

**Dr. Duke's Phytochemical and Ethnobotanical Databases**

**Chemicals found in Momordica charantia**

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	(-)-MENTHOL	Seed Essent. Oil				Jim Duke's personal files.
15	5-HYDROXYTRYPTAMINE	Fruit				--
3	ALANINE	Fruit				Jim Duke's personal files.
3	ALANINE	Seed		157.7	-2.125486049794296	Jim Duke's personal files.
3	ALPHA-ELEOSTEARIC-ACID	Fruit				Jim Duke's personal files.
5	ALPHA-MOMORCHARIN	Seed		1000.0		Jim Duke's personal files.
2	ALPHA-SPINASTEROL	Fruit				Jim Duke's personal files.
14	ARGININE	Seed		323.0	-1.0296877540066676	Jim Duke's personal files.
112	ASCORBIC-ACID	Leaf	1700.0	12412.0	0.7077553417408794	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
112	ASCORBIC-ACID	Fruit	570.0	36447.0	1.9816758485339367	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	ASPARAGINE	Seed				Jim Duke's personal files.
3	ASPARTIC-ACID	Seed		90.0	-1.9973581997884697	Jim Duke's personal files.
2	BETA-ALANINE	Fruit				Jim Duke's personal files.
9	BETA-AMYRIN	Seed Oil				Jim Duke's personal files.
53	BETA-CAROTENE	Leaf	51.0	330.0	0.299193200126749	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Pericarp				Jim Duke's personal files.
53	BETA-CAROTENE	Fruit		18.0	-0.11600695344068511	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	BETA-MOMORCHARIN	Seed		800.0		Jim Duke's personal files.
47	BETA-SITOSTEROL	Tissue Culture				Jim Duke's personal files.
47	BETA-SITOSTEROL	Fruit				--
6	BETA-SITOSTEROL-D-GLUCOSIDE	Fruit				--
28	CALCIUM	Leaf	2640.0	18701.0	0.018026155323724542	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Fruit	130.0	4333.0	0.11000660647619885	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CAPRIC-ACID	Seed Oil				Jim Duke's personal files.
4	CHARANTIN	Fruit	350.0	1500.0		Jim Duke's personal files.
4	CHARANTIN	Seed				Jim Duke's personal files.
1	CHOLESTEROL	Fruit				=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
5	CITRULLINE	Fruit		41.2	-0.6424999385015843	Jim Duke's personal files.
12	COPPER	Fruit		30.0	1.3371913013407486	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
2	CRYPTOXANTHIN	Pericarp				Jim Duke's personal files.
2	CRYPTOXANTHIN	Fruit				--
8	CUCURBITACIN-B	Seed				Jim Duke's personal files.
2	CUCURBITACIN-K	Seed				Jim Duke's personal files.
7	CYCLOARTENOL	Seed Oil				Jim Duke's personal files.
1	DELTA-CAROTENE	Pericarp				Jim Duke's personal files.
7	DIOSGENIN	Tissue Culture		13.66	-0.7079113310670192	Jim Duke's personal files.
7	DIOSGENIN	Fruit		1.69	-0.9999999999999999	Jim Duke's personal files.
1	ETHYLENE	Fruit				Jim Duke's personal files.
15	FIBER	Leaf	5000.0	104000.0	-0.7114852663831885	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Fruit	10000.0	257800.0	1.0957982871246397	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	FLUORIDE	Fruit	0.2	0.5	-1.000378143329832	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
22	GABA	Fruit				--
22	GAMMA-AMINOBUTYRIC-ACID	Fruit				Jim Duke's personal files.
22	GAMMA-AMINOBUTYRIC-ACID	Seed				Jim Duke's personal files.
2	GAMMA-CAROTENE	Pericarp				Jim Duke's personal files.
8	GENTISIC-ACID	Leaf				Jim Duke's personal files.
8	GLUTAMIC-ACID	Seed		212.0	-1.7509729163492929	Jim Duke's personal files.
8	GLUTAMIC-ACID	Fruit				Jim Duke's personal files.
12	GLYCINE	Seed		38.2	-1.5779725996145	Jim Duke's personal files.
7	HISTIDINE	Seed		43.6	-1.6164825787870483	Jim Duke's personal files.
19	INULIN	Fruit		10000.0		Jim Duke's personal files.
19	INULIN	Tissue Culture		19000.0		Jim Duke's personal files.
12	IODINE	Fruit		0.41	-0.28853494377145755	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
6	IRON	Leaf	50.0	357.0	-0.015676844638709195	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
6	IRON	Fruit	2.0	560.0	1.6938808861430978	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	ISOLEUCINE	Seed		38.4	-1.3338385078210488	Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	LANOSTEROL	Fruit				=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
7	LAURIC-ACID	Seed Oil				Jim Duke's personal files.
7	LAURIC-ACID	Fruit				Jim Duke's personal files.
2	LEUCINE	Seed		41.6	-1.6310343336304725	Jim Duke's personal files.
27	LINOLEIC-ACID	Cotyledon	72200.0	103900.0	-1.5560256104086498	Jim Duke's personal files.
27	LINOLEIC-ACID	Fruit				Jim Duke's personal files.
27	LINOLEIC-ACID	Seed Oil				Jim Duke's personal files.
27	LINOLEIC-ACID	Seed	770.0	38192.0	-0.5906007679972597	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	LUTEIN	Pericarp				Jim Duke's personal files.
15	LUTEIN	Fruit				--
16	LYCOPENE	Fruit		231.0	-0.286475816300021	Jim Duke's personal files.
16	LYCOPENE	Pericarp				Jim Duke's personal files.
16	LYCOPENE	Seed				Jim Duke's personal files.
4	LYSINE	Seed		149.0	-1.618638546276612	Jim Duke's personal files.
65	MAGNESIUM	Fruit	195.0	3800.0	0.7734288840240365	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp

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14	MANGANESE	Fruit		10.0	-0.33759879445260416	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
6	MYRISTIC-ACID	Seed Oil				Jim Duke's personal files.
6	MYRISTIC-ACID	Fruit				Jim Duke's personal files.
11	NEROLIDOL	Seed Essent. Oil				Jim Duke's personal files.
39	NIACIN	Leaf	15.0	103.0	0.06689038440862302	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Fruit	3.0	50.0	-0.14301520764261824	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	NICKEL	Fruit		10.0	2.26174523862035	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
18	OLEIC-ACID	Seed	1580.0	77376.0	-0.34302406034411387	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
18	OLEIC-ACID	Cotyledon		155800.0	-1.4748334919931014	Jim Duke's personal files.
18	OLEIC-ACID	Fruit				Jim Duke's personal files.
5	ORNITHINE	Seed		63.2		Jim Duke's personal files.
9	OXALIC-ACID	Fruit		5.0	-0.30607332554046784	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. The Medicinal and Poisonous Plants of Southern and Eastern Africa. E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Seed Essent. Oil				Jim Duke's personal files.
13	PALMITIC-ACID	Fruit				Jim Duke's personal files.
13	PALMITIC-ACID	Cotyledon	27100.0	519500.0	0.5807660362186364	Jim Duke's personal files.
13	PALMITIC-ACID	Seed Oil				Jim Duke's personal files.
2	PALMITOLEIC-ACID	Fruit				Jim Duke's personal files.
24	PECTIN	Fruit				--
7	PHENYLALANINE	Fruit				Jim Duke's personal files.
4	PHOSPHORUS	Leaf	540.0	33467.0	5.2428092659958	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Fruit	320.0	8333.0	1.5542381214811356	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	PIPECOLIC-ACID	Fruit				--
14	POTASSIUM	Leaf	5100.0	33117.0	0.12244608377334268	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
14	POTASSIUM	Fruit	2700.0	45000.0	2.3961747940748954	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Leaf	4.6	31.0	-0.0325494690927309	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Fruit	0.4	9.0	0.8546749617807301	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
57	ROSMARINIC-ACID	Shoot				Jim Duke's personal files.
1	RUBIXANTHIN	Fruit				--
1	RUBIXANTHIN	Pericarp				Jim Duke's personal files.
1	SERINE	Seed		39.9	-2.018924594647529	Jim Duke's personal files.
1	SODIUM	Leaf	190.0	1234.0	-0.4281180118553505	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SODIUM	Fruit	20.0	333.0	-0.15237277044187197	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
10	SQUALENE	Seed Essent. Oil				Jim Duke's personal files.
8	STEARIC-ACID	Cotyledon	121200.0	241800.0	1.7319277911844766	Jim Duke's personal files.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Fruit				Jim Duke's personal files.
8	STEARIC-ACID	Seed Oil				Jim Duke's personal files.
8	STEARIC-ACID	Seed	29800.0	147800.0	2.641368075087524	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
12	STIGMASTEROL	Fruit				--
12	STIGMASTEROL	Tissue Culture				Jim Duke's personal files.
2	TARAXEROL	Seed Oil				Jim Duke's personal files.
31	THIAMIN	Leaf	1.3	8.0	-0.06349209547044472	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Fruit	0.2	12.0	0.8534484420839309	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	THREONINE	Seed		17.8	-1.8163214935569654	Jim Duke's personal files.
8	TYROSINE	Seed		517.0	-1.673500116845535	Jim Duke's personal files.
20	VERBASCOSIDE	Shoot				Jim Duke's personal files.
2	ZEATIN	Seed				Jim Duke's personal files.
5	ZEAXANTHIN	Pericarp				Jim Duke's personal files.
5	ZEAXANTHIN	Fruit				--