

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Syzygium aromaticum*

Activity Count	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		
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.
4	2-UNDECANONE	Flower	--	--		
4	2-UNDECANONE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	3,3',4-TRI-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	3,3',4-TRI-O-METHYL-ELLAGIC-ACID	Fruit	--	--		
3	3,4-DIHYDROXYBENZOIC-ACID	Leaf	--	--		
1	3,4-DIHYDROXYPHENYLETHANOL	Leaf	--	--		
6	5,7-DIHYDROXY-2-METHYLCHROMONE-8-C-BETA-GLUCOPYRANOSIDE	Fruit	--	145		
6	ACETOPHENONE	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	ACETYL-EUGENOL	Flower	--	--		
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.
3	ALPHA-CADINOL	Leaf	5	8	-0.5496266023491511	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
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		
23	ALPHA-TERPINEOL	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
112	ASCORBIC-ACID	Bark	810	810	1.9840107880269489	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7	ASTRAGALIN	Fruit	--	--		
24	BENZALDEHYDE	Flower	--	--		
24	BENZALDEHYDE	Fruit	--	--		
9	BENZYL-ACETATE	Plant	--	--		
9	BENZYL-ALCOHOL	Plant	--	--		
53	BETA-CAROTENE	Bark	2	3	-0.6464926691482484	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
13	BETA-PINENE	Plant	--	--		
13	BETA-PINENE	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-SELINENE	Fruit	--	--		
47	BETA-SITOSTEROL	Plant	--	--		
47	BETA-SITOSTEROL	Fruit	--	2420	2.385350854149113	
47	BETA-SITOSTEROL	Essential Oil	1000	1000	-1	
3	BETA-TERPINEOL	Essential Oil	--	--		
7	BIFLORIN	Fruit	70	1022		
4	BORON	Flower	10	40	-0.011499571648933803	
4	BORON	Fruit	10	40	0.0014459720019340586	
28	CALCIUM	Flower	6460	9540	1.0428267398370916	
28	CALCIUM	Fruit	6460	9540	1.3115758699797868	
4	CALCIUM-OXALATE	Plant	--	--		
2	CAMPESTEROL	Plant	--	--		
2	CAMPESTEROL	Fruit	--	--		
19	CARVONE	Plant	--	--		
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
5	CASUARICTIN	Leaf	--	--		
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.
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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	CHROMIUM	Flower	3	5	0.9873869417794828	
24	CHROMIUM	Fruit	3	5	0.19465740124831715	
60	CINNAMALDEHYDE	Flower	--	1	-1	
60	CINNAMALDEHYDE	Fruit	1	1		
2	COBALT	Flower	--	0.7	-0.5111703686956748	
2	COBALT	Fruit	0.7	0.7	-0.4503737361947928	
12	COPPER	Flower	3	9	-0.8371161987468383	
12	COPPER	Fruit	3	9	-0.2972270275515491	
2	CRATEGOLIC-ACID	Seed	--	20		
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	--	--		
1	DELTA-CADINOL	Leaf	8	13	-0.10787259719937864	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
51	ELLAGIC-ACID	Plant	--	--		
51	ELLAGIC-ACID	Bark	--	--		Lowry, J. B. 1968. The Distribution and Potential Taxonomic Value of Alkylated Ellagic Acids. <i>Phytochemistry</i> 7 10: 1803-1813
51	ELLAGIC-ACID	Fruit	--	21	-0.6877437439073045	
8	ELLAGITANNIN	Fruit	3200	3200		
1	ETHYL-BENZOATE	Plant	--	--		
2	ETHYL-CINNAMATE	Plant	--	--		
5	EUGENIIN	Fruit	1640	1640		
5	EUGENIIN	Leaf	8950	8950		
76	EUGENOL	Flower	108655	180000	2.6457158873560447	
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	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
76	EUGENOL	Bulb	--	--		
1	EUGENOL-ACETATE	Bark	--	--		
1	EUGENOL-ACETATE	Fruit	--	--		
6	EUGENYL-ACETATE	Fruit	--	56700		
6	FENCHONE	Fruit	--	--		
15	FIBER	Flower	95000	100000	-0.38632916081034846	
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	
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.
62	GALLIC-ACID	Flower	--	--		
62	GALLIC-ACID	Fruit	285	12600	-0.44183433468392297	
3	GAMMA-DECALACTONE	Fruit	--	--		
1	GEMIN-D	Leaf	1125	1175		
13	GERANIAL	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
30	HYPEROSIDE	Fruit	--	--		
6	IRON	Flower	45	150	-0.11737283974721074	
6	IRON	Fruit	45	150	0.06752138925955396	
16	ISOEUGENOL	Plant	--	--		
22	ISOQUERCITRIN	Fruit	--	--		
5	KAEMPFERIDE	Fruit	--	--		
75	KAEMPFEROL	Flower	--	--		
75	KAEMPFEROL	Fruit	--	29	-0.5731869083869251	
53	LINALOOL	Fruit	1	1	-0.5854958813390855	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
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	
6	MASLINIC-ACID	Flower	--	--		
6	MASLINIC-ACID	Essential Oil	1500	1500		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MASLINIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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.
2	METHYL-N-AMYLKETONE	Flower	--	--		
2	METHYL-N-AMYLKETONE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
21	METHYL-SALICYLATE	Flower	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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	--	--		
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	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	NICKEL	Fruit	2.4	2.4	-0.04957166517347313	
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	
9	PEDUNCULAGIN	Leaf	--	--		
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
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.)
14	POTASSIUM	Flower	11020	16200	-0.3149478902442045	
14	POTASSIUM	Fruit	11020	16200	-0.15186560947876587	
11	PROCYANIDIN	Leaf	--	--		
1	PRODELPHINIDIN	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
176	QUERCETIN	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
18	RHAMNETIN	Plant	--	--		
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	
1	SODIUM	Flower	200	3250	1.2911423278705607	
1	SODIUM	Fruit	200	3250	0.12424306354013467	
12	STIGMASTEROL	Plant	--	--		
12	STIGMASTEROL	Fruit	--	140	0.7694026293001529	
1	STRICTININ	Leaf	100	100	0.09053574604251853	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	TANNIN	Plant	--	--		
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	--	--		
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.
28	VANILLIN	Flower	--	--		
28	VANILLIN	Fruit	--	--		
3	XYLOSE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
77	ZINC	Flower	10	30	-0.18495922224483477	
77	ZINC	Fruit	10	30	-0.009072324700046541	