

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Abelmoschus esculentus*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	WATER	Fruit	880000.0	895000.0	0.5410083440065604	--
0	CARBOHYDRATES	Fruit	76300.0	760000.0	-0.12236009010138874	--
0	CARBOHYDRATE	Fruit	76300.0	760000.0	0.16728374427310336	USDA's Ag Handbook 8 and sequelae)
0	FAT	Seed	160000.0	220000.0	-0.23907267817038622	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Seed		210200.0	0.5955384973174893	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROTEIN	Seed	193800.0	200600.0	-0.2952962121414026	--
0	PENTOSANS	Seed		142700.0	1.33610550594868	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROTEIN	Fruit	2000.0	122000.0	0.16758750745380976	--
18	OLEIC-ACID	Seed	43920.0	100190.0	-0.15547958517496932	--
0	WATER	Seed		98900.0	-0.49390282770605765	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Fruit	9400.0	94000.0	-0.4498972510420309	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Seed	32575.0	89760.0	-0.1487610244098318	--
5	STARCH	Seed		89200.0	-0.8947625059380864	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ASH	Fruit	7000.0	70000.0	0.3453465628728832	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Seed	33920.0	66440.0	0.6712717296107207	--
0	ASH	Seed		47400.0	-0.014440680295344115	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	SUGAR	Seed		40300.0	-0.45814866271946514	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	POTASSIUM	Fruit	2200.0	32500.0	1.2902544800325078	--
8	GLUTAMIC-ACID	Fruit	2710.0	27100.0	1.0787835766302012	USDA's Ag Handbook 8 and sequelae)
0	FLAVONOIDS	Flower	4800.0	25000.0	-0.4636926248936486	Wealth of India.
24	PECTIN	Seed		21500.0	-0.39959623198666455	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PROLINE	Fruit	450.0	14930.0	2.9987180634006636	--
3	ASPARTIC-ACID	Fruit	1450.0	14820.0	0.6124010179892998	--
2	LEUCINE	Fruit	1050.0	10500.0	1.1477318684831908	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Seed	7200.0	10120.0	-0.34582040476667064	--
0	FAT	Fruit	1000.0	10000.0	-0.5648728941733404	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Fruit	910.0	9100.0	0.9588044065437552	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Fruit	480.0	8700.0	2.602797189816478	--
14	ARGININE	Fruit	840.0	8450.0	1.1043565641994444	--
14	POTASSIUM	Seed		8200.0	-0.3843179358862292	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	LYSINE	Fruit	810.0	8100.0	1.0322270292855846	USDA's Ag Handbook 8 and sequelae)
28	CALCIUM	Fruit	810.0	8100.0	0.9792809325023206	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Seed		7900.0	0.6729743152569793	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ALANINE	Fruit	730.0	7300.0	1.4119535146978326	USDA's Ag Handbook 8 and sequelae)
3	ISOLEUCINE	Fruit	550.0	6900.0	0.9797840477819103	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	PHENYLALANINE	Fruit	650.0	6500.0	1.100844146055086	USDA's Ag Handbook 8 and sequelae)
0	PHENYALANINE	Fruit	650.0	6500.0		--
4	THREONINE	Fruit	650.0	6500.0	1.4475659616717724	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Fruit	630.0	6300.0	0.9367351316792745	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Fruit	380.0	6000.0	1.792156703535766	--
3	MUCILAGE	Fruit		6000.0	-0.7970811413304553	Wealth of India.
1	GALACTOSE	Fruit		4800.0		Wealth of India.
1	SERINE	Fruit	440.0	4510.0	0.30609586354325435	--
12	GLYCINE	Fruit	440.0	4400.0	0.30769740137959467	USDA's Ag Handbook 8 and sequelae)
0	KILOCALORIES	Fruit	180.0	3800.0	0.21179742548842775	--
7	HISTIDINE	Fruit	310.0	3100.0	0.9727269415226906	USDA's Ag Handbook 8 and sequelae)
0	PHYTATE	Fruit	50.0	2900.0	-0.36066152801713924	--
28	CALCIUM	Seed	2100.0	2820.0	-0.24360731908228206	--
4	PUFA	Fruit	270.0	2700.0	-0.6462376868898586	USDA's Ag Handbook 8 and sequelae)
0	SFA	Fruit	260.0	2600.0	-0.32206148620495856	USDA's Ag Handbook 8 and sequelae)
2	PHYTOSTEROLS	Fruit	240.0	2400.0	1.8739668130211007	--
112	ASCORBIC-ACID	Fruit	130.0	2340.0	-0.13899484248695484	--
112	ASCORBIC-ACID	Plant	190.0	2340.0	-0.044349356222101836	--
15	METHIONINE	Fruit	210.0	2100.0	1.4056535776128818	USDA's Ag Handbook 8 and sequelae)
2	CYSTINE	Fruit	180.0	1900.0	0.9062078723935358	--
29	TRYPTOPHAN	Fruit	170.0	1710.0	1.2063373108893063	--
13	MUFA	Fruit	170.0	1700.0	-0.22925702420668695	USDA's Ag Handbook 8 and sequelae)
6	MYRISTIC-ACID	Seed	360.0	1540.0	-0.2758432857450111	--
14	SULFUR	Fruit	140.0	1400.0	-0.010141453327068681	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	SODIUM	Fruit	10.0	1000.0	-0.08912190953477618	--
2	PALMITOLEIC-ACID	Seed	730.0	880.0	-0.27734359101749956	Wealth of India.
0	RHAMNOSE	Fruit		600.0		Wealth of India.
14	GAMMA-TOCOPHEROL	Oil		430.0	0.23400336123986246	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	CHLORINE	Plant		410.0	-1.3865978906762788	Wealth of India.
0	GALACTURONIC-ACID	Fruit		360.0		Wealth of India.
32	ALPHA-TOCOPHEROL	Oil		310.0	-0.2423137964331492	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
32	ALPHA-TOCOPHEROL	Seed		304.0	0.23458917070322294	Wealth of India.
0	ARABINOSE	Fruit		180.0		Wealth of India.
47	BETA-SITOSTEROL	Fruit		150.0	-0.5971588891273873	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
6	IRON	Fruit	8.0	150.0	0.06752138925955396	--
9	OXALIC-ACID	Fruit	8.0	103.0	-0.30066937175115394	--
39	NIACIN	Fruit	10.0	100.0	0.525398020316708	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Fruit	10.0	100.0	0.2558494650725795	USDA's Ag Handbook 8 and sequelae)
54	GOSSYPOL	Seed	32.0	70.0	-0.5463535177026004	--
12	STIGMASTEROL	Root		60.0	-0.4716637501266192	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
77	ZINC	Fruit	6.0	60.0	0.8935039976101535	USDA's Ag Handbook 8 and sequelae)
2	CAMPESTEROL	Fruit		30.0	-0.4046460894399287	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
11	PANTOTHENIC-ACID	Fruit	2.0	24.0	0.3760561207523544	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	VIT-B-6	Fruit	2.0	22.0	2.3189606682135615	USDA's Ag Handbook 8 and sequelae)
31	THIAMIN	Fruit	0.8	20.0	1.8774907750760779	--
15	FOLACIN	Fruit	0.7	10.0	3.249984323819219	USDA's Ag Handbook 8 and sequelae)
12	COPPER	Fruit	1.0	9.0	-0.2972270275515491	USDA's Ag Handbook 8 and sequelae)
15	RIBOFLAVIN	Fruit	0.6	7.0	0.42634167420268376	--
31	THIAMIN	Seed		6.9	0.07535737236571377	Wealth of India.
7	SALICYLATES	Fruit		5.0	-0.3224047195908981	--
15	RIBOFLAVIN	Seed		1.4	-0.8141150164097362	Wealth of India.
5	PHYLLOQUINONE	Plant		0.4	-0.0356363719455349	Booth, S. L., Suttie, J. W. 1998. Dietary intake and adequacy of vitamin K. J. Nutrition, 128(5): 785-788.
0	CYANIDIN-3-SAMBUBIOSIDE	Flower				Wealth of India.
0	ALPHA-TERPENYL-ACETATE	Leaf				Wealth of India.
0	9-HEXADECENOIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GOSSYPETIN-8-RHAMNOGLUCOSIDE	Flower				Wealth of India.
0	QUERCETIN-4'-DIGLUCOSIDE	Flower				Wealth of India.
53	CITRAL	Leaf				Wealth of India.
24	PECTIN	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	12,13-EPOXYOLEIC-ACID	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GOSSYPETIN-3-GLUCOSIDE-8-RHAMNOGLUCOSIDE	Flower				Wealth of India.
0	QUERCETIN-3-DIGLUCOSIDE	Flower				Wealth of India.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	CITRAL	Fruit				Wealth of India.
2	GOSSYPETIN-8-GLUCOSIDE	Flower				Wealth of India.
0	3,5,3',4',5-PENTAHYDROXY-7-METHOXYFLAVONOL-5'-DIGLUCOSIDE	Flower				Wealth of India.
0	2-O-(D-GALACTOPYRANOSYLURONIC-ACID)-L-RHAMOSE	Fruit				Wealth of India.
0	QUERCETIN-3-TRIGLUCOSIDE	Flower				Wealth of India.
0	4-O-BETA-D-GALACTOPYRANOSYL-D-GALACTOSE	Fruit				Wealth of India.
0	QUERCETIN-5-RHAMNOGLUCOSIDE	Flower				Wealth of India.
0	P-TOLUALDEHYDE	Fruit				Wealth of India.
0	QUERCETIN-7-GLUCOSIDE	Flower				Wealth of India.
0	3-METHYL-1-BUTANOL	Fruit				Wealth of India.
24	ETHANOL	Fruit				Wealth of India.
0	CYANIDIN-4'-GLUCOSIDE	Flower				Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar.
2	ISOBUTYL-ALCOHOL	Leaf				Wealth of India.
0	QUERCETIN-5-GLUCOSIDE	Flower				Wealth of India.
176	QUERCETIN	Flower				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	GOSSYPETIN	Flower				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CYCLOHEXANOL	Fruit				Wealth of India.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CYANIDIN-3-GLUCOSIDE-4'-GLUCOSIDE	Flower				Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar.
2	ISOBUTYL-ALCOHOL	Fruit				Wealth of India.
1	QUERCETIN-4'-GLUCOSIDE	Flower				Wealth of India.