

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Theobroma cacao

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Seed	111300.0	215450.0	4.109143355899089	--
13	PALMITIC-ACID	Seed	89040.0	180500.0	3.024699622330506	--
0	KILOCALORIES	Fruit	531.0	5310.0	2.5052266068859748	J Cell Biochem VOL. 22=1995
21	THEOBROMINE	Seed	10000.0	35000.0	2.234049191141325	--
36	THEOPHYLLINE	Seed	0.0	4739.0	1.7330040388042545	--
0	FAT	Seed	371000.0	582300.0	1.6692910162467098	--
16	ACETIC-ACID	Seed	1520.0	7100.0	1.3864579714312821	--
62	CAFFEINE	Testa	130.0	723.0	1.364120501373702	--
62	CAFFEINE	Petiole	51.0	252.0	1.3383130789607725	--
0	ALKALOIDS	Seed	30000.0	40000.0	1.258570715061275	--
21	THEOBROMINE	Petiole	174.0	223.0	1.2182825031280367	--
36	THEOPHYLLINE	Testa	130.0	257.0	1.0617119603565899	--
21	THEOBROMINE	Testa	936.0	13000.0	1.0376929371594854	--
0	PHENOLICS	Seed		130000.0	1.0	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.
1	CHOLESTEROL	Oil	0.0	2800.0	1.0	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
30	POLYPHENOLS	Seed	78000.0	100000.0	1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ANTHOCYANINS	Seed		4000.0	1.0	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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	CATECHINS	Seed	30000.0	40000.0	1.0	--
18	OLEIC-ACID	Seed	122430.0	227100.0	0.8877951296368191	--
0	ASH	Fruit	38000.0	90475.0	0.8755538014219674	J Cell Biochem VOL. 22=1995
12	COPPER	Seed		24.0	0.8331720560940928	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	PHOSPHORUS	Fruit	500.0	5000.0	0.5418734067690828	J Cell Biochem VOL. 22=1995
0	TANNINS	Seed		75400.0	0.46682727652711586	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	OXALIC-ACID	Seed	1520.0	5000.0	0.3447985152060364	--
11	PANTOTHENIC-ACID	Seed	13.0	20.0	0.34109708334068634	--
39	NIACIN	Seed	17.0	50.0	0.21294979342958875	--
36	THEOPHYLLINE	Petiole	58.0	188.0	0.1867718419094071	--
15	RIBOFLAVIN	Seed	1.0	4.0	0.18234587940570884	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CARBOHYDRATES	Fruit	343000.0	816665.0	0.18065678536256444	J Cell Biochem VOL. 22=1995
0	FAT	Fruit	44000.0	104760.0	0.15889636363871001	J Cell Biochem VOL. 22=1995
0	ALKALOIDS	Leaf		10000.0	0.062309440096893175	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	PHOSPHORUS	Seed	3600.0	5571.0	0.05751506388486866	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	ALANINE	Seed		10400.0	0.051822040311835675	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	Seed	4500.0	7500.0	0.007355725552878182	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	NITROGEN	Seed		22800.0	-0.10548081217201899	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
31	THIAMIN	Fruit	1.8	4.2	-0.14499283258341247	J Cell Biochem VOL. 22=1995
14	SUCROSE	Seed	18000.0	37000.0	-0.17153022515909322	--
28	CALCIUM	Fruit	1300.0	3095.0	-0.1756747356051228	J Cell Biochem VOL. 22=1995
39	NIACIN	Fruit	19.0	45.0	-0.20985653043855088	J Cell Biochem VOL. 22=1995
1	CELLULOSE	Seed		90000.0	-0.23884916161035874	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	RIBOFLAVIN	Fruit	1.6	3.8	-0.25899158592219057	J Cell Biochem VOL. 22=1995
112	ASCORBIC-ACID	Fruit	30.0	70.0	-0.2801366159826427	J Cell Biochem VOL. 22=1995
0	CARBOHYDRATES	Seed	347000.0	445000.0	-0.3115865270747604	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
112	ASCORBIC-ACID	Seed		31.0	-0.3198458318942361	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SERINE	Seed		8800.0	-0.3400469562928065	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	SALICYLATES	Seed		0.0	-0.3401776874861938	--
15	FIBER	Seed	59000.0	89000.0	-0.36147740264683753	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Fruit	43000.0	102380.0	-0.3708195428012696	J Cell Biochem VOL. 22=1995
27	LINOLEIC-ACID	Plant	10700.0	12230.0	-0.39147043061187325	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SUGARS	Seed	20000.0	40000.0	-0.4051939134225381	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.
62	CAFFEINE	Seed	500.0	12900.0	-0.4658272368460845	--
8	TYROSINE	Seed		5700.0	-0.4728461096051886	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROTEIN	Seed	100000.0	180000.0	-0.4785438804290316	--
7	GLUCOSE	Seed	1000.0	3000.0	-0.5077819441641488	--
6	IRON	Seed	36.0	37.0	-0.5287176209786577	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Seed	800.0	1100.0	-0.5594989895943375	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	LINALOOL	Seed		5.0	-0.5895891599202989	--
8	FRUCTOSE	Seed		2000.0	-0.5987994606248948	--
3	ISOLEUCINE	Seed		5600.0	-0.624169861411402	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PHOSPHOLIPIDS	Seed	255.0	3319.0	-0.6578549027249627	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CHLORIDE	Seed		120.0	-0.6613721823540172	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
27	LINOLEIC-ACID	Seed	7420.0	29115.0	-0.6683734051471023	--
0	LINALOL	Seed		5.0	-0.6999883964509279	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	PHENYLALANINE	Seed		5600.0	-0.7093928366416996	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	WATER	Seed		36000.0	-0.7352763653505671	--
0	EO	Plant		10.0	-0.7393686069051985	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	VALINE	Seed		5700.0	-0.7773276247624422	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROLINE	Seed		7200.0	-0.8125279763894483	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	WATER	Fruit		580000.0	-0.8286411411444385	J Cell Biochem VOL. 22=1995
31	THIAMIN	Seed	1.0	3.0	-0.8551170555321612	--
5	STARCH	Seed	50000.0	90000.0	-0.891522967457591	--
2	LEUCINE	Plant		4500.0	-0.9511481830727361	--
0	IRON-OXIDE	Seed		40.0	-1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	PHOSPHATIDYL-CHOLINE	Seed	92.0	1328.0	-1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	NICOTINAMIDE	Seed		21.0	-1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	ARGININE	Seed		800.0	-1.009489821300081	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROTEIN	Fruit	12000.0	28570.0	-1.0848822697889617	J Cell Biochem VOL. 22=1995

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	PHYLLOQUINONE	Seed		0.02	-1.1351915229662497	--
43	PYRIDOXINE	Seed		1.0	-1.1536599429026273	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PENTOSANS	Seed		15000.0	-1.3271673489237144	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	GLUTAMIC-ACID	Seed		10200.0	-1.3295703563860357	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	HISTIDINE	Seed		800.0	-1.4153953454644674	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
12	GLYCINE	Seed		900.0	-1.4533713326030981	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	THREONINE	Seed		1400.0	-1.5071309379745554	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PHYTATE	Seed	10.0	530.0	-1.5112480559438948	Phytate in Food. Harland & Oberleas. Wld. Rev. Nutr. Diet, 52: 235-259.
4	LYSINE	Seed		800.0	-1.5304571248204542	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PHOSPHOLIPIDS	Plant	255.0	3319.0	-1.7600853913673296	--
0	OLEO-DIPALMATIN	Seed	76500.0	92800.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	DIACETYL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
75	KAEMPFEROL	Leaf				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
4	BIOTIN	Sprout Seedling				--
40	EPICATECHIN	Leaf				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	1-BUTYRIC-ACID	Plant				--
5	STARCH	Hb		60000.0		--
0	PHYTASE	Plant				--
1	N-BUTYLACETATE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
57	COUMARIN	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	HAEMIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ARABINOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	REDUCTASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	4-HYDROXY-3-METHOXY-BENZOIC-ACID	Seed				Jim Duke's personal files.
0	PROTEINASE	Seed				--
13	FORMIC-ACID	Seed				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
78	LUTEOLIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
1	CATALASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	FURFUROL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DEXTRINASE	Plant				--
4	ISOVITEXIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	BETA-THEOSTEROL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	XYLOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
38	(-)-EPICATECHIN	Leaf				--
1	STACHYOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	METHYL-HEPTENONE	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	HAEMATIN	Plant				--
2	APIGENIN-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
11	TYRAMINE	Plant				--
0	OXALATES	Seed	6000.0	10000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	RAFFINOSE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PALMITODIOLEN	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	LIPASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	FRUCTOSE	Plant				--
0	3-BETA-D-GALACTOSIDYL-CYANIDIN	Seed		1000.0		--
0	OCTOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	DECARBOXYLASE	Plant				--
4	ISOPROPYL-ACETATE	Plant				--
47	BETA-SITOSTEROL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	GALLOCATECHIN	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
9	SINAPIC-ACID	Plant				--
0	MESO-INOSITOL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GLYCOSIDASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	AMYLASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	TRIGONELLINE	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
25	OPCS	Seed		80000.0		--
0	RAFFINASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	PHENYLETHYLAMINE	Seed				--
6	TARTARIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PHLOBAPHENE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	3-BETA-D-GALACTOSIDYL-CYANIDIN	Leaf				--
0	O-HYDROXYPHENYLACETIC-ACID	Seed				Jim Duke's personal files.
0	D-GALACTOSE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
53	BETA-CAROTENE	Plant				--
0	PHOSPHATIDYL-INOSITOL	Plant				--
0	MELIBIOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	CHRYSOERIOL-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	GLYCOLIC-ACID	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	AMYL-BUTYRATE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	BETA-PHENYLETHYLAMINE	Seed	0.0	22.0		--
44	QUERCITRIN	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROPYL-ACETATE	Plant				--
0	P-HYDROXYPHENYLACETIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
61	FERULIC-ACID	Seed				--
2	CAMPESTEROL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	3-BETA-D-GALACTOSIDYL-CYANIDIN	Flower				--
2	NONANOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CYCLOARTANOL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	ISOBUTYL-ACETATE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ASPARIGINASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	VITEXIN	Plant				J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.
11	TYRAMINE	Seed				--
3	SALSOLINOL	Seed				--
0	PHOSPHATIDYL-ETHANOLAMINE	Plant				--
1	CHOLESTEROL	Plant				--
1	AMYL-ALCOHOL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	TRYPTAMINE	Seed				--
0	LINOLENIC-ACID	Plant				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	QUERCETIN-3-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.
3	MANNOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	SYRINGIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	HAEMATIN	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
6	PROPIONIC-ACID	Seed				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	P-HYDROXY-BENZOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LEUCOCYANIDINS	Seed	14000.0	35000.0		--
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Seed		1000.0		--
0	OXALURIC-ACID	Plant				Gruenwald, J. et al. 1998. PDR for Herbal Medicine. 1st ed. Medical Economics Co., Montvale, NJ. 1244 pp. (abbreviated as PHR or Physicians Herbal Reference in my mind)
0	CYANIDIN-GLYCOSIDE	Seed	4000.0	5000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	VERBASCOTETROSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROPYL-ACETATE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SACCHAROSE	Plant				--
77	CHLOROGENIC-ACID	Leaf				--
0	GLYCEROPHOSPHATASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	AMYL-ACETATE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
26	SEROTONIN	Seed				--
6	FURFURAL	Exocarp		90000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	QUERCETIN-3-O-GALACTOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	PHLOBAPHENE	Plant				--
0	MANNINOTRIOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	P-COUMARYL-QUINIC-ACID	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Leaf				--
0	METHYL-STEROLS	Seed				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
14	SUCROSE	Plant				--
11	NICOTINIC-ACID	Plant				--
0	CYANIDIN-3-GALACTOSIDE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ASCORBIC-ACID-OXIDASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	VERBASCOSE	Seed				--
4	RUTOSIDE	Leaf				--
1	GLYCERIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ALPHA-THEOSTEROL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	BEHENIC-ACID	Plant				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.
176	QUERCETIN	Leaf				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MANNAN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
25	P-COUMARIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ESCULETIN	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
8	LACTIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Flower				--
20	LECITHIN	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	STIGMASTEROL	Plant				--
0	CYANIDIN-3-GALACTOSIDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	INVERTASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	VANILLIC-ACID	Seed				--
87	RUTIN	Leaf				--
0	ALPHA-SITOSTEROL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	(-)-SALSOLINOL	Seed	0.007	40.0		--
2	PHENYLACETIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MALEIC-ACID	Plant				--
1	CELLULOSE	Plant				--
0	POLYPHENOL-OXIDASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	P-ANISIC-ACID	Seed				Jim Duke's personal files.
5	ERGOSTEROL	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	L-EPICATECHIN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
5	24-METHYLENE-CYCLOARTANOL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	HYDROLASE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	STEARODIOLEIN	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CYANIDIN-3-BETA-L-ARABINOSIDE	Seed				--
0	IDAEIN	Flower				Chemical Constituents of Oriental Herbs (3 diff. books)
1	THEOSTEROL	Testa				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.
34	PROANTHOCYANIDINS	Plant				Gruenwald, J. et al. 1998. PDR for Herbal Medicine. 1st ed. Medical Economics Co., Montvale, NJ. 1244 pp. (abbreviated as PHR or Physicians Herbal Reference in my mind)
36	THEOPHYLLINE	Plant				--
0	PURINE	Seed	30000.0	40000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PEROXIDASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LYSOPHOSPHATIDYLCHOLINE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CELLULASE	Plant				--
0	POLYGALACTURONATE	Plant				--
0	L-EPICATECHIN	Flower		27000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GALLOCATECHIN	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
77	CHLOROGENIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
8	STEARIC-ACID	Plant				--
0	CYANIDIN-3-BETA-L-ARABINOSIDE	Leaf				--
0	I-BUTYRIC-ACID	Plant				--
9	VALERIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	POLYHYDROXYPHENOLS	Seed	20000.0	60000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PURINE	Root		14000.0		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PENTOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
22	CATECHOL	Plant				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
8	GENTISIC-ACID	Leaf				--
0	PLANTEOSE	Plant				--
0	OLEOPALMITOSTEARIN	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
20	DOPAMINE	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
102	CAFFEIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	EPIGALLOCATECHIN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CATECHIN-TANNINS	Seed				--
1	N-NONACOSANE	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
7	CYANIDIN	Plant				--
0	ARACHIDIC-ACID	Plant				--
1	VALERIANIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
26	SEROTONIN	Plant				--
0	RHAMNOSE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
12	STIGMASTEROL	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
43	PROTocatechuic-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
24	PECTIN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LUTEOLIN-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GALACTURONIC-ACID	Plant				--