

P Myristica fragrans

Common Name(s)

Mace, Muskatnussbaum (Ger.), nogal moscado (Sp.), nuez moscada (Sp.), Nutmeg

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-BETA-PINENE	Seed Essent. Oil	--	680000	
0	(+)-BORNEOL	Seed Essent. Oil	--	--	
0	(+)-LIMONENE	Seed Essent. Oil	--	42000	-0.683696366889014
0	(+)-LINALOOL	Seed Essent. Oil	--	--	
0	(+)-MYRISFRAGRANSIN	Seed	--	--	
0	(+)-PINENE	Seed Essent. Oil	--	--	
38	(-)-EPICATECHIN	Seed	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	1,8-CINEOL	Leaf Essent. Oil	440	3520	
0	1,8-CINEOL	Essential Oil	22000	42000	-0.6187246057790443
0	1,8-CINEOL	Seed Essent. Oil	22000	32000	
67	1,8-CINEOLE	Seed	440	5600	0.18974198009521376
0	1-(3,4,5-TRIMETHOXYPHENYL)-2-(4-ALLYL-2,6-DIME...PROPAN-1-OL	Plant	--	--	
0	1-(3,4,5-TRIMETHOXYPHENYL)-2-(4-ALLYL-2,6-DIMETHOX...PROPANE	Plant	--	--	
0	1-(3,4-METHYLENEDIOXYPHENYL)-2-(4-ALLYL-2,...PROPYL-ACETATE	Plant	--	--	
0	1-(3,4-METHYLENEDIOXYPHENYL)-2-(4-ALLYL-2,...PROPYL-BENZOATE	Plant	--	--	
0	1-(4-HYDROXY-3-METHOXYPHENYL)-2-(4-ALLYL-2,6DI...PROPAN-1-OL	Plant	--	--	
0	1-(5-ACETOXY-3,4-DIMETHOXYPHENYL)-2-(4-ALLY...PROPYL-ACETATE	Plant	--	--	
0	2-(4-ALLYL-2,6-DIMETHOXYPHENOXY)-1-(3,4,5-TRIMETHOXYPHENYL)-PROPANE	Plant	--	--	
0	2-(4-ALLYL-2,6-DIMETHOXYPHENOXY)-1-(3,4-METHYLENEDIOXYPHENYL)-1-PROPANOL	Plant	--	--	
0	2-(4-ALLYL-2,6-DIMETHOXYPHENOXY)-1-(3,4-METHYLENEDIOXYPHENYL)-ACETIC-ACID-PROPYL-ESTER	Seed	--	--	
0	2-(4-ALLYL-2,6-DIMETHOXYPHENOXY)-1-(4-ACETOXY-3-METHOXYPHENYL)-ACETIC-ACID-PROPYL-ESTER	Seed	--	--	
0	2-(4-ALLYL-2,6-DIMETHOXYPHENOXY)-1-(4-HYDROXY-3-METHOXYPHENYL)-1-PROPANOL	Plant	--	--	
0	3-METHYL-ACETATE-DEC-4-EN-1-OL	Essential Oil	--	--	
0	3-METHYL-DEC-4-EN-1-OL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	5-METHOXYDEHYDRODI-ISOEUGENOL	Seed	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
0	5-METHOXYDEHYDRODI-ISOEUGENOL	Aril	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
0	5-METHOXYEUGENOL	Essential Oil	--	--	
0	6-METHOXYDIHYDROISOEUGENOL	Plant	--	--	
16	ACETIC-ACID	Seed	--	--	
16	ACETIC-ACID	Seed Essent. Oil	--	--	
0	ALPHA-BERGAMOTENE	Essential Oil	--	20000	1
0	ALPHA-COPAENE	Essential Oil	--	3000	-0.5161346064767478
0	ALPHA-CUBEBENE	Essential Oil	--	10000	-0.2093041191378593
0	ALPHA-FARNESENE	Essential Oil	--	40000	
2	ALPHA-HUMULENE	Essential Oil	--	30000	-0.20980400443514668
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
11	ALPHA-PHELLANDRENE	Seed	180	1440	-0.46169629087131775	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Essential Oil	7000	16000	-0.28335092930230876	
11	ALPHA-PHELLANDRENE	Seed Essent. Oil	4000	10000	1.1900603576383573	
28	ALPHA-PINENE	Seed	--	--		
28	ALPHA-PINENE	Seed Essent. Oil	106000	265000	1.0864685364033468	
28	ALPHA-PINENE	Leaf Essent. Oil	--	--		
28	ALPHA-PINENE	Essential Oil	132000	265000	1.7717899589754602	
13	ALPHA-TERPINENE	Seed Essent. Oil	8000	40000	1.5419966835859091	
13	ALPHA-TERPINENE	Essential Oil	14000	42000	0.4005162309634348	
13	ALPHA-TERPINENE	Seed	400	3200	1.9998919730740246	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	ALPHA-TERPINEOL	Essential Oil	6000	14000	-0.15304926088773244	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
23	ALPHA-TERPINEOL	Seed	120	9600	2.4318339377092832	
23	ALPHA-TERPINEOL	Seed Essent. Oil	50000	77000	-0.24509218035216662	
0	ALPHA-TERPINEOL ACETATE	Essential Oil	--	--		
0	ALPHA-THUJENE	Seed Essent. Oil	--	30000	1	
0	ALPHA-THUJENE	Seed	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	AMYLODEXTRIN	Seed	250000	250000		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	ARSENIC	Seed	0.01	0.01	-0.7399437215016571	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
6	BETA-BISABOLENE	Essential Oil	--	--		
0	BETA-CARYOPHYLLENE	Seed	--	--		
0	BETA-CARYOPHYLLENE	Seed Essent. Oil	--	--		
3	BETA-PHELLANDRENE	Essential Oil	--	20000	0.6280219486295257	
3	BETA-PHELLANDRENE	Seed Essent. Oil	--	34000	0.31642638473198437	
13	BETA-PINENE	Essential Oil	80000	150000	2.600267389132106	
13	BETA-PINENE	Seed Essent. Oil	78000	191000	0.5792140753710214	
13	BETA-PINENE	Seed	--	--		
13	BETA-PINENE	Leaf Essent. Oil	--	--		
47	BETA-SITOSTEROL	Aril	--	560		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
47	BETA-SITOSTEROL	Seed	--	460	-0.4544572566816562	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
3	BETA-TERPINEOL	Seed Essent. Oil	--	--		
35	BORNEOL	Essential Oil	--	--		
0	BORNEOL-ACETATE	Seed Essent. Oil	--	9000	-1	
0	BORNEOL-ACETATE	Essential Oil	--	--		
4	BORON	Seed	3	13	-0.527070146985773	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
6	BUTYRIC-ACID	Seed	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
102	CAFFEIC-ACID	Plant	--	16	-1.0832422412570573
28	CALCIUM	Seed	1110	2000	-0.3942068364194249
28	CALCIUM	Aril	2400	2400	1.0290157581919714 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	CAMPESTEROL	Aril	--	60	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	CAMPESTEROL	Seed	--	30	-0.5601817141925177
9	CAMPHENE	Essential Oil	2000	4000	-0.5737485608606457
9	CAMPHENE	Seed Essent. Oil	2000	4000	-0.09681853268597942
9	CAMPHENE	Leaf Essent. Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
9	CAMPHENE	Seed	80	640	0.6230692441110584	
41	CAMPHOR	Seed Essent. Oil	--	34000	-1	
5	CAPRYLIC-ACID	Seed	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CAR-3-ENE	Seed Essent. Oil	--	24000	1	
0	CAR-3-ENE	Essential Oil	--	14000	-0.8351766229639247	
0	CARBOHYDRATES	Aril	478000	478000	-0.26538621350296304	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Seed	285000	285000	-0.9474588511223264	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	CARYOPHYLLENE	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	CATECHINS	Seed	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CEROTIC-ACID	Seed	--	--	
0	CEROTINIC-ACID	Seed	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	CHROMIUM	Aril	13.2	13.2	
24	CHROMIUM	Seed	16.4	16.4	1.7067997322516597
0	CIS-ISOELEMICIN	Essential Oil	--	--	
0	CIS-ISOELEMICIN	Seed Essent. Oil	--	--	
0	CIS-P-MENT-2-EN-1-OL	Seed	20	160	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-PIPERITOL	Essential Oil	1000	12000	1
0	CIS-PIPERITOL	Seed	20	160	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	CIS-PIPERITOL	Seed Essent. Oil	1000	6000	
0	CIS-SABINENE-HYDRATE	Essential Oil	2000	5000	-1
0	CIS-SABINENE-HYDRATE	Seed Essent. Oil	2000	7000	1
0	CIS-SABINENE-HYDRATE	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
15	CITRONELLOL	Seed Essent. Oil	--	--	
15	CITRONELLOL	Essential Oil	--	--	
0	CITRONELLOL-ACETATE	Essential Oil	--	--	
2	COBALT	Seed	0.6	0.6	-0.1799211298921931
2	COBALT	Aril	0.4	0.4	
1	COPAENE	Seed Essent. Oil	2000	3000	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	COPAENE	Seed	--	--	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.
1	COPAENE	Essential Oil	2000	8000	1.4001731038549101
12	COPPER	Aril	6	25	
12	COPPER	Seed	10	21	0.5610574180917248
7	CYANIDIN	Seed	--	--	
7	CYANIDIN	Plant	--	--	
0	CYMENE	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	D-ALPHA-PINENE	Seed	2600	64000	
0	D-BETA-PINENE	Seed	1800	64000	
4	D-BORNEOL	Seed	4200	25600	
0	DEHYDRODIISEOUGENOL	Fruit	--	--	
3	DEHYDROISOEUGENOL	Plant	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
3	DEHYDROISOEUGENOL	Seed	--	--	
9	DELPHINIDIN	Seed	--	--	
9	DELTA-CADINENE	Essential Oil	--	--	
0	DIARYLPROPANOIDS	Seed	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
7	DIPENTENE	Seed	3200	12800	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DL-ALPHA-PINENE	Seed Essent. Oil	--	30000	
0	DL-DEHYDROISOEUGENOL	Aril	--	--	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	DL-LIMONENE	Seed Essent. Oil	26000	80000	
3	ELEMENE	Aril	--	--	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.
16	ELEMICIN	Seed Essent. Oil	1000	21000	
16	ELEMICIN	Fruit	--	--	
16	ELEMICIN	Seed	20	3500	1.3156336050888344
16	ELEMICIN	Essential Oil	1000	12000	1
0	EO	Seed	20000	160000	1.4722054513334344
0	EO	Aril	40000	150000	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	EO	Bark	1400	1400	-0.8428135102947424 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	EO	Leaf	4100	6200	-0.46926829500195555 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
76	EUGENOL	Seed	40	320	-0.9281295905730291
76	EUGENOL	Essential Oil	2000	3000	-0.7024628939882881
76	EUGENOL	Seed Essent. Oil	1000	38000	
5	EUGENOL-METHYL-ETHER	Seed Essent. Oil	1000	6000	
5	EUGENOL-METHYL-ETHER	Seed	--	--	
5	EUGENOL-METHYL-ETHER	Fruit	--	--	
5	EUGENOL-METHYL-ETHER	Essential Oil	1000	3000	-0.6504264790408124

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	FAT	Aril	244000	324000	-0.0012580836022265188	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Seed	250000	400000	0.7090517076840918	
1	FENCHYL-ALCOHOL	Essential Oil	--	--		
15	FIBER	Seed	40000	116000	-0.1482807912686459	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Aril	38000	48000	-0.5756191235157304	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
13	FORMIC-ACID	Seed	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	FORMIC-ACID	Seed Essent. Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
6	FURFURAL	Seed	15000	15000	-1 ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	FURFUROL	Seed	15000	15000	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
11	GAMMA-TERPINENE	Essential Oil	21000	47000	-0.18034222798075647
11	GAMMA-TERPINENE	Seed Essent. Oil	19000	68000	0.310243679218955
11	GAMMA-TERPINENE	Seed	580	4640	0.008532146585622945
8	GENTISIC-ACID	Leaf	--	--	Griffiths, L. A. 1959. On the Distribution of Gentic Acid in Green Plants. J. Exp. Biol. 10: 437.
35	GERANIOL	Seed Essent. Oil	36000	119000	1.166054423172743
35	GERANIOL	Essential Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
35	GERANIOL	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	GERANIOL-ACETATE	Seed Essent. Oil	--	--	
0	GERANIOL-ACETATE	Essential Oil	--	--	
5	GERANYL-ACETATE	Seed	20	160	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	GERMACRENE-D	Essential Oil	--	--	
7	GLUCOSE	Seed	--	--	
0	GLYCERYL-TRIMYRISTATE	Seed Essent. Oil	--	--	
0	GLYCERYL-TRIMYRISTATE	Fruit	--	--	
0	GLYCERYL-TRIMYRISTATE	Essential Oil	--	--	
0	GUAIACIN	Aril	--	--	
1	HEPTADECANOIC-ACID	Seed Essent. Oil	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	HEPTADECANOIC-ACID	Seed	--	--	
0	HEXADECANOIC-ACID	Seed	--	--	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	IPURANOL	Seed	--	--	
6	IRON	Aril	126	140	0.8010516701400016 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Seed	30	45	-0.49154717004924897 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ISO-TRANS-EUGENOL	Essential Oil	--	--	
3	ISOELEMICIN	Seed	--	150	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
16	ISOEUGENOL	Essential Oil	--	--	
16	ISOEUGENOL	Seed	40	320	
16	ISOEUGENOL	Seed Essent. Oil	1000	2000	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	ISOEUGENOL-METHYL-ETHER	Essential Oil	--	--		
0	ISOEUGENOL-METHYL-ETHER	Seed	--	--		
75	KAEMPFEROL	Plant	--	--		
7	LAURIC-ACID	Seed	375	1600	-0.49798238492984703	
7	LAURIC-ACID	Seed Essent. Oil	--	--		
2	LICARIN-A	Aril	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
1	LICARIN-B	Seed	--	--		
60	LIMONENE	Seed	720	5760	-0.35141280144595843	
60	LIMONENE	Seed Essent. Oil	31000	119000	-0.37380387125652204	
60	LIMONENE	Essential Oil	36000	44000	-0.4838069631863494	
60	LIMONENE	Leaf Essent. Oil	--	--		
0	LINALOL	Seed	--	--		
53	LINALOOL	Seed	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
53	LINALOOL	Seed Essent. Oil	2000	106000	-0.16178245106593325	
53	LINALOOL	Essential Oil	2000	10000	-0.538306617674772	
0	LINALOOL-ACETATE	Essential Oil	--	--		
0	LINALOOL-ACETATE	Seed Essent. Oil	--	15000	-0.7126157804476506	
27	LINOLEIC-ACID	Seed	--	6000	-0.8664250199668236	
0	MACILENIC-ACID	Aril	50000	50000		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MACILOLIC-ACID	Aril	50000	50000		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
65	MAGNESIUM	Aril	1630	1630		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
65	MAGNESIUM	Seed	1830	2030	-0.36194664273049376	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
4	MALABARICONE-B	Seed	172	172		
4	MALABARICONE-C	Seed	172	172		
14	MANGANESE	Aril	14	14		
14	MANGANESE	Seed	23	29	-0.30545615474189847	
0	METHOXYEUGENOL	Seed	400	400		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
20	METHYL-EUGENOL	Seed	20	900		
15	METHYL-ISOEUGENOL	Seed	550	550		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
22	MYRCENE	Seed	740	5920	2.345991167533613	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Seed Essent. Oil	25000	38000	-0.3184704257903154	
22	MYRCENE	Essential Oil	16000	37000	0.041079332889888936	
6	MYRISTIC-ACID	Seed	60	304000	3.8930735310997324	
6	MYRISTIC-ACID	Seed Essent. Oil	--	3000	-1	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
6	MYRISTIC-ACID	Essential Oil	--	--		
31	MYRISTICIN	Seed Essent. Oil	5000	124000	1	
31	MYRISTICIN	Fruit	--	--		
31	MYRISTICIN	Leaf	410	620	-0.5531219396450161	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
31	MYRISTICIN	Leaf Essent. Oil	--	--		
31	MYRISTICIN	Seed	800	12800	0.5261119980916963	
31	MYRISTICIN	Essential Oil	9000	140000	-1	
10	NEROL	Essential Oil	--	--		
0	NEROL-ACETATE	Essential Oil	--	--		
5	OCTANOIC-ACID	Seed Essent. Oil	--	--		
64	OLEANOLIC-ACID	Seed	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
18	OLEIC-ACID	Seed	13000	176000	0.46772312643074876	
18	OLEIC-ACID	Seed Essent. Oil	--	--		
25	P-COUMARIC-ACID	Seed	--	7	-0.5214490785338048	
0	P-CYMEN-8-OL	Essential Oil	--	--		
16	P-CYMENE	Essential Oil	5000	8000	-0.5673446390180718	
16	P-CYMENE	Seed Essent. Oil	6000	43000	0.477275515406428	
16	P-CYMENE	Seed	120	960	-0.48494618071752577	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
16	P-CYMENE	Leaf Essent. Oil	--	--		
0	P-MENTH-CIS-2-EN-1-OL	Essential Oil	1000	3000		
0	P-MENTH-CIS-2-EN-1-OL	Seed Essent. Oil	1000	4000		
0	P-MENTH-TRANS-2-EN-1-OL	Essential Oil	--	--		
0	P-MENTH-TRANS-2-ENE-1,4-DIOL	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
13	PALMITIC-ACID	Seed Essent. Oil	--	--		
13	PALMITIC-ACID	Seed	25000	128000	1.9414542745504888	
24	PECTIN	Seed	5000	6000	-0.9783303927231646	
1	PENTADECANOIC-ACID	Seed	--	--		
1	PENTADECANOIC-ACID	Seed Essent. Oil	--	--		
0	PENTOSANS	Seed	22500	22500	-1.1707496009868077	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	PHOSPHORUS	Aril	1000	1100	-1.325160187171999	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Seed	2130	2400	-0.7804502800829126	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	PHYTOSTEROLS	Aril	730	730		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	PHYTOSTEROLS	Seed	620	620	-0.4806663138594772	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
12	PINENE	Seed	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
14	POTASSIUM	Seed	3500	5210	-0.6472690069248516	
14	POTASSIUM	Aril	4630	4630		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROANTHOCYANINS	Seed	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PROTEIN	Aril	65000	67000	-0.49678642491889624	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROTEIN	Seed	58000	75000	-1.4125732576232573	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
176	QUERCETIN	Plant	--	--		
15	RIBOFLAVIN	Seed	--	1	-0.9674166926890354	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Aril	4	5	1.3970013970020942	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
5	SABINENE	Seed	5420	43360	2.448238521283371	
5	SABINENE	Seed Essent. Oil	178000	507000	2.2344499180505175	
5	SABINENE	Essential Oil	210000	420000	2.3799502610756456	
29	SAFROLE	Essential Oil	1000	33000		
29	SAFROLE	Seed	120	2720		
29	SAFROLE	Seed Essent. Oil	1000	60000		
7	SALICYLATES	Aril	30	320		
7	SALICYLATES	Seed	2	25	-0.20604527298924552	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
5	SCLAREOL	Seed	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	SODIUM	Aril	800	800	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SODIUM	Seed	109	160	-0.4617295086785716
5	STARCH	Aril	317000	317000	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	STARCH	Seed	300000	300000	-0.04114411632752793 Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
8	STEARIC-ACID	Seed Essent. Oil	--	--	
8	STEARIC-ACID	Seed	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
12	STIGMASTEROL	Aril	--	110		Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
12	STIGMASTEROL	Seed	--	130	-0.3650596814937978	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
23	TERPINEN-4-OL	Essential Oil	30000	63000	-0.0049821192011661975	
23	TERPINEN-4-OL	Seed Essent. Oil	30000	247000	1.729953772502488	
23	TERPINEN-4-OL	Seed	600	4800	1.9180648061337349	
0	TERPINEN-4-OL-ACETATE	Seed Essent. Oil	--	1000		
0	TERPINEN-4-OL-ACETATE	Essential Oil	1000	2000	-1	
0	TERPINEN-4-YL-ACETATE	Seed	20	160		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
18	TERPINEOL	Seed	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
9	TERPINOLENE	Seed Essent. Oil	14000	26000	1.7063760230495335	
9	TERPINOLENE	Seed	340	2720	1.6783192383826524	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	TERPINOLENE	Essential Oil	10000	17000	-0.26806226806153055	
31	THIAMIN	Aril	3	3	0.23017413505937473	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Seed	3	4	-0.6165338688916807	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	TRANS-ISOELEMICIN	Essential Oil	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	TRANS-ISOELEMICIN	Seed Essent. Oil	--	1000		
0	TRANS-ISOEUGENOL	Essential Oil	--	--		
0	TRANS-ISOEUGENOL-METHYL-ETHER	Essential Oil	--	--		
0	TRANS-PIPERITOL	Essential Oil	--	--		
0	TRANS-SABINENE-HYDRATE	Essential Oil	3000	9000	-1	
0	TRANS-SABINENE-HYDRATE	Seed Essent. Oil	3000	8000	1	
0	TRANS-SABINENE-HYDRATE	Seed	60	480	1	
2	TRIDECANOIC-ACID	Seed	--	--		
2	TRIDECANOIC-ACID	Seed Essent. Oil	--	--		
0	TRIMYRISTIN	Seed	--	--		
0	TRIMYRISTIN	Essential Oil	--	--		
28	VANILLIN	Essential Oil	--	--		
0	WATER	Aril	82000	159000	-1.3837024488653438	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	WATER	Seed	62000	143000	-0.3246727321556146	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
77	ZINC	Aril	20	20		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
77	ZINC	Seed	13	20	-0.7135039207289134	