

P **Mentha pulegium**

Common Name(s)

European Pennyroyal

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-CAMPHENE	Essential Oil	--	10600	
0	(+)-CAMPHENE	Plant	106	212	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-ISO-NEOMENTHOL	Essential Oil	--	6500	
0	(+)-ISOISOPULEGONE	Essential Oil	--	2200	
0	(+)-ISOISOPULEGONE	Plant	22	76	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-ISOMENTHONE	Essential Oil	--	52100	
0	(+)-ISOMENTHONE	Leaf Essent. Oil	--	207000	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	(+)-ISOMENTHONE	Plant	521	4140		
0	(+)-ISOPULEGONE	Plant	--	--		
0	(+)-ISOPULEGONE	Essential Oil	--	--		
0	(+)-LIMONENE	Plant	10	290	1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	(+)-MENTHOL	Plant	1624	3248		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	(+)-MENTHOL	Essential Oil	--	162400		
0	(+)-MENTHONE	Plant	680	1360		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-MENTHONE	Essential Oil	--	68000		
0	(+)-NEOISOMENTHOL	Plant	65	1150		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(+)-NEOMENTHOL	Essential Oil	--	30200		
0	(+)-NEOMENTHOL	Plant	1	604		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	(+)-OCTAN-3-OL	Plant	149	416		
0	(+)-OCTAN-3-OL	Essential Oil	--	14900		
4	(+)-PULEGONE	Leaf Essent. Oil	--	501000		
4	(+)-PULEGONE	Plant	--	19400	-1	
4	(+)-PULEGONE	Essential Oil	90000	970000	1	
0	(-)-3-METHYL-CYCLOHEXANONE	Essential Oil	--	--		
0	(-)-3-METHYL-CYCLOHEXEN-1-ONE	Essential Oil	--	--		
0	(-)-ALPHA-PINENE	Essential Oil	--	--		
0	(-)-ISOPULEGONE	Essential Oil	--	6500		
0	(-)-ISOPULEGONE	Plant	65	154		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(-)-LIMONENE	Plant	41	148		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	(-)-LIMONENE	Essential Oil	--	4100		
4	(-)-MENTHOL	Plant	1	22		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	(-)-MENTHOL	Essential Oil	--	1100		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	(-)-MENTHONE	Plant	50	6160	1
2	(-)-MENTHONE	Essential Oil	--	308000	
2	(-)-MENTHONE	Leaf Essent. Oil	--	250000	
0	(-)-OCT-3-EN-1-OL	Essential Oil	--	--	
0	(-)-PINENE	Essential Oil	--	--	
1	(-)-PIPERITONE	Plant	9	86	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
1	(-)-PIPERITONE	Essential Oil	--	4300	
0	1,1,3-TRIMETHYL-CYCLOPENTAN-4-ONE	Essential Oil	--	--	
0	1,1,3-TRIMETHYL-CYCLOPENTANONE	Plant	--	--	
0	1,1,3-TRIMETHYL-CYCLOPENTANONE	Essential Oil	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
67	1,8-CINEOLE	Plant	20	20	-0.5560490759487932
0	1-METHYL-CYCLOHEX-1-EN-3-ONE	Essential Oil	--	--	
0	1-METHYL-CYCLOHEX-1-ONE	Essential Oil	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	1-METHYL-CYCLOHEXAN-3-OL	Essential Oil	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	1-METHYL-CYCLOHEXAN-3-ONE	Essential Oil	80	80000		
0	1-METHYL-CYCLOHEXANOL	Essential Oil	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	1-METHYL-CYCLOHEXANOL	Shoot	--	--		
0	3-METHYL-CYCLOHEXAN-1-OL	Essential Oil	--	--		
0	3-METHYL-CYCLOHEXANONE	Essential Oil	--	--		
0	3-METHYL-CYCLOHEXANONE	Plant	70	140		
0	3-OCTYL-ACETATE	Plant	10	80	-0.6127218214163859	
16	ACETIC-ACID	Essential Oil	--	--		
2	ALPHA-HUMULENE	Plant	70	140	0.5902423704277919	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Essential Oil	--	3000	-0.5349746839055997	
11	ALPHA-PHELLANDRENE	Plant	30	60	-0.7513751346333919	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
28	ALPHA-PINENE	Plant	20	520	-0.11347774923265422	
28	ALPHA-PINENE	Shoot Essent. Oil	--	--		
28	ALPHA-PINENE	Essential Oil	2000	26000	-0.331283527078581	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
28	ALPHA-PINENE	Leaf Essent. Oil	--	7000	-0.7146470778854853	
13	ALPHA-TERPINENE	Essential Oil	--	1000	-0.7495259974879932	
13	ALPHA-TERPINENE	Plant	--	20	-0.471448810117065	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
23	ALPHA-TERPINEOL	Plant	70	140	-0.372099995911098	
5	ALUMINUM	Plant	1850	1850	2.9223806352535795	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	AROMADENDRENE	Essential Oil	--	--		
3	AROMADENDRENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ASH	Plant	73000	73000	-0.867394454112097	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	BETA-BOURBONENE	Plant	15	30	-0.2993017571188262	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BETA-CARYOPHYLLENE	Essential Oil	--	--		
0	BETA-CARYOPHYLLENE	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	BETA-FENCHENE	Essential Oil	--	300		
0	BETA-FENCHENE	Plant	1	6		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-HUMULENE	Essential Oil	--	--		
0	BETA-HUMULENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-METHYL-ADIPIC-ACID	Essential Oil	--	--		
0	BETA-METHYL-DELTA-ISOBUTYLVALERIC-ACID	Plant	--	--		
3	BETA-PHELLANDRENE	Essential Oil	800	20000	0.6280219486295257	
3	BETA-PHELLANDRENE	Plant	3	400	2.9918668917708637	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
13	BETA-PINENE	Essential Oil	2000	14400	-0.41064310614185573	
13	BETA-PINENE	Shoot	--	--		
13	BETA-PINENE	Plant	20	288	-0.1245231451771769	
6	BUTYRIC-ACID	Essential Oil	--	--		
4	CADINENE	Essential Oil	--	8700	-0.5068231682706219	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
4	CADINENE	Plant	87	174	-0.722432676215474	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
28	CALCIUM	Plant	9440	16870	0.35091544969248395	
9	CAMPHENE	Shoot	--	--		
9	CAMPHENE	Essential Oil	100	7000	-0.483566600830156	
9	CAMPHENE	Plant	1	70	-0.48608374240323066	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
37	CARVACROL	Essential Oil	10000	20000	-0.9288943509503852	
37	CARVACROL	Plant	100	400	-0.8114562574483182	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
19	CARVONE	Essential Oil	--	--		
31	CARYOPHYLLENE	Essential Oil	--	1000	-0.7498359032671668	
31	CARYOPHYLLENE	Plant	10	60	-0.49690029432931404	
24	CHROMIUM	Plant	17	17	0.7215583160252136	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	CINEOL	Essential Oil	2000	30000	-0.7470645738290619	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CINEOLE	Plant	2	600	-0.5784936892904783	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-ISOPULEGONE	Plant	20	120	1	
0	CIS-PULEGONE-OXIDE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	CIS-PULEGONE-OXIDE	Essential Oil	--	--		
15	CITRONELLOL	Plant	90	180	-0.30943366496458685	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
15	CITRONELLOL	Essential Oil	--	9000	-0.7045093281934509	
2	COBALT	Plant	14	14	-0.020060618763181548	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	CYMOL	Essential Oil	--	16000		
0	CYMOL	Plant	160	320		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
19	D-LIMONENE	Essential Oil	1000	14500	-0.7092832756363163	
0	DECYLIC-ACID	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	DEHYDROMENTHOFURAN-OXIDE	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	DEHYDROMENTHOFURAN-OXIDE	Essential Oil	--	--	
0	DEHYDROXYMENTHOFURAN-OXIDE	Plant	--	--	
0	DELTA-ISOBUTYRL-VALERIC-ACID-BETA-MENTHOL	Plant	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	DELTA-MENTHENONE	Essential Oil	--	--	
34	DIOSMIN	Leaf	--	--	
34	DIOSMIN	Shoot	--	--	
7	DIPENTENE	Plant	--	--	
0	DL-1,1,3-TRIMETHYLCYCLOPENTAN-4-ONE	Essential Oil	--	--	
0	DL-LIMONENE	Essential Oil	--	--	
0	DL-PIPERITONE	Essential Oil	--	--	
0	EO	Shoot	3500	20000	0.8981574696493044
0	EO	Plant	10000	20000	0.7798359465806497
0	EO	Leaf	--	9200	-0.20538886846416335
0	EO	Tissue Culture	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
76	EUGENOL	Plant	160	320	-0.44442307760119315	
76	EUGENOL	Essential Oil	--	16000	-0.665687200498063	
0	FAT	Seed	266000	266000	0.0032257759924247268	
0	FAT	Plant	45000	45000	-0.09847341356713703	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	FENCHENE	Essential Oil	--	7000		
0	FENCHENE	Plant	70	140		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	FENCHONE	Essential Oil	--	1000	-0.7042720360690181	
6	FENCHONE	Plant	10	20	-0.5837172315870186	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
15	FIBER	Plant	123000	123000	-0.737905187992049	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
13	FORMIC-ACID	Essential Oil	--	--		
11	GAMMA-TERPINENE	Plant	--	50	-0.5136265458798137	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
11	GAMMA-TERPINENE	Essential Oil	--	2500	-0.7879853217179721	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
2	GERMACRENE-D	Plant	--	--		
6	GUAIAZULENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	GUAIAZULENE	Essential Oil	--	--		
31	HESPERIDIN	Plant	--	--		
0	HEXAN-1-OL	Essential Oil	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
6	IRON	Plant	2310	2310	1.9820351605052466	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	ISOHEPTYLIC-ACID	Essential Oil	--	--		
1	ISOMENTHOL	Shoot	--	--		
1	ISOMENTHOL	Essential Oil	--	500		
1	ISOMENTHOL	Plant	1	10	-1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	ISOMENTHONE	Plant	--	8420	1.8675461425083695	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	ISOMENTHONE	Essential Oil	12000	421000	1	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ISONEOMENTHOL	Essential Oil	--	--		
0	ISONEOMENTHOL-ACETATE	Essential Oil	--	3000		
0	ISOPIPERITENONE	Plant	--	80		
0	ISOPIPERITENONE	Essential Oil	--	--		
0	ISOPIPERITONE	Plant	--	--		
3	ISOPULEGOL	Plant	680	1360	1.414171474771408	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ISOPULEGOLE	Essential Oil	--	68000		
4	ISOPULEGONE	Plant	525	2014	1.4121740271883934	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
4	ISOPULEGONE	Essential Oil	52500	100700		
0	KILOCALORIES	Plant	3490	3490	0.1742430372477144	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
7	LAURIC-ACID	Essential Oil	--	--		
60	LIMONENE	Essential Oil	1000	110000	-0.10391929710390785	
60	LIMONENE	Leaf Essent. Oil	--	5000	-0.6561226246926355	
60	LIMONENE	Plant	10	2200	0.8662874679010774	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
60	LIMONENE	Shoot	--	--		
60	LIMONENE	Plant	41	148	-0.39484502300696295	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LINALOL	Plant	15	30	-0.42543285788216045	
0	LINALOL-ACETATE	Plant	10	820	1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LINALOL-ISOVALERATE	Plant	130	260		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
53	LINALOOL	Plant	15	30	-0.6602593620483829	
53	LINALOOL	Essential Oil	--	--		
0	LINALOOL-ACETATE	Plant	10	820	1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LINALOOL-ACETATE	Essential Oil	1000	41000	-0.23915742415427346	
0	LINALOOL-ISOVALERATE	Plant	130	260		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LINALOOL-ISOVALERATE	Essential Oil	--	13000		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
65	MAGNESIUM	Plant	5500	5500	0.44507141297830793	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
14	MANGANESE	Plant	83	83	-0.10002848666961581	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	MENTHENE	Essential Oil	--	28000		
0	MENTHENE	Plant	280	560		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	MENTHOFURAN	Essential Oil	200	8000	1	
5	MENTHOFURAN	Shoot	--	--		
5	MENTHOFURAN	Plant	1	160	-0.7243223657474931	
0	MENTHOFURAN-OXIDE	Essential Oil	--	--		
0	MENTHOFURAN-OXIDE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
63	MENTHOL	Shoot	--	--		
63	MENTHOL	Plant	--	3780	2.1738078001414967	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
63	MENTHOL	Essential Oil	1000	478000	1	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	MENTHOL-ACETATE	Essential Oil	--	--		
0	MENTHOL-ACETATE	Shoot	--	--		
0	MENTHOL-ACETATE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
30	MENTHONE	Plant	10	6160	0.49247976031206625	
30	MENTHONE	Plant	50	6160	0.49247976031206625	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
30	MENTHONE	Essential Oil	1000	80000	1	
30	MENTHONE	Shoot	--	--		
22	MYRCENE	Essential Oil	2700	4500	-0.38506528864758083	
22	MYRCENE	Plant	27	600	0.18309105499415446	
6	MYRISTIC-ACID	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	NEOISOMENTHOL	Plant	30	1160	1	
0	NEOISOMENTHOL-ACETATE	Plant	30	286		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	NEOISOPULEGOLE	Essential Oil	--	--		
2	NEOMENTHOL	Plant	1	3880	1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
2	NEOMENTHOL	Essential Oil	28000	194000		
2	NEOMENTHOL	Shoot	--	--		
5	NEPETALACTONE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
5	NEPETALACTONE	Essential Oil	--	--		
10	NEROL	Plant	10	20	-0.4292275892118858	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
10	NEROL	Essential Oil	--	1000	-0.8213756657344466	
6	O-CRESOL	Essential Oil	--	--		
2	OCIMENE	Essential Oil	--	2500		
2	OCIMENE	Plant	25	50	-0.7012050389583314	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	--	--		
0	OCT-3-EN-1-OL	Essential Oil	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	OCTAN-1-OL	Essential Oil	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-1-OL-ACETATE	Essential Oil	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-3-OL	Essential Oil	2000	22000	1
0	OCTAN-3-OL	Shoot	--	--	
0	OCTAN-3-OL	Plant	20	440	1
0	OCTAN-3-OL-ACETATE	Plant	12	160	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTAN-3-OL-ACETATE	Essential Oil	2900	8000	
0	OCTAN-3-ONE	Essential Oil	--	--	
0	OCTEN-1-OL	Essential Oil	--	--	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	OCTOIC-ACID	Essential Oil	--	--	
0	OCTYLIC-ACID	Essential Oil	--	--	
8	P-CRESOL	Essential Oil	--	--	
16	P-CYMENE	Plant	3	610	-0.26146431649011576

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
16	P-CYMENE	Essential Oil	300	30500	-0.38158485622235	
0	P-CYMOL	Plant	30	60	-1.0049144952727418	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-CYMOL	Shoot	--	--		
0	P-MENTHA-1,4(8)-DIENE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTHA-1,4(8)-DIENE	Essential Oil	--	--		
0	P-MENTHANE	Plant	40	80		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTHANE	Essential Oil	--	4000		
13	PALMITIC-ACID	Essential Oil	--	--		
4	PHELLANDRENE	Shoot	--	--		
26	PHENOL	Essential Oil	--	--		
4	PHOSPHORUS	Plant	2520	2520	-0.5135291849072152	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PIPERITENOL	Essential Oil	--	9900		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	PIPERITENOL	Plant	100	200	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	PIPERITENONE	Plant	30	4800	1.6731162867837588 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
3	PIPERITENONE	Essential Oil	--	240000	
0	PIPERITOL	Essential Oil	--	1000	
0	PIPERITOL	Plant	10	20	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PIPERITOL-ACETATE	Essential Oil	--	10000	
0	PIPERITOL-ACETATE	Plant	100	200	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
7	PIPERITONE	Plant	10	11000	2.219380329493596
7	PIPERITONE	Essential Oil	3000	700000	
0	PIPERTENONE	Essential Oil	--	3300	
0	PIPERTENONE	Plant	33	66	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
14	POTASSIUM	Plant	10500	15310	-0.45241372175813044	
0	PROTEIN	Plant	100000	112000	-0.5037049042481623	
0	PROTEIN	Seed	100000	246000	0.10856029952162446	
0	PULEGOL	Plant	400	800		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	PULEGOLE	Essential Oil	--	40000		
28	PULEGONE	Essential Oil	300000	930000	1.3308095011183545	
28	PULEGONE	Shoot	--	--		
28	PULEGONE	Plant	520	18800	1.4373197944141436	
0	PULEGONE-EPOXIDE	Essential Oil	--	--		
0	PULEGONE-EPOXIDE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
57	ROSMARINIC-ACID	Inflorescence	--	30000	-0.26815560301571756	
57	ROSMARINIC-ACID	Plant	30000	30000	0.09914512201035752	Fitoterapia No.62: 166.
5	SABINENE	Plant	8	140	-0.3524551800814526	
5	SABINENE	Essential Oil	1500	7000	-0.5464939750962685	
5	SALICYLALDEHYDE	Essential Oil	--	--		
34	SALICYLIC-ACID	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	SALICYLIC-ACID-METHYL-ESTER	Essential Oil	--	--	
60	SELENIUM	Plant	25	25	0.6881720243035053 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	SILICON	Plant	182	182	0.5511913566398267 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	SODIUM	Plant	2790	5410	-0.004600503542934433
35	TANNIN	Plant	40000	40000	-0.6370616203493836
0	TERPINENOL	Plant	10	20	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TERPINENOL	Essential Oil	--	1000	
9	TERPINOLENE	Plant	1	90	0.05649215319734414 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	TERPINOLENE	Essential Oil	100	4500	-0.36188656386428764
17	THUJONE	Plant	10	20	-0.5825251858703618 Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
17	THUJONE	Essential Oil	--	1000	-1

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
71	THYMOL	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
71	THYMOL	Essential Oil	--	--		
4	TIN	Plant	24	24	0.21332933498995302	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	TRANS-BETA-OCIMENE	Plant	1	8	-1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-BETA-OCIMENE	Essential Oil	--	400	-1	
0	TRANS-ISOPULEGONE	Plant	70	320		
0	TRANS-PULEGONE-OXIDE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	TRANS-PULEGONE-OXIDE	Essential Oil	--	--		
0	WATER	Plant	912000	912000	0.6039243158292479	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
77	ZINC	Plant	56	56	0.03803390463662481	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.