIMONENE	Essential Oil	--	--		
4	(-)-MENTHOL	Leaf	8	200	-1.1506920842172557	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	(-)-MENTHOL	Essential Oil	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
2	(-)-MENTHONE	Leaf	438	10950	1.1365180077826589	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	(-)-PIPERITONE	Leaf	24	600	-1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	1,8-CINEOL	Essential Oil	--	3000	-1.1812015201236299	
0	1,8-CINEOL	Shoot	--	--		
67	1,8-CINEOLE	Plant	50	9375	2.069816196893691	
0	1-HYDROXY-2-ACETOXY-P-MENTH-8(9)-ENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-AMINO-ADIPIC-ACID	Shoot	1.6	1.6		
0	2-AMYL-FURAN	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-AMYL-FURAN	Essential Oil	--	--		
0	2-CARBOXYARABINITOL	Leaf	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	2-ETHYL-FURAN	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-ETHYL-FURAN	Essential Oil	--	--	
2	2-METHOXY-4-VINYL-PHENOL	Shoot	--	--	
0	2-METHYL-2-METHYL-BUTYRATE	Leaf	--	--	
0	2-METHYL-BUTAN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-METHYL-BUTAN-1-OL	Essential Oil	--	--	
0	2-METHYL-BUTYL-2-METHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-METHYL-BUTYL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	2-METHYL-BUTYL-ISOVALERATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-METHYL-BUTYL-ISOVALERATE	Essential Oil	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	2-METHYL-BUTYRALDEHYDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-METHYL-BUTYRALDEHYDE	Essential Oil	--	--		
0	2-METHYL-ETHYL-BUTYRATE	Leaf	--	--		
0	2-METHYL-PROPAN-1-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	2-METHYL-PROPAN-1-OL	Essential Oil	--	--		
0	3(5',5'-DIMETHYL-TETRAHYDROFURAN-2'-YL)-BUT-CIS-2-EN-1-OL	Leaf	3	75		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	3(5',5'-DIMETHYL-TETRAHYDROFURAN-2'-YL)-BUT-CIS-2-EN-1-OL	Essential Oil	--	3000	1.4142135187385312	
0	3-METHYL-BUTAN-1-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	3-METHYL-BUTAN-1-OL	Essential Oil	--	--		
0	3-METHYL-BUTYRALDEHYDE	Essential Oil	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-HYDROXY-PIPERITONE	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	4-HYDROXY-PIPERITONE	Essential Oil	--	--	
0	5-HYDROXY-CARVONE	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	5-HYDROXY-CARVONE	Essential Oil	--	--	
0	5-METHYL-HEX-2-EN-1-AL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	5-METHYL-HEX-2-EN-1-AL	Essential Oil	--	--	
0	8-HYDROXY-9-ACETOXY-MENTH-1-ENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	ACETALDEHYDE	Essential Oil	--	--	
16	ACETIC-ACID	Plant	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
16	ACETIC-ACID	Essential Oil	--	--		
0	ACETOIN	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ACETOIN	Essential Oil	--	--		
3	ACETONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	ACETONE	Essential Oil	--	--		
6	ACETOPHENONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	ACETOPHENONE	Essential Oil	--	--		
3	ALANINE	Leaf	1710	11835	-0.1770443857416287	USDA's Ag Handbook 8 and sequelae)
0	ALPHA-FENCHENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-FENCHENE	Essential Oil	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ALPHA-HUMULENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	ALPHA-HUMULENE	Essential Oil	--	--	
0	ALPHA-LIMONENE-1,2-OXIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-LIMONENE-1,2-OXIDE	Essential Oil	--	--	
0	ALPHA-METHYL-P-METHYL-STYRENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-METHYL-P-METHYL-STYRENE	Essential Oil	--	--	
28	ALPHA-PINENE	Leaf	5	375	-0.20019781806808187
28	ALPHA-PINENE	Shoot	--	--	
28	ALPHA-PINENE	Essential Oil	2000	10000	-0.47207505752571344
23	ALPHA-TERPINEOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
23	ALPHA-TERPINEOL	Essential Oil	--	--	



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ALPHA-THUJENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-THUJENE	Essential Oil	--	--		
101	APIGENIN	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	ARGININE	Leaf	1510	10450	-0.6013081392776	USDA's Ag Handbook 8 and sequelae)
14	ARGININE	Essential Oil	--	--		
112	ASCORBIC-ACID	Leaf	135	9200	0.4097226710061515	USDA's Ag Handbook 8 and sequelae)
0	ASH	Plant	16000	94000	0.35178839232492654	
3	ASPARTIC-ACID	Leaf	3880	26850	-0.011481891557127021	USDA's Ag Handbook 8 and sequelae)
24	BENZALDEHYDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
24	BENZALDEHYDE	Essential Oil	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BENZYL-2-METHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BENZYL-2-METHYL-BUTYRATE	Essential Oil	--	--	
9	BENZYL-ALCOHOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	BENZYL-ALCOHOL	Essential Oil	--	--	
1	BENZYL-ISOBUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	BENZYL-ISOBUTYRATE	Essential Oil	--	--	
0	BETA-BOURBONENE	Leaf	2	50	-0.2572628070428749
0	BETA-BOURBONENE	Essential Oil	--	--	
53	BETA-CAROTENE	Leaf	2	10	-0.37582350890658794
0	BETA-CARYOPHYLLENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-CARYOPHYLLENE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	BETA-CARYOPHYLLENE-OXIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-CARYOPHYLLENE-OXIDE	Essential Oil	--	--	
5	BETA-ELEMENE	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	BETA-ELEMENE	Essential Oil	--	--	
0	BETA-HUMULENE	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	BETA-IONONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
13	BETA-IONONE	Essential Oil	--	--	
0	BETA-LIMONENE-1,2-OXIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-LIMONENE-1,2-OXIDE	Essential Oil	--	--	
2	BETA-MYRCENE	Leaf	700	1750	1.9887942996764614

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	BETA-OCIMENE	Essential Oil	--	20000	
0	BETA-PHENETHYL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	BETA-PHENETHYL-ALCOHOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-PHENETHYL-ALCOHOL	Essential Oil	--	--	
0	BETA-PHENETHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-PHENETHYL-BUTYRATE	Essential Oil	--	--	
0	BETA-PHENETHYL-ISOBUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-PHENETHYL-ISOBUTYRATE	Essential Oil	--	--	
0	BETA-PHENETHYL-ISOVALERATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-PHENETHYL-ISOVALERATE	Essential Oil	--	--	
0	BETA-PHENETHYL-METHYL-BUTYRATE	Leaf	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	BETA-PHENETHYL-METHYL-ETHER	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-PHENETHYL-METHYL-ETHER	Essential Oil	--	--	
13	BETA-PINENE	Leaf	9	3425	4.622716517508347
13	BETA-PINENE	Shoot	--	--	
13	BETA-PINENE	Essential Oil	3000	137000	2.3116107782282604
47	BETA-SITOSTEROL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
47	BETA-SITOSTEROL	Shoot	--	--	
0	BICYCLOELEMENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BICYCLOELEMENE	Essential Oil	--	--	
35	BORNEOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
35	BORNEOL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
6	BUTYRIC-ACID	Plant	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	CADINOL	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
28	CALCIUM	Plant	1990	11760	0.019318935182891635
9	CAMPHENE	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	CAMPHENE	Essential Oil	--	--	
1	CAPROIC-ACID	Plant	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
5	CAPRYLIC-ACID	Plant	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	CAR-3-ENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CAR-3-ENE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CARBOHYDRATE	Plant	80000	588300	0.15598903570269707	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CARBOHYDRATES	Plant	80000	588300	-0.541481373280153	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
37	CARVACROL	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
37	CARVACROL	Essential Oil	--	--		
19	CARVONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
19	CARVONE	Plant	495	20000	3.111093181560533	
19	CARVONE	Shoot	--	--		
0	CARVONE-10-ACETATE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	CARVONE-10-ACETATE	Essential Oil	--	--	
0	CARVONE-8,9-OXIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CARVONE-8,9-OXIDE	Essential Oil	--	--	
0	CARVYL-6,7-OXIDE-ACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CARVYL-6,7-OXIDE-ACETATE	Essential Oil	--	--	
31	CARYOPHYLLENE	Leaf	3	1950	0.42006860721265904
31	CARYOPHYLLENE	Essential Oil	--	12000	-0.5431805211356492
0	CHLOROFORM	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CHLOROFORM	Essential Oil	--	--	
0	CHLOROPHYLL-A	Leaf	2755	2755	
0	CHLOROPHYLL-B	Leaf	1299	1299	
0	CINEOL	Essential Oil	10000	48000	-0.6663815998555231



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CINEOLE	Leaf	10	1500	-0.6688040789870409	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-2,5-DIETHYL-TETRAHYDROFURAN	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-2,5-DIETHYL-TETRAHYDROFURAN	Essential Oil	--	--		
0	CIS-BETA-COPAENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-BETA-COPAENE	Essential Oil	--	--		
0	CIS-CARVEOL	Leaf	4	100	1	
0	CIS-CARVEOL	Essential Oil	--	--		
0	CIS-CARVEOL	Shoot	--	--		
0	CIS-CARVEOL-ACETATE	Essential Oil	--	--		
0	CIS-CARVONE-OXIDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-CARVONE-OXIDE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CIS-CARVYL-ACETATE	Leaf	18	450		
0	CIS-CARVYL-FORMATE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-CARVYL-FORMATE	Essential Oil	--	--		
0	CIS-DIHYDROCARVONE	Essential Oil	--	--		
0	CIS-JASMONE	Leaf	1	25	-0.3741484173923501	
0	CIS-JASMONE	Essential Oil	--	--		
0	CIS-SABINENE-HYDRATE	Essential Oil	--	--		
1	COPAENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	COPAENE	Essential Oil	--	--		
12	COPPER	Plant	1	2	0.33037825900684764	
2	CYSTINE	Leaf	360	2490	-0.3589486756977957	USDA's Ag Handbook 8 and sequelae)
0	DECAN-1-OL	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

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0	DECAN-1-OL	Essential Oil	--	--	
0	DECAN-3-OL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	DECAN-3-OL	Essential Oil	--	--	
0	DEHYDROCARVACROL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	DEHYDROCARVACROL	Essential Oil	--	--	
9	DELTA-CADINENE	Leaf	2	38	-0.2986545777457765
9	DELTA-CADINENE	Essential Oil	--	--	
2	DIACETYL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	DIACETYL	Essential Oil	--	--	
0	DIHYDRO-ISOCARVONE	Essential Oil	--	6500	
2	DIHYDROCARVEOL	Leaf	13	325	0.47480379501964887
2	DIHYDROCARVEOL	Essential Oil	--	29000	
2	DIHYDROCARVEOL	Shoot	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	DIHYDROCARVONE	Leaf	18	4475	1
0	DIHYDROCARVONE	Essential Oil	--	6500	-0.49934378715306904
0	DIHYDROCARVONE	Shoot	--	--	
1	DIHYDROCARVYL-ACETATE	Leaf	16	400	
1	DIHYDROCARVYL-ACETATE	Essential Oil	--	--	
2	DIMETHYL-SULFIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	DIMETHYL-SULFIDE	Essential Oil	--	--	
1	DIMETHYL-SULFOXIDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	DIMETHYL-SULFOXIDE	Essential Oil	--	--	
13	DIOSMETIN	Plant	--	--	
0	DIOSMETIN-7-GLUCOSIDE	Plant	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	DIOSMETIN-7-O-BETA-D-GLUCURONIDE	Leaf	--	--	
34	DIOSMIN	Leaf	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
34	DIOSMIN	Shoot	--	--	
2	ELEMOL	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	EO	Leaf	1000	25000	1.1843761113015423
0	EPIBULGARENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	EPIBULGARENE	Essential Oil	--	--	
0	EPIMUROLENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	EPIMUROLENE	Essential Oil	--	--	
24	ETHANOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
24	ETHANOL	Essential Oil	--	--	
0	ETHYL-2-METHYL-BUTYRATE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	ETHYL-ISOBUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	ETHYL-ISOBUTYRATE	Essential Oil	--	--	
0	ETHYL-N-VALERATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ETHYL-N-VALERATE	Essential Oil	--	--	
76	EUGENOL	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
76	EUGENOL	Shoot	--	--	
76	EUGENOL	Essential Oil	--	--	
2	FARNESENE	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	FARNESENE	Essential Oil	--	--	
17	FARNESOL	Leaf	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	FAT	Plant	6000	35294	-0.01792101144299427	
15	FIBER	Plant	20000	118000	-0.7748720151690661	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FOLATE	Leaf	1	7	0.1690308509457033	
6	FURFURAL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	FURFURAL	Essential Oil	--	--		
0	GAMMA-CADINENE	Leaf	2	33	-0.11733883554584716	
11	GAMMA-TERPINENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
11	GAMMA-TERPINENE	Essential Oil	--	--		
35	GERANIOL	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	GERANYL-ACETONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	GERANYL-ACETONE	Essential Oil	--	--		
8	GLUTAMIC-ACID	Leaf	3580	24775	-0.7109553135717208	USDA's Ag Handbook 8 and sequelae)
12	GLYCINE	Leaf	1580	10935	0.13782403206680577	USDA's Ag Handbook 8 and sequelae)
0	HEPT-CIS-4-EN-1-AL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPT-CIS-4-EN-1-AL	Essential Oil	--	--		
0	HEPT-TRANS-2-EN-1-AL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPT-TRANS-2-EN-1-AL	Essential Oil	--	--		
0	HEPTAN-1-AL	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPTAN-1-AL	Essential Oil	--	--		
0	HEPTAN-1-YL-2-METHYL-BUTYRATE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	HEPTAN-1-YL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	HEPTAN-1-YL-ISOVALERATE	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPTAN-1-YL-ISOVALERATE	Essential Oil	--	--	
0	HEPTAN-3-OL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPTAN-3-OL	Essential Oil	--	--	
0	HEPTAN-3-ONE	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEPTAN-3-ONE	Essential Oil	--	--	
31	HESPERIDIN	Plant	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	HEX-CIS-3-EN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	HEX-CIS-3-EN-1-OL	Essential Oil	--	--	
0	HEX-CIS-3-EN-1-OL-2-METHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-CIS-3-EN-1-OL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	HEX-CIS-3-EN-1-OL-ACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-CIS-3-EN-1-OL-ACETATE	Essential Oil	--	--	
0	HEX-CIS-3-EN-1-OL-ISOBUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-CIS-3-EN-1-OL-ISOBUTYRATE	Essential Oil	--	--	
0	HEX-CIS-3-EN-1-OL-ISOVALERATE	Leaf	2	50	
0	HEX-CIS-3-EN-1-OL-ISOVALERATE	Essential Oil	--	--	
0	HEX-CIS-3-EN-1-OL-PHENYLACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-CIS-3-EN-1-OL-PHENYLACETATE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	HEX-TRANS-2-EN-1-AL	Essential Oil	--	--	
0	HEX-TRANS-2-EN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-TRANS-2-EN-1-OL	Essential Oil	--	--	
0	HEX-TRANS-2-EN-1-OL-ACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-TRANS-2-EN-1-OL-ACETATE	Essential Oil	--	--	
0	HEX-TRANS-3-EN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEX-TRANS-3-EN-1-OL	Essential Oil	--	--	
0	HEXAHYDRO-FARNESYL-ACTONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAHYDROFARNESYL-ACETONE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	HEXAN-1-AL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAN-1-AL	Essential Oil	--	--	
0	HEXAN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAN-1-OL	Essential Oil	--	--	
0	HEXAN-1-YL-2-ISOVALERATE	Leaf	--	--	
0	HEXAN-1-YL-2-METHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAN-1-YL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	HEXAN-1-YL-ISOVALERATE	Essential Oil	--	--	
0	HEXAN-1-YL-PHENYLACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	HEXAN-1-YL-PHENYLACETATE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
7	HISTIDINE	Leaf	660	4565	-0.4071595786304595	USDA's Ag Handbook 8 and sequelae)
6	IRON	Plant	156	918	0.3427665650697393	
0	ISOAMYL-2-METHYL-BUTYRATE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ISOAMYL-2-METHYL-BUTYRATE	Essential Oil	--	--		
0	ISOAMYL-ISOVALERATE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ISOAMYL-ISOVALERATE	Essential Oil	--	--		
2	ISOBORNYL-ACETATE	Leaf	11	275	1	
0	ISOBUTYL-2-METHYL-BUTYRATE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ISOBUTYL-2-METHYL-BUTYRATE	Essential Oil	--	--		
1	ISOBUTYRALDEHYDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	ISOBUTYRALDEHYDE	Essential Oil	--	--	
1	ISOCARYOPHYLLENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	ISOCARYOPHYLLENE	Essential Oil	--	--	
0	ISODIHYDROCARVONE	Leaf	75	1875	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	ISOLEUCINE	Leaf	1350	9340	-0.7017350095262209
3	ISOMENTHONE	Leaf	50	125	-0.6385368793120907
3	ISOMENTHONE	Essential Oil	--	--	
4	ISOPINOCAMPHONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	ISOPINOCAMPHONE	Essential Oil	--	--	
8	JASMONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
8	JASMONE	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	KILOCALORIES	Leaf	440	3045	0.043389152673180095	USDA's Ag Handbook 8 and sequelae)
0	L-PHELLANDRENE	Plant	--	--		
0	L-PHELLANDRENE	Leaf	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	LAVANDULYL-BUTYRATE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LAVANDULYL-BUTYRATE	Essential Oil	--	--		
2	LEUCINE	Leaf	2470	17095	0.08951789523130926	
0	LF	Plant	--	--		
60	LIMONENE	Plant	7	9075	5.091572982030111	
60	LIMONENE	Shoot	--	--		
60	LIMONENE	Essential Oil	19000	363000	1.3523167562121183	
0	LIMONENENE-8,9-OXIDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LIMONENENE-8,9-OXIDE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	LINALOL	Plant	11	9375	1.6872091848059536	
53	LINALOOL	Plant	11	9375	2.6501691984113913	
53	LINALOOL	Essential Oil	--	--		
0	LINALOOL-ACETATE	Essential Oil	--	1000	-0.7426467381632698	
27	LINOLEIC-ACID	Leaf	540	3735	-0.7513073604494908	USDA's Ag Handbook 8 and sequelae)
0	LINOLENIC-ACID	Leaf	3380	23390	-0.2348536372710458	USDA's Ag Handbook 8 and sequelae)
78	LUTEOLIN	Leaf	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LUTEOLIN-3'-O-BETA-D-GLUCURONIDE	Leaf	--	--		
0	LUTEOLIN-7-O-BETA-D-GLUCURONIDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	LYSINE	Leaf	1410	9760	-0.7075161040041896	
65	MAGNESIUM	Leaf	630	4360	0.09045438563126122	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Leaf	11	77	-0.3318765828407499	USDA's Ag Handbook 8 and sequelae)
0	MENTH-1-OL-ACETATE	Essential Oil	--	--		



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
5	MENTHOFURAN	Essential Oil	--	--		
63	MENTHOL	Leaf	--	375	-0.5643139655866684	
63	MENTHOL	Leaf	8	200	-0.5846188722355842	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
63	MENTHOL	Essential Oil	--	15000	-1	
0	MENTHOL-ACETATE	Leaf	--	375	-1	
0	MENTHOL-ACETATE	Essential Oil	--	15000		
30	MENTHONE	Leaf	4	1300	-0.4760604980459572	
30	MENTHONE	Leaf	438	10950	0.7462042221217	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
30	MENTHONE	Essential Oil	--	--		
2	METHANOL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	METHANOL	Essential Oil	--	--		
15	METHIONINE	Leaf	460	3180	0.07735883691925587	
2	METHYL-2-METHYL-BUTYRATE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	METHYL-HEPTENONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	METHYL-HEPTENONE	Essential Oil	--	--		
13	MUFA	Leaf	250	1730	-0.5597108284870816	USDA's Ag Handbook 8 and sequelae)
22	MYRCENE	Plant	21	1350	1.007083201682519	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
22	MYRCENE	Shoot	--	--		
22	MYRCENE	Essential Oil	--	--		
6	MYRISTIC-ACID	Leaf	40	275	-0.5522849047688323	USDA's Ag Handbook 8 and sequelae)
5	MYRTENAL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	MYRTENAL	Essential Oil	--	--		
2	MYRTENOL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	MYRTENOL	Essential Oil	--	--	
1	MYRTENYL-ACETATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	MYRTENYL-ACETATE	Essential Oil	--	--	
1	N-BUTYRALDEHYDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	N-BUTYRALDEHYDE	Essential Oil	--	--	
1	N-VALERALDEHYDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	N-VALERALDEHYDE	Essential Oil	--	--	
0	NEO-ISOPULEGOL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	NEO-ISOPULEGOL	Essential Oil	--	--	
0	NEODIHYDROCARVEOL	Leaf	3	75	1
0	NEODIHYDROCARVEOL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	NEODIHYDROCARVYL-ACETATE	Essential Oil	--	--	
2	NEOMENTHOL	Essential Oil	--	--	
5	NERYL-ACETATE	Leaf	27	675	0.6307295317468979
39	NIACIN	Plant	4	24	-0.16418216541690328 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	NONAN-1-AL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	NONAN-1-AL	Essential Oil	--	--	
0	NONAN-3-OL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	NONAN-3-OL	Essential Oil	--	--	
0	OCT-1-EN-3-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCT-1-EN-3-OL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	OCTAN-1-AL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-1-AL	Essential Oil	--	--	
0	OCTAN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-1-OL	Essential Oil	--	--	
0	OCTAN-1-OL-2-METHYL-BUTYRATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-1-OL-2-METHYL-BUTYRATE	Essential Oil	--	--	
0	OCTAN-1-OL-FORMATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-1-OL-FORMATE	Essential Oil	--	--	
0	OCTAN-3-OL	Leaf	4	100	-0.4336112824306008
0	OCTAN-3-OL	Essential Oil	--	5000	-1
0	OCTAN-3-OL-ACETATE	Leaf	2	25	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	OCTAN-3-OL-ACETATE	Essential Oil	--	--		
0	OCTAN-3-ONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-3-ONE	Essential Oil	--	--		
64	OLEANOLIC-ACID	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
64	OLEANOLIC-ACID	Shoot	--	--		
18	OLEIC-ACID	Leaf	220	1520	-0.4583001506895111	USDA's Ag Handbook 8 and sequelae)
9	OXALIC-ACID	Leaf	38	38	-0.4750154161977811	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. The Medicinal and Poisonous Plants of Southern and Eastern Africa. E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.
0	P-CYMEN-8-OL	Leaf	--	--		
16	P-CYMENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
16	P-CYMENE	Essential Oil	--	2000	-0.6168805810969309	
0	P-CYMENE-8-OL	Essential Oil	--	--		
0	P-CYMOL	Leaf	3	75	-0.5148723081234048	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-CYMOL	Essential Oil	--	3000		
0	P-MENTH-1(7)-EN-8-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTH-1(7)-EN-8-OL	Essential Oil	--	--		
0	P-MENTH-1,8-DIEN-4-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTH-1-EN-9-YL-ACETATE	Essential Oil	--	--		
0	P-MENTH-CIS-1(7),8-DIEN-2-OL	Leaf	--	--		
0	P-MENTH-CIS-2-EN-1-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTH-CIS-2-EN-1-OL	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	P-MENTH-TRANS-1(7),8-DIEN-2-OL	Leaf	--	--		
0	P-MENTH-TRANS-1(7),8-DIEN-2-YL-ACETATE	Leaf	--	--		
0	P-MENTH-TRANS-2,8-DIEN-1-OL	Leaf	--	--		
0	P-MENTHA-1,8-DIEN-4-OL	Essential Oil	--	--		
0	P-MENTHA-CIS-1(7)-8-DIEN-2-OL	Essential Oil	--	--		
0	P-MENTHA-CIS-2-8-DIEN-1-OL	Essential Oil	--	--		
0	P-MENTHA-TRANS-1(7)-8-DIEN-2-OL	Essential Oil	--	--		
0	P-MENTHA-TRANS-1(7)-8-DIEN-2-YL-ACETATE	Essential Oil	--	--		
0	P-MENTHA-TRANS-2-8-DIEN-1-OL	Essential Oil	--	--		
13	PALMITIC-ACID	Leaf	1370	9480	-0.20652718082803365	USDA's Ag Handbook 8 and sequelae)
2	PALMITOLEIC-ACID	Leaf	20	140	-0.49196167844647537	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Leaf	2.5	17	-0.5115750290946652	USDA's Ag Handbook 8 and sequelae)
0	PENT-1-EN-3-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PENT-1-EN-3-OL	Essential Oil	--	--		
0	PENT-CIS-1-EN-3-OL	Leaf	--	--		



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	PENT-CIS-2-EN-1-OL	Essential Oil	--	--	
0	PENTAN-1-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PENTAN-1-OL	Essential Oil	--	--	
0	PERILLA-ALDEHYDE	Essential Oil	--	--	
11	PERILLALDEHYDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
14	PERILLYL-ALCOHOL	Leaf	1	25	1
14	PERILLYL-ALCOHOL	Essential Oil	--	--	
6	PHENETHYL-ALCOHOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	PHENETHYL-ALCOHOL	Essential Oil	--	--	
0	PHENLYALANINE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
2	PHENYL-ACETALDEHYDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	PHENYL-ACETALDEHYDE	Essential Oil	--	--		
7	PHENYLALANINE	Leaf	1680	11625	0.3481392714633915	
4	PHOSPHORUS	Plant	600	4706	0.5369248860408372	
2	PHYTOSTEROLS	Leaf	100	690	-0.5982404044893082	USDA's Ag Handbook 8 and sequelae)
0	PIN-TRANS-3-EN-2-OL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PIN-TRANS-3-EN-2-OL	Essential Oil	--	--		
12	PINENE	Essential Oil	--	--		
4	PINOCAMPHONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	PINOCAMPHONE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	PINOCARVEOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PINOCARVEOL	Essential Oil	--	--	
1	PINOCARVONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	PINOCARVONE	Essential Oil	--	--	
3	PIPERITENONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	PIPERITENONE	Essential Oil	--	--	
3	PIPERITENONE	Shoot	--	--	
2	PIPERITENONE-OXIDE	Plant	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
2	PIPERITENONE-OXIDE	Essential Oil	--	--	
7	PIPERITONE	Leaf	24	600	-0.04108594242379066 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
7	PIPERITONE	Plant	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
7	PIPERITONE	Essential Oil	--	--		
0	PIPERITONE-OXIDE	Leaf	35	875	-1.3957962433408342	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PIPERITONE-OXIDE	Essential Oil	--	--		
2	POMOLIC-ACID	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	POMOLIC-ACID	Shoot	--	--		
14	POTASSIUM	Leaf	4580	32000	0.07312186100168522	USDA's Ag Handbook 8 and sequelae)
0	PROLINE	Leaf	1350	9345	-0.27514619222062164	USDA's Ag Handbook 8 and sequelae)
0	PROPAN-1-YL-2-METHYL-BUTYRATE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PROPAN-1-YL-2-METHYL-BUTYRATE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	PROPIONALDEHYDE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	PROPIONALDEHYDE	Essential Oil	--	--		
0	PROTEIN	Plant	32900	282240	0.8914067568935523	
0	PSI-LIMONENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PSI-LIMONENE	Essential Oil	--	--		
4	PUFA	Leaf	3940	27265	1.0561663737218558	USDA's Ag Handbook 8 and sequelae)
28	PULEGONE	Leaf	1	475	-0.6220305328114489	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
28	PULEGONE	Essential Oil	1000	19000	-1.0797832656873603	
15	RIBOFLAVIN	Plant	1	5	0.04099174223160336	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
57	ROSMARINIC-ACID	Leaf	--	6300	-0.16904224493663075	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
57	ROSMARINIC-ACID	Plant	43000	43000	0.8895001040740586	Fitoterapia No.62: 166.
57	ROSMARINIC-ACID	Shoot	5900	5900	-0.5785639805694225	
57	ROSMARINIC-ACID	Inflorescence	--	43000	0.3023882331879371	
0	ROTUNDIFOLINE	Plant	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
5	SABINENE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	SABINENE	Essential Oil	--	--		
0	SABINENE-HYDRATE	Leaf	4	300	1.367894009277969	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	SABINENE-HYDRATE	Essential Oil	4000	12000		
0	SACCHAROPINE	Shoot	1.6	1.6	-0.7071067811865464	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	SALICYLIC-ACID-METHYL-ESTER	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	SALICYLIC-ACID-METHYL-ESTER	Essential Oil	--	--		
1	SERINE	Leaf	1280	8860	-0.42939704308828536	USDA's Ag Handbook 8 and sequelae)
0	SFA	Leaf	1910	13220	-0.04932916069434147	USDA's Ag Handbook 8 and sequelae)
0	SITOSTEROL-GLYCOSIDE	Plant	--	--		
1	SODIUM	Leaf	300	2075	-0.2787506258109787	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Leaf	200	1385	0.28059560458984517	USDA's Ag Handbook 8 and sequelae)
12	STIGMASTEROL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
12	STIGMASTEROL	Shoot	--	--		
0	TANNINS	Leaf	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
23	TERPINEN-4-OL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
23	TERPINEN-4-OL	Essential Oil	--	--	
9	TERPINOLENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	TERPINOLENE	Essential Oil	--	--	
31	THIAMIN	Plant	1	3	-0.3909910138264638 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
31	THIAMIN	Leaf	0.8	3	-0.688703330240956
4	THREONINE	Leaf	1350	9340	-0.15065942518421008
71	THYMOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
71	THYMOL	Essential Oil	--	--	



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	TIGLALDEHYDE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TIGLALDEHYDE	Essential Oil	--	--	
1	TOLUENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	TOLUENE	Essential Oil	--	--	
0	TRANS-BETA-COPAENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-BETA-COPAENE	Essential Oil	--	--	
0	TRANS-BETA-OCIMENE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-BETA-OCIMENE	Essential Oil	--	--	
1	TRANS-CARVEOL	Leaf	2	50	
1	TRANS-CARVEOL	Essential Oil	--	--	
1	TRANS-CARVEOL	Shoot	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	TRANS-CARVEOL-ACETATE	Essential Oil	--	--	
0	TRANS-CARVONE-OXIDE	Essential Oil	--	--	
0	TRANS-CARVYL-ACETATE	Leaf	3	75	1
0	TRANS-CARVYL-FORMATE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-CARVYL-FORMATE	Essential Oil	--	--	
0	TRANS-DIHYDROCARVONE	Essential Oil	--	--	
0	TRANS-JASMONE	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-JASMONE	Essential Oil	--	--	
0	TRANS-SABINENE-HYDRATE	Essential Oil	--	--	
0	TRANS-VERBENOL	Leaf	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-VERBENOL	Essential Oil	--	--	
29	TRYPTOPHAN	Leaf	500	3460	0.4632240516049009

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
8	TYROSINE	Leaf	990	6850	-0.32144859638053946	USDA's Ag Handbook 8 and sequelae)
89	URSOLIC-ACID	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
89	URSOLIC-ACID	Shoot	--	--		
89	URSOLIC-ACID	Plant	--	--		
9	VALERIC-ACID	Plant	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	VALINE	Leaf	1640	11350	-0.3764818769201724	
28	VANILLIN	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
28	VANILLIN	Essential Oil	--	--		
5	VERBENONE	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	VERBENONE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
1	VIRIDIFLOROL	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	VIRIDIFLOROL	Essential Oil	--	--		
0	VIT-B-6	Leaf	1.5	10	-0.5119230867007493	
0	WATER	Plant	--	830000	0.2528779846519487	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	WATER	Leaf	--	830000	0.23628975921912068	
77	ZINC	Leaf	11	75	-0.06649179301145117	USDA's Ag Handbook 8 and sequelae)