

P Syzygium aromaticum

Common Name(s)

Clove, Clovetree

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	1,2,3,4,6-PENTA-O-GALLOYL-BETA-D-GLUCOSE	Leaf	33.7	33.7	
2	1,2,3,6-TETRA-O-GALLYOL-BETA-D-GLUCOSE	Leaf	49.7	49.7	
0	1-BETA-O-GALLOYLPEDUNCULAGIN	Leaf	114.5	114.5	
0	1-DEGALLOYL-EUGENIIN	Leaf	12175	12175	1
0	10-(ALPHA)-CADINOL	Flower	--	--	
0	10-(ALPHA)-CADINOL	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-3-DI-O-GALLOYL-GLUCOSE	Leaf	214.5	214.5	
0	2-3-HEXAHYDROXY-DIPHENOYL-GLUCOSE	Leaf	--	--	
0	2-HEPTANOL	Flower	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2-HEPTANOL	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-HEPTANONE	Plant	--	--	
0	2-HEPTYL-ACETATE	Flower	--	--	
0	2-HEPTYL-ACETATE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-HEPTYL-BENZOATE	Flower	--	--	
0	2-HEPTYL-BENZOATE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-NONANOL	Plant	--	--	
2	2-NONANONE	Flower	--	1	
2	2-NONANONE	Fruit	1	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-NONYL-ACETATE	Flower	--	1	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2-NONYL-ACETATE	Fruit	1	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
4	2-UNDECANONE	Flower	--	--	
4	2-UNDECANONE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2ALPHA-HYDROXYOLEANOLIC-ACID-METHYL-ESTER	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	3'-O-METHYL-3-4-METHYLENEDIOXY-ELLAGIC ACID	Bark	--	--	Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. Phytochemistry 7 10: 1803-1813
3	3,3',4-TRI-O-METHYL-ELLAGIC-ACID	Bark	--	--	Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. Phytochemistry 7 10: 1803-1813
3	3,3',4-TRI-O-METHYL-ELLAGIC-ACID	Fruit	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	3,3'-DI-O-METHYL-ELLAGIC-ACID	Bark	--	--	Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
3	3,4-DIHYDROXYBENZOIC-ACID	Leaf	--	--	
1	3,4-DIHYDROXYPHENYLETHANOL	Leaf	--	--	
0	3-METHOXYBENZALDEHYDE	Fruit	--	--	
0	4,4-DIMETHYLTRICYCLO[6,3,2,0]TRIDECA-8-ENE-1-OL	Essential Oil	--	--	
0	5,7-DIHYDROXY-2-METHYLCHROMONE-8-C-BETA-D-GLUCOPYRANOSIDE	Fruit	--	143	
0	5,7-DIHYDROXY-2-METHYLCHROMONE-8-C-BETA-D-GLUCOSIDE	Leaf	--	66	
6	5,7-DIHYDROXY-2-METHYLCHROMONE-8-C-BETA-GLUCOPYRANOSIDE	Fruit	--	145	
0	5-METHYLFURALDEHYDE	Fruit	--	--	
0	6-METHYL-HEPT-5-EN-2-ONE	Fruit	--	--	
6	ACETOPHENONE	Fruit	--	--	
5	ACETYL-EUGENOL	Flower	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	ACETYL-EUGENOL	Fruit	--	--	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	ALLO-AROMADENDRENE	Leaf	--	--	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	ALPHA-AMORPHENE	Flower	--	1	
0	ALPHA-AMORPHENE	Fruit	1	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-CADINENE	Flower	--	--	
0	ALPHA-CADINENE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
3	ALPHA-CADINOL	Leaf	5	8	-0.5496266023491511	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	ALPHA-CARYOPHYLLENE	Flower	--	--		
0	ALPHA-CARYOPHYLLENE	Fruit	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	ALPHA-COPAENE	Flower	--	--		
0	ALPHA-COPAENE	Fruit	--	1890	1.8816304622249802	
0	ALPHA-COPAENE	Leaf	--	1135	6.3964083212247616	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	ALPHA-CUBEBENE	Flower	--	--		
0	ALPHA-CUBEBENE	Fruit	--	37800	2.0783973463880634	
0	ALPHA-CUBEBENE	Leaf	25	305	1.722385843588116	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	ALPHA-HUMULENE	Flower	775	850	1.881400128799953	
2	ALPHA-HUMULENE	Fruit	250	850	-0.1719773217114379	
2	ALPHA-HUMULENE	Essential Oil	30000	30000	-0.20980400443514668	
2	ALPHA-HUMULENE	Leaf	290	1740	2.4875695628615198	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
1	ALPHA-HUMULENE-EPOXIDE	Essential Oil	26000	26000		
0	ALPHA-METHYL-FURFURYL	Plant	--	--		
0	ALPHA-METHYL-FURFURYL	Fruit	--	--		Wealth of India.
0	ALPHA-MUUROLENE	Plant	--	--		
0	ALPHA-MUUROLENE	Fruit	--	--		
0	ALPHA-MUUROLENE	Leaf	3.3	5.5	-0.5120674670233037	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
23	ALPHA-TERPINEOL	Essential Oil	--	--		
0	ALPHA-TERPINYL-ACETATE	Flower	155	170		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-TERPINYL-ACETATE	Fruit	155	170	-0.7035975831753031 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-THUJENE	Fruit	--	--	
0	ALPHA-YLANGENE	Plant	--	--	
0	ALPHA-YLANGENE	Fruit	245	395	1.414158345897999
1	ALPHA-ZINGIBERENE	Leaf	11	18	1.0000000000000002 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
5	ALUMINUM	Flower	80	160	1.0835425694391705
5	ALUMINUM	Fruit	80	160	-0.17697394528100432 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ARABINOSE	Essential Oil	--	--	
112	ASCORBIC-ACID	Bark	810	810	1.9840107880269489 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7	ASTRAGALIN	Fruit	--	--	
0	BARIUM	Flower	20	30	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	BARIUM	Fruit	20	30	0.23749286365790012 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
24	BENZALDEHYDE	Flower	--	--	
24	BENZALDEHYDE	Fruit	--	--	
0	BENZOIC ACID BENZYL ESTER	Fruit	--	--	
0	BENZOIC-ACID-ETHYL-ESTER	Fruit	--	--	
0	BENZOIC-ACID-METHYL-ESTER	Fruit	--	--	
0	BENZOIC-ACID-PROPYL-ESTER	Fruit	--	--	
9	BENZYL-ACETATE	Plant	--	--	
9	BENZYL-ALCOHOL	Plant	--	--	
0	BENZYL-TIGLATE	Plant	--	--	
0	BETA-BOURBONENE	Leaf	--	--	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
53	BETA-CAROTENE	Bark	2	3	-0.6464926691482484 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	BETA-CARYOPHYLLENE	Flower	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	BETA-CARYOPHYLLENE	Essential Oil	495000	495000	2.8069272425728666	
0	BETA-CARYOPHYLLENE	Fruit	2230	69365	1.9999529994158691	
0	BETA-CARYOPHYLLENE	Leaf	2295	14520	6.774430907684983	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	BETA-CARYOPHYLLENE-OXIDE	Essential Oil	45000	45000		
0	BETA-MUUROLENE	Fruit	--	--		
13	BETA-PINENE	Plant	--	--		
13	BETA-PINENE	Fruit	--	--		
3	BETA-SELINENE	Fruit	--	--		
47	BETA-SITOSTEROL	Plant	--	--		
47	BETA-SITOSTEROL	Fruit	--	2420	2.385350854149113	
47	BETA-SITOSTEROL	Essential Oil	1000	1000	-1	
0	BETA-SITOSTEROL-GLUCOSIDE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
3	BETA-TERPINEOL	Essential Oil	--	--		
7	BIFLORIN	Fruit	70	1022		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
4	BORON	Flower	10	40	-0.011499571648933803
4	BORON	Fruit	10	40	0.0014459720019340586
0	CADALENE	Leaf	5	8	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	CALACORENE	Flower	--	--	
0	CALACORENE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CALACORENE	Leaf	13	21	0.19023374145231275 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	CALAMENENE	Flower	--	--	
0	CALAMENENE	Leaf	--	210	3.8695166003766976 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	CALAMENENE	Fruit	--	1265	-0.17527372328420673

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CALAMENOL	Leaf	25	35		Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
28	CALCIUM	Flower	6460	9540	1.0428267398370916	
28	CALCIUM	Fruit	6460	9540	1.3115758699797868	
4	CALCIUM-OXALATE	Plant	--	--		
2	CAMPESTEROL	Plant	--	--		
2	CAMPESTEROL	Fruit	--	--		
0	CAMPESTEROL-3-O-BETA-D-GLUCOSIDE	Fruit	--	--		
0	CAMPESTEROL-GLUCOSIDE	Plant	--	--		
0	CARBOHYDRATES	Bark	555000	612000	-1.3532281234725556	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
19	CARVONE	Plant	--	--		
0	CARYOPHYLLA-3(12)-6-DIEN-4-OL	Essential Oil	--	--		
0	CARYOPHYLLA-3(12)-7(13)-DIEN-6-ALPHA-OL	Essential Oil	--	--		
0	CARYOPHYLLA-3(8)-13-DIEN-5-ALPHA-OL	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CARYOPHYLLA-3-8(13)-DIEN-5-BETA-OL	Essential Oil	--	--		
0	CARYOPHYLLA-4(12)-8(13)-DIEN-5-BETA-OL	Essential Oil	--	--		
31	CARYOPHYLLENE	Flower	74400	8160	1.4134608729490745	
31	CARYOPHYLLENE	Fruit	7440	8160	-0.15290356778862352	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
31	CARYOPHYLLENE	Essential Oil	16000	16000	-0.468033109451461	
8	CARYOPHYLLENE-OXIDE	Plant	--	--		
8	CARYOPHYLLENE-OXIDE	Essential Oil	--	--		
8	CARYOPHYLLENE-OXIDE	Fruit	--	2455	1.3957687820089826	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
8	CARYOPHYLLENE-OXIDE	Leaf	75	712	2.643842620312473	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	CARYOPHYLLINE	Fruit	--	--		
5	CASUARICTIN	Leaf	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	CASUARICTIN	Plant	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	CASUARIIN	Leaf	9.7	9.7	
3	CHAVICOL	Flower	465	510	
3	CHAVICOL	Fruit	465	510	-0.44569781898926136 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
24	CHROMIUM	Flower	3	5	0.9873869417794828
24	CHROMIUM	Fruit	3	5	0.19465740124831715
60	CINNAMALDEHYDE	Flower	--	1	-1
60	CINNAMALDEHYDE	Fruit	1	1	
0	CIS-ISOEUGENOL	Fruit	--	--	
2	COBALT	Flower	--	0.7	-0.5111703686956748
2	COBALT	Fruit	0.7	0.7	-0.4503737361947928
0	CONIFERALDEHYDE	Leaf	--	--	
0	CONIFERALDEHYDE	Stem	--	--	
12	COPPER	Flower	3	9	-0.8371161987468383

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
12	COPPER	Fruit	3	9	-0.2972270275515491
0	CORNUS-TANNIN-2	Plant	--	--	
0	CRATAEGOLIC ACID METHYL ESTER	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CRATAEGOLIC-ACID	Flower	--	6	
0	CRATAEGOLIC-ACID	Fruit	6	1500	
2	CRATEGOLIC-ACID	Seed	--	20	
0	CUBENENE	Fruit	--	--	
0	CUBENOL	Leaf	--	--	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
10	CUMINALDEHYDE	Fruit	--	--	
5	DAUCOSTEROL	Fruit	--	--	
9	DELTA-CADINENE	Fruit	--	--	
9	DELTA-CADINENE	Leaf	25	160	0.23246458505780895 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
1	DELTA-CADINOL	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	DELTA-CADINOL	Leaf	8	13	-0.10787259719937864 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	DIMETHYL-FURFURAL	Plant	--	--	
51	ELLAGIC-ACID	Plant	--	--	
51	ELLAGIC-ACID	Bark	--	--	Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. Phytochemistry 7 10: 1803-1813
51	ELLAGIC-ACID	Fruit	--	21	-0.6877437439073045
8	ELLAGITANNIN	Fruit	3200	3200	
0	EO	Flower	155000	210000	6.568033781616922
0	EO	Fruit	150000	210000	3.261810506686991
0	EO	Leaf	20000	32000	1.8000947732230574
0	EO	Stem	40000	60000	2.6026342788799575 Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	EPOXYDIHYDROCARYOPHYLLENE	Plant	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EPOXYDIHYDROCARYOPHYLLENE	Fruit	--	--	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	ETHYL-BENZOATE	Plant	--	--	
2	ETHYL-CINNAMATE	Plant	--	--	
0	ETHYL-HEXANOATE	Plant	--	--	
0	ETHYL-OCTANOATE	Plant	--	--	
5	EUGENIIN	Fruit	1640	1640	
5	EUGENIIN	Leaf	8950	8950	
0	EUGENINE	Flower	--	--	
0	EUGENINE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	EUGENITINE	Flower	--	--	
0	EUGENITINE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
76	EUGENOL	Flower	108655	180000	2.6457158873560447

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
76	EUGENOL	Leaf	7920	9000	2.285513566975547	
76	EUGENOL	Stem	36000	9000	1	
76	EUGENOL	Fruit	--	--		
76	EUGENOL	Bark	--	--		
76	EUGENOL	Leaf Essent. Oil	--	--		
76	EUGENOL	Essential Oil	61000	627000	1.0627703935425195	
76	EUGENOL	Bulb	--	--		
0	EUGENOL-4-O-BETA-D(6'-O-GALLOYL)-GLUCOSIDE	Leaf	215	215		
1	EUGENOL-ACETATE	Bark	--	--		
1	EUGENOL-ACETATE	Fruit	--	--		
6	EUGENYL-ACETATE	Fruit	--	56700		
0	FAT	Flower	89000	201000	2.2590609005075395	
0	FAT	Fruit	89000	201000	0.8939697424043467	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	FENCHONE	Fruit	--	--		
15	FIBER	Flower	95000	100000	-0.38632916081034846	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
15	FIBER	Fruit	95000	100000	-0.39327836686010154	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	FLUORIDE	Fruit	2.4	2.4	0.5081285807389628	
0	FURALDEHYDE	Fruit	--	--		
6	FURFURAL	Plant	--	--		
1	FURFURYL-ALCOHOL	Flower	--	--		
1	FURFURYL-ALCOHOL	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GALLIC ACID 3-O-BETA-D-(6'-O-GALLOYL)-GLUCOSIDE	Leaf	2.5	2.5		
62	GALLIC-ACID	Flower	--	--		
62	GALLIC-ACID	Fruit	285	12600	-0.44183433468392297	
0	GALLOTANNIC-ACID	Plant	--	--		
0	GALLOTANNIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	GAMMA-CADINENE	Fruit	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-CADINENE	Leaf	25	160	1.3103193505890738 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	GAMMA-CARYOPHYLLENE	Plant	--	--	
3	GAMMA-DECALACTONE	Fruit	--	--	
0	GAMMA-MUUROLENE	Fruit	--	--	
0	GAMMA-MUUROLENE	Leaf	11	18	-0.6643448015717212 Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
1	GEMIN-D	Leaf	1125	1175	
13	GERANIAL	Fruit	--	--	
0	HEPTAN-2-ONE	Fruit	--	--	
0	HEXAN-1-AL	Fruit	--	--	
0	HEXAN-2-ONE	Essential Oil	--	--	
0	HEXAN-2-ONE	Fruit	--	--	
0	HUMULEN-7-OL	Flower	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HUMULEN-7-OL	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	HUMULENE-1,2-OXIDE	Fruit	--	95	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	HUMULENE-1,2-OXIDE	Leaf	18	90	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	HUMULENE-EPOXIDE	Flower	--	--	
0	HUMULENE-EPOXIDE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
30	HYPEROSIDE	Fruit	--	--	
6	IRON	Flower	45	150	-0.11737283974721074
6	IRON	Fruit	45	150	0.06752138925955396
0	ISOBIFLORIN	Fruit	--	510	
0	ISOEUGENITENE	Plant	--	--	
16	ISOEUGENOL	Plant	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
22	ISOQUERCITRIN	Fruit	--	--	
5	KAEMPFERIDE	Fruit	--	--	
75	KAEMPFEROL	Flower	--	--	
75	KAEMPFEROL	Fruit	--	29	-0.5731869083869251
0	LEDOL	Leaf	--	--	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	LINALOL	Flower	--	1	-0.3900304526992942
53	LINALOOL	Fruit	1	1	-0.5854958813390855 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LINOLEIC-ACID-METHYL-ESTER	Fruit	--	--	
65	MAGNESIUM	Flower	2640	3020	0.15016470805298793
65	MAGNESIUM	Fruit	2640	3020	0.4122435661971507
14	MANGANESE	Flower	100	1200	3.8497155611333613
14	MANGANESE	Fruit	100	1200	7.509105970380378
0	MASLIC-ACID	Fruit	--	1500	
6	MASLINIC-ACID	Flower	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
6	MASLINIC-ACID	Essential Oil	1500	1500		
6	MASLINIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	METHYL-ALCOHOL	Plant	--	--		
0	METHYL-ALCOHOL	Fruit	--	--		Wealth of India.
4	METHYL-BENZOATE	Plant	--	--		
6	METHYL-CHAVICOL	Plant	--	--		
20	METHYL-EUGENOL	Flower	310	340	1	
20	METHYL-EUGENOL	Fruit	310	340	1	
20	METHYL-EUGENOL	Leaf	18	29	-0.807121771184076	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
0	METHYL-FURFURYL-ALCOHOL	Plant	--	--		
0	METHYL-FURFURYL-ALCOHOL	Fruit	--	--		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
2	METHYL-N-AMYLKETONE	Flower	--	--	
2	METHYL-N-AMYLKETONE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	METHYL-N-HEPTYL-KETONE	Flower	--	--	
0	METHYL-N-HEPTYL-KETONE	Fruit	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	METHYL-OCTANOATE	Plant	--	--	
21	METHYL-SALICYLATE	Flower	--	--	
21	METHYL-SALICYLATE	Fruit	--	--	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
3	MUCILAGE	Plant	--	--	
34	MYRICETIN	Leaf	--	--	
34	MYRICETIN	Fruit	--	20	1.79780110304311
1	NAPHTHALENE	Flower	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	NAPHTHALENE	Essential Oil	1000	1000	-1
1	NAPHTHALENE	Fruit	--	--	
1	NAPHTHALENE	Leaf	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	NAPHTHALENE	Stem	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	NICKEL	Flower	--	2.4	-0.9999999999999997
3	NICKEL	Fruit	2.4	2.4	-0.04957166517347313
0	NONAN-2-ONE	Fruit	--	--	
0	OCTAN-2-ONE	Fruit	--	--	
64	OLEANOLIC-ACID	Flower	--	20000	1.4118875102795632
64	OLEANOLIC-ACID	Fruit	35	20000	-1
64	OLEANOLIC-ACID	Essential Oil	10000	10000	
64	OLEANOLIC-ACID	Seed	--	7	-1
0	ORSELLINIC-ACID-2-O-BETA-D-GLUCOSIDE	Seed	--	27	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	PALMITIC-ACID-METHYL-ESTER	Fruit	--	--		
0	PALUSTROL	Fruit	--	--		
0	PALUSTROL	Leaf	--	--		Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
9	PEDUNCULAGIN	Leaf	--	--		
0	PHENYLETHYL-ACETATE	Flower	--	1	-1.1565845346367642	
0	PHENYLETHYL-ACETATE	Fruit	1	1		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
4	PHOSPHORUS	Flower	1000	1337	-0.9975269050748918	
4	PHOSPHORUS	Fruit	1000	1337	-0.5707254381124798	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PHTHALIC ACID DIBUTYL DIESTER	Essential Oil	--	--		
2	PHYTOSTEROLS	Fruit	--	2560	2.080091889988275	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation	
14	POTASSIUM	Flower	11020	16200	-0.3149478902442045	
14	POTASSIUM	Fruit	11020	16200	-0.15186560947876587	
11	PROCYANIDIN	Leaf	--	--		
1	PRODELPHINIDIN	Leaf	--	--		
0	PROTEIN	Flower	52000	70000	-0.8446468010457023	
0	PROTEIN	Fruit	52000	70000	-0.5294951043049843	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PTEROCARININ A	Leaf	21.5	21.5		
176	QUERCETIN	Fruit	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.	
0	QUERCETIN-3,4'-DI-O-BETA-D-GLUCOSIDE	Fruit	--	--		
0	QUERCITRIN-3,4'-DI-O-GLYCOSIDE	Fruit	--	--		
0	RESIN	Plant	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.	
18	RHAMNETIN	Plant	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation	
18	RHAMNETIN	Fruit	--	--		
7	RHAMNOCITRIN	Fruit	--	50		
15	RIBOFLAVIN	Flower	1	2	-0.9879472837456319	
15	RIBOFLAVIN	Fruit	1	2	-0.6444915447424321	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	RUGOSIN-A	Leaf	16.2	16.2		
8	RUGOSIN-D	Leaf	1925	1925		
2	RUGOSIN-E	Leaf	--	975		
7	SALICYLATES	Fruit	6	60	-0.16469419114376535	
0	SALICYLIC ACID BENZYL ESTER	Fruit	--	--		
1	SODIUM	Flower	200	3250	1.2911423278705607	
1	SODIUM	Fruit	200	3250	0.12424306354013467	
0	STEARIC ACID METHYL ESTER	Fruit	--	--		
12	STIGMASTEROL	Plant	--	--		
12	STIGMASTEROL	Fruit	--	140	0.7694026293001529	
0	STIGMASTEROL-3-O-BETA-D-GLUCOSIDE	Fruit	--	--		
0	STIGMASTEROL-GLUCOSIDE	Plant	--	--		
1	STRICTININ	Leaf	100	100	0.09053574604251853	
0	STRONTIUM	Flower	30	60		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	STRONTIUM	Fruit	30	60	-0.10634151712424286 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	STYRALYL-ACETATE	Flower	--	1	
0	STYRALYL-ACETATE	Fruit	1	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	SYZYGININ-A	Leaf	--	98	
0	SYZYGININ-B	Leaf	--	131	
35	TANNIN	Plant	--	--	
0	TANNINS	Fruit	--	100000	0.1858330724301565
7	TELLIMAGRANIN-I	Leaf	--	--	
7	TELLIMAGRANIN-I	Plant	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
1	TELLIMAGRANIN-II	Leaf	--	--	
23	TERPINEN-4-OL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
31	THIAMIN	Flower	--	1	-1.2611424689255089	
31	THIAMIN	Fruit	1	1	-0.5546097657802712	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
8	TRANS-ANETHOLE	Flower	--	--		
8	TRANS-ANETHOLE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-ISOEUGENOL	Fruit	--	--		
0	VALONEIC ACID BISLACTONE	Leaf	180	180		
28	VANILLIN	Flower	--	--		
28	VANILLIN	Fruit	--	--		
0	WATER	Flower	69000	252000	-3.65016767114962	
0	WATER	Fruit	69000	252000	-2.2548158431429384	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	XYLOSE	Essential Oil	--	--		
77	ZINC	Flower	10	30	-0.18495922224483477	
77	ZINC	Fruit	10	30	-0.009072324700046541	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	ZONARENE	Flower	--	1	
0	ZONARENE	Fruit	1	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.