

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Carum carvi*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	(+)-CARVONE	Plant	--	--		
2	(+)-CARVONE	Seed Essent. Oil	--	--		
2	(+)-CARVONE	Seed	9000	55760		
0	(+)-CIS-CARVEOL	Seed Essent. Oil	--	--		
0	(+)-DIHYDROCARVEOL	Essential Oil	--	600		
0	(+)-LIMONENE	Seed Essent. Oil	--	--		
0	(+)-TRANS-CARVEOL	Seed Essent. Oil	--	--		
0	(-)-CARVONE	Seed Essent. Oil	--	--		
0	(-)-CIS-CARVEOL	Seed Essent. Oil	--	--		
0	(-)-DIHYDROCARVONE	Essential Oil	--	10		
0	(-)-LIMONENE	Seed Essent. Oil	--	--		
0	(-)-TRANS-CARVEOL	Seed Essent. Oil	--	--		
0	(E)-BETA-OCIMENE	Seed	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(E)-DIHYDROCARVONE	Seed	--	--		
0	(E)-P-MENTHA-2,8-DIEN-1-OL	Seed	--	--		
0	(Z)-BETA-OCIMENE	Seed	--	--		
0	(Z)-DIHYDROCARVONE	Seed	--	--		
0	(Z)-P-MENTHA-2,8-DIEN-1-OL	Seed	--	--		
67	1,8-CINEOLE	Seed	--	0.1	-0.7134832654336017	
0	1-P-MENTHENE-6-AN-OL	Seed	50	155		
0	1-P-MENTHENE-8,9-DIOL	Seed	40	125		
0	2,4-HEXADIENAL	Seed	--	--		
0	2,8-P-MENTHADIENE-1-OL	Seed	120	365		
0	2,8-P-MENTHADIENE-6-OL	Seed	110	330		
0	2-METHYL-BENZALDEHYDE	Seed	--	--		
0	4-METHYL-BENZALDEHYDE	Seed	--	--		
10	5-METHOXY-PSORALEN	Seed	--	--		
10	5-METHOXY-PSORALEN	Plant	--	--		Wealth of India.
0	8-CIS-MENTHENE	Seed	--	0.1		
21	8-METHOXY-PSORALEN	Plant	--	--		Wealth of India.
0	8-P-MENTHENE-1,2-DIOL	Seed	30	85		
0	8-P-MENTHENE-1,2-DIOL-ISOMER	Seed	30	85		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	8-P-MENTHENE-7-AL	Seed	30	85		
0	ABSCISIC-ACID	Seed	--	0.12	-0.49402184451606584	
6	ACETALDEHYDE	Fruit	--	--		
6	ACETALDEHYDE	Seed	--	--		
3	ALANINE	Seed	9140	10150	-0.0013229586167773184	Revised USDA data received 1993.
15	ALPHA-LINOLENIC-ACID	Fruit	1500	1664	-0.39890612938011816	
15	ALPHA-LINOLENIC-ACID	Seed	1500	1664	-0.29806400798854177	USDA's Ag Handbook 8 and sequelae)
11	ALPHA-PHELLANDRENE	Fruit	3	6	-0.5736201696885931	
11	ALPHA-PHELLANDRENE	Seed	3	6	-0.5312072630899651	
28	ALPHA-PINENE	Fruit	42	540	-0.577800039343025	
28	ALPHA-PINENE	Plant	20	20	-0.46732168198180957	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
28	ALPHA-PINENE	Seed	4	540	-0.4451814085289362	
13	ALPHA-TERPINENE	Seed	6	12	-0.5062619617372923	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	ALPHA-TERPINEOL	Seed	--	--		
0	ALPHA-THUJENE	Seed	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ARABINOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
14	ARGININE	Seed	12520	13900	-0.45478768617160453	Revised USDA data received 1993.
0	ASH	Fruit	56460	67620	0.28371563599880156	
0	ASH	Seed	55000	67620	0.5937289975821403	
3	ASPARTIC-ACID	Seed	20840	23130	0.048029804288976026	Revised USDA data received 1993.
7	ASTRAGALIN	Seed	--	--		
0	BENZOIC-ACID-4-O-BETA-D-GLUCOSIDE	Seed	--	37	-1	
53	BETA-CAROTENE	Fruit	--	2	-0.14693466516508752	
53	BETA-CAROTENE	Seed	2	2	-0.30429005311638807	
0	BETA-CARYOPHYLLENE	Seed	20	1320	0.9233136232225039	
5	BETA-ELEMENE	Essential Oil	--	--		
5	BETA-ELEMENE	Seed Essent. Oil	--	--		
0	BETA-FENCHENE	Seed	--	--		
2	BETA-MYRCENE	Seed	--	--		
3	BETA-PHELLANDRENE	Seed	--	--		Wealth of India.
13	BETA-PINENE	Fruit	270	600	-0.2786206877223514	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	BETA-PINENE	Plant	20	20	-0.4138919250596763	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	BETA-PINENE	Seed	40	600	-0.6190200878086086	
47	BETA-SITOSTEROL	Root	--	--		
47	BETA-SITOSTEROL	Seed	--	420	-0.4698064371659858	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
4	CADINENE	Plant	3720	29760	1.4141020257548391	
102	CAFFEIC-ACID	Seed	--	2840	1.9446682932160153	
28	CALCIUM	Fruit	6426	8160	0.993126554897215	
28	CALCIUM	Seed	1530	8160	0.7371261230888665	
4	CALCIUM-OXALATE	Fruit	--	--		
4	CALCIUM-OXALATE	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.
2	CAMPESTEROL	Seed	--	30	-0.5601817141925177	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
9	CAMPHENE	Fruit	1	900	0.021412618138643334	
9	CAMPHENE	Plant	30	30	-0.5545069597862352	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
9	CAMPHERE	Seed	1	900	1.5222256000900138	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	CAPRIC-ACID	Fruit	100	110	-0.6828803041071304	
3	CAPRIC-ACID	Seed	100	110	-0.5239374828451797	USDA's Ag Handbook 8 and sequelae)
0	CARBOHYDRATES	Fruit	499000	554000	-1.2239479546663645	
0	CARBOHYDRATES	Seed	300000	554000	0.12160149368264386	
37	CARVACROL	Plant	--	--		
37	CARVACROL	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
37	CARVACROL	Seed Essent. Oil	--	595300		
1	CARVEOL	Plant	430	430		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	CARVEOL	Seed	120	3240	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	CARVEOL	Essential Oil	--	--		
19	CARVONE	Fruit	9000	44310	1.99999975413892	
19	CARVONE	Plant	3120	3120	0.11898806640618137	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
19	CARVONE	Seed	10880	44310	0.5757430989637712	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	CARVONE	Essential Oil	264000	580000	1.456771501873754	
19	CARVONE	Seed Essent. Oil	595300	900000	1.38528277461378	
0	CARVONE-EPOXIDE(8,9)	Seed	25	80		
0	CARVYL-ACETATE	Plant	55	55		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CARVYL-ACETATE	Seed	45	90		
24	CHROMIUM	Fruit	--	15.5	1.6694676930187362	
24	CHROMIUM	Seed	15.5	15.5	1.5756788450079844	
0	CIS-2-CARVEOL	Seed	75	230		
0	CIS-BETA-OCIMENE	Seed	--	--		
0	CIS-CARVEOL	Seed	21	42		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-CARVEOL	Flower Essent. Oil	--	--		
0	CIS-DIHYDROCARVONE	Seed	15	50	-0.70302870575708	
0	CIS-LIMONENE-DIEPOXIDE	Seed	55	160		
0	CIS-LIMONENE-EPOXIDE	Seed	300	900		
0	CIS-P-MENTH-8-EN-1-OL	Plant	--	--		
15	CITRONELLOL	Seed	--	0.1		
2	COBALT	Fruit	--	1	-0.4140559583804006	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	COBALT	Seed	1	1	-0.16257255524625883	
12	COPPER	Fruit	9	13.8	0.07635430476669072	
12	COPPER	Seed	9	13.8	0.2889427800893567	
10	CUMINALDEHYDE	Essential Oil	--	370000	1	
10	CUMINALDEHYDE	Plant	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
2	CYSTINE	Seed	3290	3650	0.34786844092544134	Revised USDA data received 1993.
0	D-DIHYDROPINOL	Seed	--	--		
0	D-PERILLALDEHYDE	Fruit	--	--		
0	D-PERILLALDEHYDE	Seed	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	DECAN-1-AL	Seed	--	--		
0	DECANAL	Seed	--	--		
8	DELTA-3-CARENE	Fruit	90	180	-0.31208082478300797	
8	DELTA-3-CARENE	Plant	100	100	-0.29930598714761825	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	DELTA-3-CARENE	Seed	90	180	-0.16222142113076254	
0	DELTA-3-CARENE-EPOXIDE	Seed	5	20		
2	DIACETYL	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	DIACETYL	Seed	--	--		
2	DIHYDROCARVEOL	Fruit	360	720		
2	DIHYDROCARVEOL	Plant	950	950		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	DIHYDROCARVEOL	Seed	200	720		
2	DIHYDROCARVEOL	Essential Oil	--	--		
0	DIHYDROCARVONE	Fruit	240	1500		
0	DIHYDROCARVONE	Plant	230	230		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DIHYDROCARVONE	Seed	240	1500	1.222391887709424	
0	DIHYDROCARVONE	Essential Oil	--	5000	-0.5088490622892315	
1	DIHYDROCARVYL-ACETATE	Fruit	45	90		
1	DIHYDROCARVYL-ACETATE	Plant	55	55	-0.6178866361535852	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	DIHYDROCARVYL-ACETATE	Seed	45	90		
0	DIHYDROPINOL	Essential Oil	--	2800		
0	EICOSENOIC-ACID	Seed	1000	1800	-1.3117937762239429	
0	EO	Fruit	30000	70000	0.54062890380803	
0	EO	Plant	10000	10000	0.019853678703787233	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	EO	Seed	20000	82000	0.4861364448600147	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	FALCARINDIOL	Root	--	290	1.3544986584188263	
0	FALCARINDION	Root	--	--		
0	FALCARINOL-ONE	Root	--	--		
3	FALCARINONE	Plant	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	FAT	Fruit	127000	176826	0.7093306748827288	
0	FAT	Seed	100000	176826	-0.44976698613804794	
15	FIBER	Fruit	112730	155640	0.13176741912032305	
15	FIBER	Seed	112730	155640	0.6966094834523356	
0	FUCOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
6	FURFURAL	Fruit	--	--		
6	FURFURAL	Seed	--	--		
1	GALACTOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
0	GAMMA-ELEMENE	Seed	--	--		
11	GAMMA-TERPINENE	Fruit	12	14160	1.9544259127217853	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
11	GAMMA-TERPINENE	Plant	270	2215	0.3668556912256766	
11	GAMMA-TERPINENE	Seed	12	14160	1.7263032899871258	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	GERANIAL	Seed	--	--		
2	GERMACRENE-D	Essential Oil	--	--		
2	GERMACRENE-D	Seed Essent. Oil	--	--		
7	GLUCOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
8	GLUTAMIC-ACID	Seed	31690	35175	-0.2758530020526007	Revised USDA data received 1993.
12	GLYCINE	Seed	13220	14675	0.5382536999822551	Revised USDA data received 1993.
12	HERNIARIN	Plant	--	--		Wealth of India.
0	HEXA-2,4-DIEN-1-AL	Seed	--	--		
0	HEXADECENIC-ACID	Seed	--	1000		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
7	HISTIDINE	Seed	5500	6105	-0.005073065220825094	Revised USDA data received 1993.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HYDROXYCOUMARINS	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
30	HYPEROSIDE	Seed	--	--		
6	IRON	Fruit	123	286	0.6069967345672661	
6	IRON	Seed	123	286	4.874936682884126	
0	ISO-DIHYDROCARVEOL	Fruit	--	--		
0	ISO-DIHYDROCARVEOL	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ISODIHYDROCARVONE	Fruit	--	--		
0	ISODIHYDROCARVONE	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	ISOLEUCINE	Seed	8260	9170	-0.16863241397137768	Revised USDA data received 1993.
22	ISOQUERCITRIN	Seed	--	--		
22	ISOQUERCITRIN	Shoot	--	--		
1	ISORHAMNETIN-3-GALACTOSIDE	Seed	--	--		Wealth of India.
1	ISORHAMNETIN-3-GLUCOSIDE	Seed	--	--		Wealth of India.
75	KAEMPFEROL	Seed	--	--		
75	KAEMPFEROL	Leaf	--	--		
75	KAEMPFEROL	Flower	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KAEMPFEROL-3-0-GALACTOSIDE	Seed	--	--		Wealth of India.
0	KAEMPFEROL-3-0-GLUCOSIDE	Seed	--	--		Wealth of India.
0	KILOCALORIES	Seed	3330	3700	-0.9069114205711409	Revised USDA data received 1993.
7	LAURIC-ACID	Fruit	100	110	-0.44416811720185917	
7	LAURIC-ACID	Seed	100	110	-0.511344659660987	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Seed	12180	13520	-0.3408978107463804	Revised USDA data received 1993.
60	LIMONENE	Fruit	7860	30180	3.5781164025182557	
60	LIMONENE	Plant	420	420	-0.22767736339342154	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
60	LIMONENE	Seed	3000	30180	2.245951109203175	
60	LIMONENE	Essential Oil	250000	500000	2.140871457019611	
60	LIMONENE	Seed Essent. Oil	--	381600	0.7234037553203063	
0	LIMONENE-4-OL	Seed	20	55		
0	LINALOL	Fruit	48	96	-0.6231721368623974	
53	LINALOOL	Seed	5	96	-0.464767259448611	
27	LINOLEIC-ACID	Fruit	20300	46714	0.3036638054156712	
27	LINOLEIC-ACID	Seed	19600	46714	-0.5175834259469172	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINOLENIC-ACID	Seed	600	4140	-0.5075880129054059	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
4	LYSINE	Seed	10310	11445	-0.08853511037990262	Revised USDA data received 1993.
65	MAGNESIUM	Fruit	2580	2863	0.3395434445319955	
65	MAGNESIUM	Seed	2070	2863	0.0015393251037586135	
14	MANGANESE	Fruit	13	34	-0.17934592524588852	
14	MANGANESE	Seed	13	34	-0.24317239745397942	
0	MANNANS	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
3	MANNOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
2	METHANOL	Fruit	--	--		
2	METHANOL	Seed	--	--		
15	METHIONINE	Seed	3610	4005	-0.07999578248445874	Revised USDA data received 1993.
0	METHYL-3,7-DIMETHYL-2,6-OCTADIENOATE	Seed	--	--		
13	MUFA	Seed	71250	79085	-0.21948429390500326	Revised USDA data received 1993.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
22	MYRCENE	Fruit	180	1560	-0.14096760282697604	
22	MYRCENE	Plant	150	150	-0.3113042330188643	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Seed	12	1560	-0.1814418669231581	
6	MYRISTIC-ACID	Fruit	400	444	-0.24819764617872128	
6	MYRISTIC-ACID	Seed	400	444	-0.29019087360930124	USDA's Ag Handbook 8 and sequelae)
31	MYRISTICIN	Fruit	60	420		
31	MYRISTICIN	Plant	120	120	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
31	MYRISTICIN	Seed	60	420	-0.9148647060412254	
5	N-NONANAL	Fruit	6	12		
5	N-NONANAL	Seed	6	12		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	N-OCTANAL	Fruit	24	48		
2	N-OCTANAL	Seed	24	48		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	NEODIHYDROCARVEOL	Fruit	--	--		
0	NEODIHYDROCARVEOL	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	NEOISODIHYDROCARVEOL	Fruit	--	--		
0	NEOISODIHYDROCARVEOL	Seed	--	--		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
39	NIACIN	Fruit	21	56	-0.0628056202874991	
39	NIACIN	Seed	21	56	0.3925544644928447	USDA's Ag Handbook 8 and sequelae)
3	NICKEL	Fruit	--	7	1.349383302912262	
3	NICKEL	Seed	7	10	1.003733061132988	
18	OLEIC-ACID	Fruit	54400	95648	0.2564460151509538	
18	OLEIC-ACID	Seed	29000	241000	1.0020612909785875	
0	P-1(7),8-MENTHADIENE-6-OL	Seed	10	25		
25	P-COUMARIC-ACID	Seed	--	86	-0.2878871950232701	
16	P-CYMENE	Seed	0.1	1320	-0.39090586317354775	
0	P-MENTHA-2,8-DIEN-1-OL	Seed	--	--		
13	PALMITIC-ACID	Fruit	2000	6658	-0.2618846307910205	
13	PALMITIC-ACID	Seed	2000	6658	-0.5139018470842157	
2	PALMITOLEIC-ACID	Fruit	900	999	-0.16284284724499656	
2	PALMITOLEIC-ACID	Seed	900	999	-0.27448704739952007	USDA's Ag Handbook 8 and sequelae)
11	PERILLALDEHYDE	Seed	20	60	-0.4953847300732596	
14	PERILLYL-ALCOHOL	Plant	160	1310	-1	
14	PERILLYL-ALCOHOL	Essential Oil	--	800		
0	PETROSELINIC-ACID	Plant	33020	33020		
0	PETROSELINIC-ACID	Seed Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PETROSELINIC-ACID	Seed	40000	354000	-0.8033510875816932	
7	PHENYLALANINE	Seed	8670	9625	-0.22873636959027158	Revised USDA data received 1993.
4	PHOSPHORUS	Fruit	5680	6302	0.9373426112560593	
4	PHOSPHORUS	Seed	5650	6302	0.3241524123754052	
0	PHYTATE	Seed	10190	10900	-0.19448774169058122	
0	PHYTOFLUENE	Plant	--	--		Wealth of India.
2	PHYTOSTEROLS	Fruit	--	760	-0.23881522589243726	
2	PHYTOSTEROLS	Seed	760	760	-0.4421772689232783	USDA's Ag Handbook 8 and sequelae)
0	POLYACETYLENES	Root	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
0	POLYSACCHARIDES	Seed	--	130000	-0.6376825261439872	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
14	POTASSIUM	Fruit	12902	15665	-0.19919899891978007	
14	POTASSIUM	Seed	10810	15665	0.2726200242002285	
0	PROLINE	Seed	9170	10180	-0.2270794734050652	Revised USDA data received 1993.
0	PROTEIN	Fruit	190521	220000	1.4813201219223062	
0	PROTEIN	Seed	190521	220000	1.478470052739822	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	PUFA	Seed	32720	36320	-0.5293414540891105	Revised USDA data received 1993.
176	QUERCETIN	Fruit	--	--		
176	QUERCETIN	Seed	--	--		
176	QUERCETIN	Leaf	--	--		
176	QUERCETIN	Flower	--	--		
2	QUERCETIN-3'-GLUCOSIDE	Seed	--	--		Wealth of India.
0	QUERCETIN-3-O-GALACTOSIDE	Seed	--	--		Wealth of India.
0	QUERCETIN-3-GLUCURONIDE	Seed	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Seed	--	--		
2	QUERCETIN-3-O-BETA-D-GLUCURONIDE	Seed	--	--		
0	QUERCETIN-3-O-CAFFEYL-GLUCOSIDE	Seed	--	--		
0	RHAMNOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
15	RIBOFLAVIN	Fruit	3	4	-0.21615825716438572	
15	RIBOFLAVIN	Seed	3	4	0.18234587940570884	USDA's Ag Handbook 8 and sequelae)
5	SABINENE	Fruit	30	60	-0.5167574947017265	
5	SABINENE	Seed	4	60	-0.43864204594661615	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	SALICYLATES	Seed	28	30	-0.17921879008985586	
44	SCOPOLETIN	Root	--	--		
44	SCOPOLETIN	Plant	--	--		Wealth of India.
1	SERINE	Seed	9460	10500	-0.014241088185932402	Revised USDA data received 1993.
0	SFA	Seed	6200	6880	-0.5108368608268686	Revised USDA data received 1993.
1	SODIUM	Fruit	149	212	-0.16384706454945608	
1	SODIUM	Seed	149	212	-0.17599424618728202	
5	STARCH	Fruit	--	45000	-0.3878494415116057	
5	STARCH	Seed	45000	45000	-1.0737470069854615	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	STEARIC-ACID	Plant	1100	1221	-0.31662981705011717	
8	STEARIC-ACID	Seed	1000	1221	-0.5263361525324093	
12	STIGMASTEROL	Seed	--	310	-0.13634492946832524	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
0	SUGARS	Fruit	--	30000	-0.7603640515097223	
0	SUGARS	Seed	30000	30000	-0.6664407950618276	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
35	TANNIN	Plant	--	--		
23	TERPINEN-4-OL	Plant	120	985	0.14761831910973383	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	TERPINOLENE	Fruit	--	--		
9	TERPINOLENE	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
31	THIAMIN	Fruit	3	4	-0.17059389090821606	
31	THIAMIN	Seed	3	4	-0.6165338688916807	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Seed	7560	8390	0.056493706448137275	Revised USDA data received 1993.
17	THUJONE	Fruit	--	--		
17	THUJONE	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.
0	TRANS-1-CARVEOL	Seed	230	690		
0	TRANS-BETA-OCIMENE	Seed	--	--		
1	TRANS-CARVEOL	Seed	105	210	-1	
1	TRANS-CARVEOL	Flower Essent. Oil	--	--		
0	TRANS-CARYOPHYLLENE-OXIDE	Seed	5	20		
0	TRANS-DIHYDROCARVONE	Fruit	177	354	1	
0	TRANS-DIHYDROCARVONE	Seed	15	354	-1	
0	TRANS-LIMONENE-DIEPOXIDE	Seed	45	140		
0	TRANS-LIMONENE-EPOXIDE	Seed	200	600		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRICYCLEN	Fruit	--	--		
0	TRICYCLEN	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	TRIFOLIN	Seed	--	--		
29	TRYPTOPHAN	Seed	2440	2710	-0.20976729388732002	Revised USDA data received 1993.
8	TYROSINE	Seed	6420	7125	-0.14274154462014257	Revised USDA data received 1993.
22	UMBELLIFERONE	Root	--	--		
22	UMBELLIFERONE	Plant	--	--		Wealth of India.
3	VALINE	Seed	10370	11510	-0.061769047027664975	Revised USDA data received 1993.
0	WATER	Seed	91880	155000	-0.27862372656365736	
43	XANTHOTOXIN	Seed	--	--		
3	XYLOSE	Seed	--	--		Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
77	ZINC	Fruit	47	61	0.9235898750204936	
77	ZINC	Seed	47	61	0.592445203168114	