

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Elettaria cardamomum*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOL	Fruit	1288.0	8000.0	0.7335098243244321	--
0	1,4-CINEOLE	Seed Essent. Oil				--
0	NERYLIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PROTEIN	Seed	108000.0	118000.0	-1.0300659888675268	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	N-HEPTACOSENE	Seed				--
0	OCTAN-1-OL	Fruit Essent. Oil				--
0	BETA-SITOSTENONE	Seed				--
0	TRANS-SABINENE-HYDRATE	Fruit	875.0	2500.0	1.9988936839515734	--
0	EO	Seed Essent. Oil		64500.0	1.0	--
0	EO	Fruit	25000.0	100000.0	1.1237392472820933	--
0	PROTEIN	Fruit	100000.0	128000.0	0.24802011650290137	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	LINALOOL-ACETATE	Seed Essent. Oil		16000.0	-0.7015834378873093	--
0	N-HEPTACOSANE	Seed				--
0	3-(BUT-CIS-1-ENYL)-PYRIDINE	Essential Oil				--
0	SFA	Fruit	6800.0	7390.0	-0.2169348019998841	Revised USDA data received 1993.
0	DELTA-LIMONENE	Seed Essent. Oil		26000.0		--
0	DESMOSTEROL	Seed				--
0	ALPHA-THUJENE	Root Essent. Oil		11000.0	-0.638798325513007	--
0	ALPHA-COPAENE	Seed				--
0	LINALOOL-ACETATE	Fruit Essent. Oil	26000.0	31000.0		--
0	N-HENTRIACTANE	Seed				--
0	TERPENYL-ACETATE	Fruit Essent. Oil		377000.0		--
0	CARDIOLIPIN	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-THUJENE	Fruit	1330.0	3047.0	2.2243250322627803	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	TRANS-P-MENTH-2-EN-1-OL	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	ASH	Seed		58000.0	0.30438219732588906	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	N-TRITRIACONTENE	Seed				--
0	DELTA-5,7,22-CHOLESTATRIENOL	Seed				--
0	LINOLENIC-ACID	Fruit	1200.0	1305.0	-0.7476429173800373	Revised USDA data received 1993.
0	ALPHA-TERPINYL-ACETATE	Seed Essent. Oil				--
0	7-ERGOSTEROL	Seed				--
0	N-HENTRIACONTENE	Seed				--
0	BETA-CARYOPHYLLENE	Fruit Essent. Oil				--
0	CARBOHYDRATES	Seed	685000.0	747000.0	0.8886224845650202	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	METHYL-HEPTENONE	Seed	18.0	51.0		Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	(+)-LIMONENE	Root Essent. Oil		214000.0		--
0	TERPINEOL-FORMIATE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ASH	Fruit		54000.0	-0.06897899594447202	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	SUGAR	Seed		50000.0	-0.33796445974687406	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	N-TRITRIACONTANE	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	D-PHI-TERPINYL-ACETATE	Seed				Chemical Constituents of Oriental Herbs (3 diff. books)
0	ALPHA-TERPINEOL ACETATE	Seed				--
0	ARACHIDIC-ACID	Seed Oil				--
0	CARBOHYDRATES	Fruit	421000.0	778000.0	-0.026104839799594735	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	(+)-LIMONENE	Fruit Essent. Oil				--
0	METHYL-HEPTANONE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	ALPHA-YLANGENE	Seed				--
0	N-TRICOSENE	Seed				--
0	D-ALPHA-TERPINYL-ACETATE	Fruit				Chemical Constituents of Oriental Herbs (3 diff. books)
0	ALPHA-TERPINEOL ACETATE	Fruit Essent. Oil	303300.0	430000.0	1.0	--
0	METHYL-HEPTENONE	Plant	18.0	51.0	-0.18660125966624988	--
0	1,4-CINEOLE	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	P-MENTHENE	Fruit Essent. Oil				--
0	HEPTANONE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	N-TRICOSANE	Seed				--
0	3-TRIDECANE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	HEPTANOIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PHOSPHATIDYL-INOSITOL	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	P-MENTH-TRANS-2-EN-1-OL	Seed Essent. Oil				--
0	DELTA-TERPINEOL	Fruit Essent. Oil				--
0	ALPHA-THUJENE	Plant	1330.0	3047.0	1.2969582121204046	--
0	N-PENTACOSENE	Seed				--
0	2-UNDECANE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
0	GERANIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PHOSPHATIDYL-ETHANOLAMINE	Seed				--
0	LYSOPHOSPHATIDYLCHOLINE	Seed				--
0	4-HYDROXY-BENZOIC-ACID	Leaf				--
0	P-MENTH-CIS-2-EN-1-OL	Seed Essent. Oil				--
0	METHYL-HEPTENONE	Seed Essent. Oil				--
0	ALPHA-TERPINYL-ACETATE	Fruit	1050.0	50000.0	1.4142077668473696	--
0	N-PENTACOSANE	Seed				--
0	(+)-ALPHA-TERPINEOL	Seed				--
0	HUMULENE-OXIDE	Fruit Essent. Oil				--
0	METHYL-HEPTENONE	Fruit Essent. Oil	300.0	1000.0		--
0	FAT	Seed	67000.0	100000.0	-0.8711556020733713	--
0	N-NONACOSENE	Seed				--
0	BISABOLENE	Seed				--
0	FAT	Fruit	10000.0	100000.0	0.12253986651771635	--
0	CIS-P-MENTH-2-EN-1-OL	Fruit	525.0	1500.0		Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CITRONELLIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	GERANIOL-ACETATE	Seed Essent. Oil		7000.0	-0.843229874438314	--
1	CHOLESTEROL	Seed				--
1	N-HEPTANE	Seed Essent. Oil		17900.0		--
1	PHYTOL	Seed				--
1	PERILLIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	SODIUM	Seed	180.0	196.0	-0.4045824561803137	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	DODECANOIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	PENTADECANOIC-ACID	Seed Oil				--
1	N-NONACOSANE	Seed				--
2	PHYTOSTEROLS	Fruit	460.0	500.0	-0.5737684759640957	Revised USDA data received 1993.
2	HEXANOIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	CAMPESTEROL	Seed	40.0	55.0	-0.5085407308824086	--
2	PHYTOSTEROLS	Seed	460.0	600.0	-0.4861647488503628	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	COBALT	Fruit	0.4	0.8	-0.43826781025666195	--
2	PALMITOLEIC-ACID	Fruit	200.0	650.0	-0.2266299178669845	Revised USDA data received 1993.
2	HUMULENE	Fruit Essent. Oil				--
2	TERPINEOL-ACETATE	Seed Essent. Oil		382000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-PHELLANDRENE	Seed Essent. Oil		32500.0	0.2534211311349079	--
3	BETA-TERPINEOL	Seed Essent. Oil				--
3	DECANOIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	CAPRIC-ACID	Seed Oil				--
4	PUFA	Fruit	4300.0	4675.0	-0.5048519402783854	Revised USDA data received 1993.
4	PHOSPHORUS	Seed	1780.0	1941.0	-0.90174516903946	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Fruit	1600.0	2000.0	-0.3693459584082821	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	BORON	Seed	1.0	14.0	-0.4796351890415661	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).
5	NERYL-ACETATE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
5	NERYL-ACETATE	Seed Essent. Oil				--
5	GERANYL-ACETATE	Fruit	525.0	1500.0	1.586814525845496	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
5	MYRTENAL	Fruit Essent. Oil				--
5	SABINENE	Root Essent. Oil		384000.0	-1.0	--
5	SABINENE	Seed Essent. Oil		21100.0	-0.38732143908896777	--
5	STARCH	Seed	200000.0	400000.0	0.3637981937344068	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	SABINENE	Fruit Essent. Oil	27000.0	49000.0	-0.4324265291346702	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	SABINENE	Fruit	500.0	1425.0	-0.08802822268836079	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	CAPRYLIC-ACID	Seed Oil				--
6	EUGENYL-ACETATE	Seed				--
6	BUTYRIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
6	IRON	Seed	140.0	153.0	0.01025391749776786	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	MYRISTIC-ACID	Fruit	300.0	325.0	-0.2538115654361021	Revised USDA data received 1993.
6	IRON	Fruit	42.0	66.0	-0.26568397107756236	--
6	MYRISTIC-ACID	Seed Oil				--
7	LINALYL-ACETATE	Fruit	1197.0	8000.0		--
7	SALICYLATES	Fruit		75.0	-0.12168222884000186	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
7	CYANIDIN	Leaf				--
7	LAURIC-ACID	Seed Oil				--
7	LINALYL-ACETATE	Plant	1197.0	8000.0	3.2689973925149545	--
8	STEARIC-ACID	Fruit	600.0	650.0	-0.23611473454753784	Revised USDA data received 1993.
8	STEARIC-ACID	Seed Oil				--
8	STEARIC-ACID	Seed	1830.0	18300.0	-0.16834218160275924	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	CAMPHENE	Seed Essent. Oil				--
9	SINAPIC-ACID	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	CAMPHENE	Fruit	10.0	30.0	-0.33936437581442985	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
10	NEROL	Fruit	10.0	30.0	1.7314244526151554	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
10	NEROL	Seed Essent. Oil		3000.0	-1.0	--
11	NEROLIDOL	Fruit	448.0	1280.0	-0.27992970059610406	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
11	ALPHA-PHELLANDRENE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
11	NEROLIDOL	Seed Essent. Oil		12000.0		--
11	GAMMA-TERPINENE	Fruit	49.0	140.0	-0.6255612447127588	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
11	GAMMA-TERPINENE	Root Essent. Oil		33000.0	-1.0	--
12	STIGMASTEROL	Seed	60.0	80.0	-0.4285915570564291	--
12	COPPER	Fruit	3.8	15.4	0.20088141553943706	--
13	BETA-PINENE	Fruit Essent. Oil				--
13	BETA-PINENE	Fruit	70.0	1094.0	-0.26279401706162475	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
13	MUFA	Fruit	8700.0	9455.0	-0.11635628749295267	Revised USDA data received 1993.
13	ALPHA-TERPINENE	Root Essent. Oil		7000.0	-0.6459900875555472	--
13	PALMITIC-ACID	Seed	5828.0	8400.0	-0.5262817939159874	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Fruit	840.0	6195.0	-0.2690925616143795	Revised USDA data received 1993.
13	BETA-PINENE	Root Essent. Oil		28000.0	-0.8323706430172229	--
13	PALMITIC-ACID	Seed Oil				--
13	BETA-PINENE	Seed Essent. Oil	3800.0	26000.0	-0.661153509784313	--
13	ALPHA-TERPINENE	Fruit	21.0	60.0	-0.12467700979131179	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
14	POTASSIUM	Seed	11790.0	12857.0	0.025234953019076498	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
14	GAMMA-TOCOPHEROL	Seed				--
14	MANGANESE	Fruit	66.0	280.0	1.4427459841229469	--
15	CITRONELLOL	Fruit Essent. Oil		5000.0	1.0	--
15	ASCARIDOLE	Fruit				Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
15	FIBER	Seed	113000.0	123000.0	-0.09300759572615179	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Fruit	201000.0	251000.0	1.0316302183851198	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	CITRONELLOL	Fruit	14.0	40.0	2.194384347727115	--
15	RIBOFLAVIN	Seed	1.0	2.0	-0.5841625019907875	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
16	P-CYMENE	Fruit Essent. Oil		5000.0	-0.9962725072187498	--
16	ACETIC-ACID	Fruit				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
16	P-CYMENE	Fruit	130.0	28000.0	3.1268626509574724	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
16	P-CYMENE	Root Essent. Oil		7000.0	-0.5801460208228617	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Seed Essent. Oil				--
18	OLEIC-ACID	Seed Oil				--
18	OLEIC-ACID	Seed	41942.0	62600.0	-0.46449145602655795	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
18	OLEIC-ACID	Fruit	8500.0	9240.0	-0.4095293861159601	Revised USDA data received 1993.
19	ACETYL-CHOLINE	Pericarp		70.0	1.0	--
19	ACETYL-CHOLINE	Seed		165.0	1.8803761294063241	--
19	CARVONE	Fruit Essent. Oil				--
20	CHOLINE	Pericarp		2663.0	1.0	--
20	CHOLINE	Seed		4195.0	2.3743243649568977	--
20	CITRONELLAL	Plant				--
22	MYRCENE	Fruit	336.0	3000.0	0.08390905500959031	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
22	MYRCENE	Root Essent. Oil		186000.0	1.9897792117406918	--
22	MYRCENE	Seed Essent. Oil		271400.0	2.188477209267345	--
22	MYRCENE	Fruit Essent. Oil	14000.0	19000.0	-0.7123427236991273	--
23	TERPINEN-4-OL	Seed Essent. Oil		13000.0	-0.5404286322399808	--
23	TERPINEN-4-OL	Fruit Essent. Oil		27000.0	1.4135559855648545	--
23	TERPINEN-4-OL	Fruit	252.0	23200.0	3.155848425568043	--
23	ALPHA-TERPINEOL	Seed Essent. Oil	44000.0	448400.0	2.14826195942333	--
23	ALPHA-TERPINEOL	Fruit Essent. Oil	17000.0	28000.0	0.3488244464514957	--
23	ALPHA-TERPINEOL	Fruit	301.0	4300.0	3.129748982046047	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
24	CHROMIUM	Fruit	20.5	29.5	3.6358814153792958	--
24	VANILLIC-ACID	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	P-COUMARIC-ACID	Leaf				--
25	P-COUMARIC-ACID	Fruit		19.0	-0.682898261666777	--
27	LINOLEIC-ACID	Seed Oil				--
27	LINOLEIC-ACID	Fruit	3100.0	3370.0	-0.30785428228838985	Revised USDA data received 1993.
27	LINOLEIC-ACID	Seed	7035.0	10500.0	-0.82786857321412	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
28	ALPHA-PINENE	Fruit	217.0	3000.0	0.06445786160358473	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
28	ALPHA-PINENE	Fruit Essent. Oil	12000.0	16000.0	-0.6371982242858282	--
28	CALCIUM	Seed	3830.0	4177.0	0.005616516315891836	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Fruit	1300.0	1625.0	-0.5148924842800362	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	ALPHA-PINENE	Root Essent. Oil		123000.0	0.14189313736220527	--
28	ALPHA-PINENE	Seed Essent. Oil	6900.0	17000.0	-0.6246262641585064	--
30	MENTHONE	Seed Essent. Oil		57700.0		--
31	THIAMIN	Seed	1.0	2.0	-1.0937002421726418	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	CARYOPHYLLENE	Fruit Essent. Oil				--
32	ALPHA-TOCOPHEROL	Seed				--
35	GERANIOL	Fruit Essent. Oil		12000.0		--
35	GERANIOL	Seed Essent. Oil		5000.0	-1.2760191391363693	--
35	BORNEOL	Seed Essent. Oil				--
35	GERANIOL	Plant	49.0	140.0	-0.42560309181043426	--
35	BORNEOL	Fruit	32.0	8000.0	1.414213259765724	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
39	NIACIN	Seed	11.0	12.0	-0.9245464566376991	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
41	CAMPHOR	Fruit	7.0	20.0	-0.8661900913537282	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
47	BETA-SITOSTEROL	Seed	360.0	480.0	-0.44678266643949144	--
53	LINALOOL	Seed Essent. Oil		26000.0	-0.4608027687850245	--
53	LINALOOL	Fruit Essent. Oil	51000.0	64000.0	1.4140174751728773	--
53	LINALOOL	Fruit	1288.0	8000.0	1.651823927016786	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
60	LIMONENE	Seed Essent. Oil		84600.0	-0.5175355633899679	--
60	LIMONENE	Fruit Essent. Oil		25000.0	-1.1610447246264288	--
60	LIMONENE	Fruit	595.0	9481.0	0.6095312442214162	--
67	1,8-CINEOLE	Fruit	525.0	56000.0	2.8178415879493794	Duke, J. A. and duCellier, J. L. 1993. CRC Handbook of Alternative Cash Crops. CRC Press. Boca Raton, FL 33431. 536 pp. US \$312.50.
67	1,8-CINEOLE	Seed Essent. Oil	23100.0	308000.0	1.0	--
67	1,8-CINEOLE	Fruit Essent. Oil	342000.0	360000.0	-0.4996991087091834	--
77	ZINC	Fruit	23.0	28.0	-0.06924407952072656	--
102	CAFFEIC-ACID	Fruit		2.0	-0.3385433113198586	--