

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Theobroma cacao

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DECARBOXYLASE	Plant				--
0	WATER	Seed		36000.0	-0.7352763653505671	--
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.
9	SINAPIC-ACID	Plant				--
0	CATECHIN-TANNINS	Seed				--
0	O-HYDROXYPHENYLACETIC-ACID	Seed				Jim Duke's personal files.
15	TRIGONELLINE	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	AMYLASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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	RAFFINASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MELIBIOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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	3-BETA-D-GALACTOSIDYL-CYANIDIN	Leaf				--

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.
26	SEROTONIN	Plant				--
0	D-GALACTOSE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	P-HYDROXYPHENYLACETIC-ACID	Seed				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
53	BETA-CAROTENE	Plant				--
0	LINALOL	Seed		5.0	-0.6999883964509279	--
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.
0	PHOSPHATIDYL-INOSITOL	Plant				--
12	STIGMASTEROL	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	1-BUTYRIC-ACID	Plant				--
1	CHRYSOERIOL-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	NONANOIC-ACID	Seed				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.

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

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.
18	VITEXIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	ASPARIGINASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	SALSOLINOL	Seed				--
5	PHYLLOQUINONE	Seed		0.02	-1.1351915229662497	--
0	PHOSPHATIDYL-ETHANOLAMINE	Plant				--
0	CYCLOARTANOL	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	CHOLESTEROL	Plant				--
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.
1	AMYL-ALCOHOL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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.
0	QUERCETIN-3-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
38	(-)-EPICATECHIN	Leaf				--
0	PHLOBAPHENE	Plant				--
0	MANNINOTRIOSE	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
6	SYRINGIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Seed		1000.0		--
0	GLYCEROPHOSPHATASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	PROPIONIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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	VERBASCOTETROSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LEUCINE	Plant		4500.0	-0.9511481830727361	--
0	SACCHAROSE	Plant				--
77	CHLOROGENIC-ACID	Leaf				--
11	NICOTINIC-ACID	Plant				--
0	AMYL-ACETATE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	QUERCETIN-3-O-GALACTOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GALLOCATECHIN	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MANNAN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	SUCROSE	Plant				--
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Leaf				--
1	GLYCERIN	Plant				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.
25	OPCS	Seed		80000.0		--
1	VERBASCOSE	Seed				--
0	ASCORBIC-ACID-OXIDASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	LACTIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	RUTOSIDE	Leaf				--
4	PHENYLETHYLAMINE	Seed				--
0	PHLOBAPHENE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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.
25	P-COUMARIC-ACID	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
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.
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.
0	ALPHA-THEOSTEROL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	INVERTASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
176	QUERCETIN	Leaf				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. l'ORSTROM, Paris. 569 pp.
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				--
12	STIGMASTEROL	Plant				--
0	3-ALPHA-L-ARABINOSIDYL-CYANIDIN	Flower				--
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.
24	VANILLIC-ACID	Seed				--
112	ASCORBIC-ACID	Seed		31.0	-0.3198458318942361	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	L-EPICATECHIN	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
87	RUTIN	Leaf				--
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.
53	LINALOOL	Seed		5.0	-0.5895891599202989	--
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	P-ANISIC-ACID	Seed				Jim Duke's personal files.
1	CELLULOSE	Plant				--
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.
0	IDAEIN	Flower				Chemical Constituents of Oriental Herbs (3 diff. books)
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.
11	TYRAMINE	Seed				--
5	ERGOSTEROL	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. L'ORSTROM, Paris. 569 pp.
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.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	STEARODIOLEIN	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
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.
4	TRYPTAMINE	Seed				--
0	POLYPHENOL-OXIDASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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	L-EPICATECHIN	Flower		27000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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	HAEMATIN	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. l'ORSTROM, Paris. 569 pp.
0	CYANIDIN-3-BETA-L-ARABINOSIDE	Seed				--
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	CELLULASE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
36	THEOPHYLLINE	Plant				--
0	I-BUTYRIC-ACID	Plant				--
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	EO	Plant		10.0	-0.7393686069051985	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PENTOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GALLOCATECHIN	Plant				--
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.
8	STEARIC-ACID	Plant				--
26	SEROTONIN	Seed				--
8	GENTISIC-ACID	Leaf				--
0	POLYGALACTURONATE	Plant				--
6	FURFURAL	Exocarp		90000.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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.
8	FRUCTOSE	Seed		2000.0	-0.5987994606248948	--
0	CYANIDIN-3-BETA-L-ARABINOSIDE	Leaf				--
0	OLEOPALMITOSTEARIN	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
9	VALERIC-ACID	Seed				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.
22	CATECHOL	Plant				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
1	N-NONACOSANE	Seed				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
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.
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.
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.
20	DOPAMINE	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
24	PECTIN	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.

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.
2	LUTEOLIN-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
7	SALICYLATES	Seed		0.0	-0.3401776874861938	--
0	GALACTURONIC-ACID	Plant				--
0	PLANTEOSE	Plant				--
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.
75	KAEMPFEROL	Leaf				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
0	RHAMNOSE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
20	LECITHIN	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	CYANIDIN	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.
0	ARACHIDIC-ACID	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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HAEMIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
43	PROTOCATECHUIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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.
2	DIACETYL	Plant				--
40	EPICATECHIN	Leaf				Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
4	BIOTIN	Sprout Seedling				--
78	LUTEOLIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
5	STARCH	Hb		60000.0		--
0	FURFUROL	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PHYTASE	Plant				--
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.
0	REDUCTASE	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
0	HYDROLASE	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.
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	ARABINOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	ISOVITEXIN	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
13	FORMIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	CATALASE	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	4-HYDROXY-3-METHOXY-BENZOIC-ACID	Seed				Jim Duke's personal files.
0	HAEMATIN	Plant				--
0	PROTEINASE	Seed				--
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.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DEXTRINASE	Plant				--
0	PALMITODIOLEN	Seed				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
3	XYLOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	BETA-THEOSTEROL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LIPASE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	STACHYOSE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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)
8	FRUCTOSE	Plant				--
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.
1	RAFFINOSE	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
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.
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.
0	OCTOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
11	TYRAMINE	Plant				--
2	APIGENIN-7-O-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
4	ISOPROPYL-ACETATE	Plant				--
0	MESO-INOSITOL	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	3-BETA-D-GALACTOSIDYL-CYANIDIN	Seed		1000.0		--
0	GLYCOSIDASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
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.
0	BETA-PHENYLETHYLAMINE	Seed	0.0	22.0		--
36	THEOPHYLLINE	Seed	0.0	4739.0	1.7330040388042545	--
1	(-)-SALSOLINOL	Seed	0.007	40.0		--
31	THIAMIN	Seed	1.0	3.0	-0.8551170555321612	--



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
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.
15	RIBOFLAVIN	Fruit	1.6	3.8	-0.25899158592219057	J Cell Biochem VOL. 22=1995
31	THIAMIN	Fruit	1.8	4.2	-0.14499283258341247	J Cell Biochem VOL. 22=1995
0	PHYTATE	Seed	10.0	530.0	-1.5112480559438948	Phytate in Food. Harland & Oberleas. Wld. Rev. Nutr. Diet, 52: 235-259.
11	PANTOTHENIC-ACID	Seed	13.0	20.0	0.34109708334068634	--
39	NIACIN	Seed	17.0	50.0	0.21294979342958875	--
39	NIACIN	Fruit	19.0	45.0	-0.20985653043855088	J Cell Biochem VOL. 22=1995
112	ASCORBIC-ACID	Fruit	30.0	70.0	-0.2801366159826427	J Cell Biochem VOL. 22=1995
6	IRON	Seed	36.0	37.0	-0.5287176209786577	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
62	CAFFEINE	Petiole	51.0	252.0	1.3383130789607725	--
36	THEOPHYLLINE	Petiole	58.0	188.0	0.1867718419094071	--
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.
36	THEOPHYLLINE	Testa	130.0	257.0	1.0617119603565899	--
62	CAFFEINE	Testa	130.0	723.0	1.364120501373702	--
21	THEOBROMINE	Petiole	174.0	223.0	1.2182825031280367	--
0	PHOSPHOLIPIDS	Plant	255.0	3319.0	-1.7600853913673296	--
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.
4	PHOSPHORUS	Fruit	500.0	5000.0	0.5418734067690828	J Cell Biochem VOL. 22=1995
62	CAFFEINE	Seed	500.0	12900.0	-0.4658272368460845	--
0	KILOCALORIES	Fruit	531.0	5310.0	2.5052266068859748	J Cell Biochem VOL. 22=1995

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Seed	800.0	1100.0	-0.5594989895943375	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
21	THEOBROMINE	Testa	936.0	13000.0	1.0376929371594854	--
7	GLUCOSE	Seed	1000.0	3000.0	-0.5077819441641488	--
28	CALCIUM	Fruit	1300.0	3095.0	-0.1756747356051228	J Cell Biochem VOL. 22=1995
9	OXALIC-ACID	Seed	1520.0	5000.0	0.3447985152060364	--
16	ACETIC-ACID	Seed	1520.0	7100.0	1.3864579714312821	--
4	PHOSPHORUS	Seed	3600.0	5571.0	0.05751506388486866	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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.
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	OXALATES	Seed	6000.0	10000.0		--
27	LINOLEIC-ACID	Seed	7420.0	29115.0	-0.6683734051471023	--
21	THEOBROMINE	Seed	10000.0	35000.0	2.234049191141325	--
27	LINOLEIC-ACID	Plant	10700.0	12230.0	-0.39147043061187325	--
0	PROTEIN	Fruit	12000.0	28570.0	-1.0848822697889617	J Cell Biochem VOL. 22=1995
0	LEUCOCYANIDINS	Seed	14000.0	35000.0		--
14	SUCROSE	Seed	18000.0	37000.0	-0.17153022515909322	--
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.

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.
0	ALKALOIDS	Seed	30000.0	40000.0	1.258570715061275	--
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.
1	CATECHINS	Seed	30000.0	40000.0	1.0	--
0	ASH	Fruit	38000.0	90475.0	0.8755538014219674	J Cell Biochem VOL. 22=1995
15	FIBER	Fruit	43000.0	102380.0	-0.3708195428012696	J Cell Biochem VOL. 22=1995
0	FAT	Fruit	44000.0	104760.0	0.15889636363871001	J Cell Biochem VOL. 22=1995
5	STARCH	Seed	50000.0	90000.0	-0.891522967457591	--
15	FIBER	Seed	59000.0	89000.0	-0.36147740264683753	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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.
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.
13	PALMITIC-ACID	Seed	89040.0	180500.0	3.024699622330506	--
0	PROTEIN	Seed	100000.0	180000.0	-0.4785438804290316	--
8	STEARIC-ACID	Seed	111300.0	215450.0	4.109143355899089	--
18	OLEIC-ACID	Seed	122430.0	227100.0	0.8877951296368191	--
0	CARBOHYDRATES	Fruit	343000.0	816665.0	0.18065678536256444	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

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	FAT	Seed	371000.0	582300.0	1.6692910162467098	--