

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Medicago sativa*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	(-)-5'-METHOXSATIVAN	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	(S)-N-(3-HYDROXYPROPYL)-AZETIDINE-CARBOXYLIC-ACID	Sprout Seedling				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	10-METHOXY-MEDICARPIN	Plant				--
0	11,12-DIMETHOXY-7-HYDROXYCOUMESTIN	Plant				--
0	2-(4-HYDROXY-2-METHOXY-PHENYL)-6-METHOXY-BENZOFURAN-3-CARBOXYLIC-ACID	Root				--
0	2-CARBOXYARABINITOL	Leaf		19.0	-0.830478531624815	--
0	2-METHYL-PROPANOL	Essential Oil				--
0	3',4',5'-TRIHYDROXY-7-METHOXY-FLAVONE	Shoot				--
0	3',4',7'-TRIHYDROXYFLAVONE	Shoot				--
0	3'-METHOXYCOUMESTROL	Shoot				--
0	3'-METHOXYCOUMESTROL	Plant				--
0	3-BETA-GALACTOSIDASE	Tissue Culture				--
0	3-METHYL-BUTANOL	Essential Oil				--
0	4',7-DIHYDROXYFLAVONE	Plant				--
0	4',7-DIHYDROXYFLAVONE	Shoot				--
0	4',7-DIHYDROXYFLAVONE	Tissue Culture				--
0	4',7-DIHYDROXYFLAVONE	Leaf				--
0	4',7-DIHYDROXYFLAVONE	Root				--
0	4'-METHOXYCOUMESTROL	Shoot				--
2	4'-O-METHYLCOUMESTROL	Plant				--
0	4-O-METHYLCOUMESTROL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-AMINO-BUTYRIC-ACID	Root				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	7,5'-DIHYDROXY-2',3',4'-TRIMETHOXYISOFLAVAN	Plant				--
0	7-HYDROXY-2',3',4'-TRIMETHOXYISOFLAVAN	Plant				--
0	8-METHOXYCOUMESTROL	Leaf				--
0	9-O-METHYLCOUMESTROL	Wood				--
3	ACETONE	Essential Oil				--
11	ADENINE	Plant				--
28	ADENOSINE	Plant				--
32	AESCULETIN	Plant				--
32	AESCULETIN	Fruit		140.0		--
0	ALFALFONE	Plant				--
0	ALFALONE	Tissue Culture				--
2	ALPHA-CRYPTOXANTHIN	Flower				--
2	ALPHA-SPINASTEROL	Plant				--
2	ALPHA-SPINASTEROL	Fruit		37.0		--
32	ALPHA-TOCOPHEROL	Plant	26.0	257.0	1.0	--
32	ALPHA-TOCOPHEROL	Leaf				--
5	ALUMINUM	Plant	25.0	135.0	-0.4885767299654601	--
1	AMYLASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ANTHOCYANINS	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
101	APIGENIN	Shoot		70.0	0.9999999999999999	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	APIGENIN-7-O-BETA-D-GLUCURONIDE	Plant				--
0	APS-SULFOTRANSFERASE	Leaf				--
0	ARABINOSE	Plant				--
14	ARGININE	Plant				--
112	ASCORBIC-ACID	Plant	276.0	1470.0	-0.24858981250809772	--
112	ASCORBIC-ACID	Leaf				--
0	ASH	Seed	44000.0	49830.0	0.05864796051782538	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	ASH	Plant	18800.0	100000.0	-0.3796129196407384	--
2	ASPARAGINE	Seed				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	AUROXANTHIN	Flower				--
0	AUROXANTHIN	Leaf				--
0	AZUKISAPONIN-II	Shoot		5.6		--
0	AZUKISAPONIN-V	Shoot		20.0		--
3	BAYOGENIN	Leaf				--
0	BENZOYL-(S),(-)-MALIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	BENZOYLMESOTARTARIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
9	BETA-AMYRIN	Seed Essent. Oil				--
9	BETA-AMYRIN	Fruit		15.0		--
9	BETA-AMYRIN	Plant				--
53	BETA-CAROTENE	Flower				--
53	BETA-CAROTENE	Leaf	0.06	394.0	0.5779097767598688	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	BETA-CAROTENE	Plant	28.0	149.0	0.07978827538823967	--
0	BETA-CAROTENE-5,6-EPOXIDE	Leaf				--
2	BETA-CRYPTOXANTHIN	Leaf				--
13	BETA-IONONE	Leaf				--
0	BETA-MANNANASE	Seed				--
47	BETA-SITOSTEROL	Plant				--
47	BETA-SITOSTEROL	Seed Oil				--
47	BETA-SITOSTEROL	Seed				--
47	BETA-SITOSTEROL	Fruit		5.0	-0.7876716260327145	--
0	BETA-SPINASTEROL	Plant				--
0	BETA-SPINASTEROL	Fruit		19.0		--
14	BETAINE	Plant				--
32	BIOCHANIN-A	Plant				--
32	BIOCHANIN-A	Leaf				--
32	BIOCHANIN-A	Shoot				--
4	BIOTIN	Plant		0.18	-1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	BORON	Stem		14.0	-1.2402659293167797	--
4	BORON	Plant	17.0	45.0	-0.3577281795551712	--
4	BORON	Leaf		25.0	-0.9876747917039735	--
0	BUTANONE	Essential Oil				--
102	CAFFEIC-ACID	Tissue Culture				--
28	CALCIUM	Plant	1690.0	8990.0	-0.49198149686738296	--
2	CAMPESTEROL	Plant				--
2	CANALINE	Seed				--
0	CANANAVANINE	Seed		6000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	CANAVANINE	Seed				--
1	CAPROIC-ACID	Seed				--
0	CARBOHYDRATES	Seed	401000.0	454135.0	-0.27528219157366973	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	CARBOHYDRATES	Plant	123704.0	658000.0	-0.09269869232340142	--
0	CAULOSAPONIN-B	Root		10.0		--
0	CEREBROSIDES	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
21	CHLOROPHYLL	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CHLOROPHYLLIDE-A	Plant				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.
20	CHOLINE	Plant				--
20	CHOLINE	Shoot		1710.0	1.5234568202999696	--
20	CHOLINE	Tissue Culture				--
24	CHROMIUM	Plant	0.2	0.9	-0.7791757860142275	--
7	CHRYSOERIOL	Shoot		28.0	-0.21517629017726148	--
0	CHRYSOERIOL-7-DIGLUCURONIDE	Plant				--
0	CHRYSOERIOL-7-GLUCURONIDE	Plant				--
0	CHRYSOERIOL-7-TRIGLUCURONIDE	Plant				--
18	CINNAMIC-ACID	Tissue Culture				--
23	CITRIC-ACID	Plant				--
5	CITRULLINE	Shoot				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	COAGULASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	COBALT	Plant	2.0	11.5	-0.10173080974718347	--
13	COUMESTROL	Plant	10.0	184.0		--
13	COUMESTROL	Shoot	5.0	190.0	-0.22331891484663308	--
13	COUMESTROL	Sprout Seedling	5.0	37.0		--
13	COUMESTROL	Root				--
13	COUMESTROL	Leaf				--
0	COUMESTROL-O-GLUCOSIDE	Leaf				--
2	CRYPTOXANTHIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	CYCLOARTENOL	Plant				--
2	CYSTINE	Plant				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
0	CYTIDINE	Plant				--
0	D-GLYCERO-D-MANNO-OCTULOSE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
32	DAIDZEIN	Shoot				--
32	DAIDZEIN	Plant				--
4	DAIDZEN	Plant				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	DAPHNORETIN	Plant				--
0	DEHYDRO-SOYASAPONIN-I	Shoot		20.0		--
7	DIOSGENIN	Seed		1000.0	-0.7071067811865476	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EREPSIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
30	ESCULETIN	Plant				Jim Duke's personal files.
30	ESCULETIN	Fruit		140.0		--
0	FAT	Seed	101000.0	123000.0	-0.7500063749919659	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Plant	8084.0	43000.0	-0.12766435472464482	--
0	FERREDOXINS	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
61	FERULIC-ACID	Leaf				--
61	FERULIC-ACID	Tissue Culture				--
15	FIBER	Seed	81000.0	91732.0	-0.33990506404368126	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Plant	31000.0	423000.0	1.4801044426289807	--
0	FIBER(CRUDE)	Plant		210000.0	1.9601160241860098	--
0	FIBER(DIETARY)	Plant		423000.0	0.6378145433565986	--
0	FLAVOXANTHIN	Leaf				--
15	FOLACIN	Plant				--
23	FOLIC-ACID	Plant				--
16	FORMONONETIN	Shoot				--
16	FORMONONETIN	Root				--
16	FORMONONETIN	Plant				--
16	FORMONONETIN	Leaf				--
0	FORMONONETIN-7-O-(6"-O-MALONYL-GLUCOSIDE)	Root				--
0	FORMONONETIN-7-O-GLUCOSIDE	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Plant				--
7	FUMARIC-ACID	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	GALACTOMANNAN	Seed				--
1	GALACTOSE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
81	GENISTEIN	Shoot				--
81	GENISTEIN	Plant				--
81	GENISTEIN	Leaf				--
35	GERANIOL	Leaf				--
7	GLUCOSE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
4	GLUCURONIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	GLYCINE-BETAINE	Leaf				--
1	GUANINE	Plant				--
0	GUANOSINE	Plant				--
9	HEDERAGENIN	Plant				--
9	HEDERAGENIN	Leaf				--
9	HEDERAGENIN	Shoot				--
0	HENTRIACONTANE	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
7	HISTIDINE	Plant				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
0	HYDROGEN-CYANIDE	Plant				--
0	HYDROXY-PROLINE-BETAINE	Leaf				--
0	HYDROXYFORMONONETIN	Plant				--
30	HYPEROSIDE	Seed				--
0	HYPOXANTHINE	Plant				--
8	INOSINE	Plant				--
8	INOSITOL	Plant				--
0	INVERTASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	IRON	Plant	4.9	26.0	-0.7076842877524394	--
0	ISO-PALMITIC-ACID	Seed				--
0	ISO-PENTADECANOIC-ACID	Seed				--
0	ISOCYTOSINE	Plant				--
3	ISOLEUCINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
75	KAEMPFEROL	Flower				--
0	KAEMPFEROL-7-O-ALPHA-L-RHAMNOSIDE	Leaf				--
0	KAEMPFEROL-7-O-BETA-D-GLUCURONIDE	Leaf				--
1	L-ARGININE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	L-CANAVANINE	Seed	8.0	15000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	L-CANAVANINE	Leaf	900.0	1200.0		--
0	L-CANAVANINE	Stem	600.0	900.0		--
0	L-CANAVANINE	Sprout Seedling	600.0	900.0		--
1	L-HOMOSTACHYDRINE	Seed				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	L-STACHYDRINE	Plant				--
0	L-STACHYDRINE	Hay		1400.0		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LARICYTRIN	Flower				--
7	LAURIC-ACID	Seed				--
7	LAURIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	LEUCINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	LICODIONE	Tissue Culture				--
60	LIMONENE	Essential Oil				--
27	LINOLEIC-ACID	Seed Oil				--
0	LINOLENIC-ACID	Seed Oil				--
0	LIQUIRITGENIN	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	LUCERNIC-ACID	Leaf				--
0	LUCERNOL	Shoot				--
0	LUCERNOL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	LUTEIN	Flower				--
15	LUTEIN	Leaf				--
15	LUTEIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	LUTEIN-5,6-EPOXIDE	Flower				--
0	LUTEIN-5,6-EPOXIDE	Leaf				--
0	LUTEOXANTHIN	Leaf				--
4	LYSINE	Plant				--
65	MAGNESIUM	Plant	432.0	2300.0	-0.548317490259909	--
0	MALEIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
15	MALIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	MALONIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
14	MANGANESE	Plant	0.5	2.5	-0.6769869715512199	--
0	MANNO-HEPTULOSE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
7	MEDICAGENIC-ACID	Plant	320.0	600.0		--
7	MEDICAGENIC-ACID	Pt				--
7	MEDICAGENIC-ACID	Root				--
7	MEDICAGENIC-ACID	Leaf				--
0	MEDICAGENIC-ACID-3-BETA-O-BETA-MALTOSE	Root				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MEDICAGENIC-ACID-3-O-BETA-D-GLUCOPYRANOSIDE	Root	1200.0	87878.8		--
0	MEDICAGENIC-ACID-3-O-BETA-D-GLUCOSIDE	Root				--
0	MEDICAGENIC-ACID-3-O-TRIGLUCOSIDE	Root				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	MEDICAGO-GUCURONOXYLAN	Stem				--
3	MEDICAGOL	Shoot		6.0	1.0000000000000002	--
3	MEDICAGOL	Leaf				--
3	MEDICAGOL	Plant				--
0	MEDICANINE	Sprout Seedling				--
13	MEDICARPIN	Leaf				--
13	MEDICARPIN	Tissue Culture				--
13	MEDICARPIN	Root				--
13	MEDICARPIN	Sprout Seedling				--
0	MEDICARPIN-3-O-GLYCOSIDE	Root				--
0	MEDICARPIN-BETA-D-GLUCOSIDE	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	MEDICOSIDE	Plant				--
0	MEDICOSIDE-A	Root		48.0		--
0	MEDICOSIDE-C	Root	20.0	100.0		--
0	MEDICOSIDE-D	Root		6060.6		--
0	MEDICOSIDE-G	Root	0.0	132.0		--
0	MEDICOSIDE-H	Root		51.0		--
0	MEDICOSIDE-I	Root		231.2		--
0	MEDICOSIDE-J	Root	103.6	104.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	MEDICOSIDE-L	Root		120.0		--
15	METHIONINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	MOLYBDENUM	Stem		0.015	-0.7971221018749982	--
2	MOLYBDENUM	Leaf		0.028	-1.0427367414444646	--
0	MUTATOCHROME	Leaf				--
34	MYRICETIN	Flower				--
6	MYRISTIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	MYRISTONE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	MYRSELINOL	Plant				--
0	MYRSELLINOL	Fruit		60.0		--
0	N-6-METHYLAGMATINE	Seed				--
0	NEOCHROME	Flower				--
0	NEOCHROME	Leaf				--
2	NEOXANTHIN	Leaf				--
2	NEOXANTHIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
39	NIACIN	Plant	18.0	97.0	0.2842641866420701	--
1	NICOTIANAMINE	Plant				--
1	NICOTIANAMINE	Shoot				--
2	NONACOSANE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

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0	NOR-SPERMIDINE	Shoot		15.0		--
0	NOR-SPERMINE	Shoot		98.0		--
6	OCTACOSANOL	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
18	OLEIC-ACID	Seed				--
18	OLEIC-ACID	Seed Oil				--
2	ONONIN	Leaf				--
0	OXALIC	Plant				--
9	OXALIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
25	P-COUMARIC-ACID	Leaf				--
25	P-COUMARIC-ACID	Tissue Culture				--
13	PALMITIC-ACID	Seed				--
13	PALMITIC-ACID	Seed Oil				--
13	PALMITIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PANTOTHENIC	Plant				--
11	PANTOTHENIC-ACID	Plant	2.0	18.0	-0.6897934963080896	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
24	PECTIN	Plant				--
0	PECTIN-METHYL-ESTERASE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	PECTINASE	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	PENTANAL	Essential Oil				--
0	PEROXIDASE	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	PHAEOPHORBIDE-A	Plant				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.
7	PHENYLALANINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
4	PHOSPHORUS	Plant	282.0	1500.0	-1.003677013071448	--
5	PHYLLOQUINONE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	PHYTOFLUENE	Leaf				--
0	PHYTOHEMAGGLUTININ	Seed				--
5	PINITOL	Shoot				--
0	PIPECOLATE-BETAINE	Leaf				--
0	PLASTOCYANINS	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	POPULNIN	Leaf				--
14	POTASSIUM	Plant	2256.0	12000.0	-0.6832502238410928	--
0	PROLINE-BETAINE	Leaf				--
0	PROPANAL	Plant				--
0	PROTEIN	Seed	332000.0	385000.0	1.3450372845692184	--
0	PROTEIN	Leaf	60000.0	347000.0	1.3483012225896183	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROTEIN	Plant	37412.0	199000.0	0.2092574695730852	--
0	PROTEIN	Shoot				--
0	PURINES	Seed				--
43	PYRIDOXINE	Plant				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PYRO-GLU-TYR-PRO	Leaf				--
176	QUERCETIN	Flower				--
1	QUINIC-ACID	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	RHAMNOSE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
15	RIBOFLAVIN	Plant	2.7	14.2	0.19430085817779952	--
0	RIBOSE	Plant				--
7	SALICYLATES	Shoot	7.0	35.0		--
34	SALICYLIC-ACID	Shoot				--
0	SAPONIN	Plant	5000.0	20000.0	-0.456646703080591	--
5	SAPONINS	Plant	5000.0	20000.0		--
5	SAPONINS	Sprout Seedling	1100.0	80000.0		--
5	SAPONINS	Seed		3000.0	-0.46316315050966533	--
2	SATIVAN	Sprout Seedling				--
2	SATIVAN	Leaf				--
0	SATIVANONE	Leaf				--
0	SATIVOL	Shoot		68.0		--
0	SATIVOL	Leaf				--
0	SATIVOL	Plant				--
44	SCOPOLETIN	Fruit		120.0	1.4000118189449853	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
44	SCOPOLETIN	Plant				--
60	SELENIUM	Stem		0.015	-0.42886426089167784	--
60	SELENIUM	Plant		0.0	-0.42752189453278766	--
60	SELENIUM	Leaf		0.026	-0.38054912270300056	--
14	SHIKIMIC-ACID	Plant				--
4	SILICON	Plant				--
1	SODIUM	Plant	32.0	170.0	-0.2946674910029055	--
0	SOYASAPOGENOL-A	Plant				--
0	SOYASAPOGENOL-A	Leaf				--
0	SOYASAPOGENOL-B	Shoot				--
0	SOYASAPOGENOL-B	Plant				--
0	SOYASAPOGENOL-B	Petiole				--
0	SOYASAPOGENOL-B	Root				--
0	SOYASAPOGENOL-B	Leaf				--
0	SOYASAPOGENOL-C	Root				--
0	SOYASAPOGENOL-C	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	SOYASAPOGENOL-C	Shoot				--
0	SOYASAPOGENOL-C	Leaf				--
0	SOYASAPOGENOL-D	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	SOYASAPOGENOL-D	Shoot				--
0	SOYASAPOGENOL-D	Root				--
0	SOYASAPOGENOL-E	Shoot				--
0	SOYASAPOGENOL-E	Plant				--
0	SOYASAPOGENOL-E	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SOYASAPOGENOL-E	Root				--
0	SOYASAPOGENOL-F	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	SOYASAPOGENOL-F	Shoot				--
0	SOYASAPOGENOL-F	Root				--
0	SOYASAPOGENOLS	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	SOYASAPONIN-I	Shoot		192.2	-1.0000000000000002	--
0	SOYASAPONIN-I	Seed		700.0	-1.0	--
0	SOYASAPONIN-VI	Seed		1000.0		--
0	SPHINGOSINES	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
6	STACHYDRINE	Seed				--
1	STACHYOSE	Seed				--
5	STARCH	Plant	11280.0	60000.0	-0.988104929322464	--
8	STEARIC-ACID	Seed Oil				--
12	STIGMASTEROL	Fruit		40.0	-0.6177415341015651	--
12	STIGMASTEROL	Plant				--
7	SUCCINIC-ACID	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	SUCROSE	Plant				--
0	SUGARS	Plant	16920.0	90000.0	-0.2500180771944431	--
35	TANNIN	Hay	27000.0	28000.0		--
31	THIAMIN	Plant	1.3	7.5	-0.008499804648401508	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	THIAMINE	Plant	0.4	1.9	-0.4676150049335628	--
4	THREONINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
4	TIN	Plant				--
0	TRANS-CINNAMIC-ACID	Tissue Culture				--
0	TRANS-COUMARIC-ACID	Tissue Culture				--
1	TRIACONTAN-1-OL	Shoot				--
0	TRIACONTANE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	TRIACONTANOL	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	TRICIN	Fruit Juice		2200.0		--
9	TRICIN	Plant				--
9	TRICIN	Shoot		24.4		--
0	TRICIN-7-DIGLUCURONIDE	Plant				--
0	TRICIN-7-GLUCURONIDE	Plant				--
0	TRICIN-7-TRIGLUCURONIDE	Plant				--
0	TRIFOLIOL	Shoot		20.0		--
0	TRIFOLIOL	Plant				--
0	TRIFOLIOL	Leaf				--
0	TRIGALACTOSYL-DIGLYCERIDE	Leaf		58.0		--
15	TRIGONELLINE	Seed				--
15	TRIGONELLINE	Plant				--
1	TRIMETHYLAMINE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
29	TRYPTOPHAN	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	VALINE	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
4	VESTITOL	Sprout Seedling				--
2	VESTITONE	Plant				--
2	VIOLAXANTHIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	VIOLAXANTHIN	Leaf				--
0	VIT-E	Plant				--
0	VIT-K	Plant				--
0	VITAMIN-A	Leaf				--
0	VITAMIN-D	Leaf				--
0	VITAMIN-D-2	Shoot		0.048		--
0	VITAMIN-D-3	Shoot		0.001		--
75	VITAMIN-E	Plant				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	VITAMIN-K	Plant				--
0	WAIROL	Leaf				--
0	WATER	Seed		117000.0	-0.4244455776048554	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	WATER	Plant		812000.0	0.17581903390571232	--
0	XANTHOPHYLLS	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	Refernce Citation
3	XYLOSE	Plant				--
0	ZANHIC-ACID	Leaf				--
5	ZEAXANTHIN	Plant				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
5	ZEAXANTHIN	Flower				--
5	ZEAXANTHIN	Leaf				--
0	ZEINOXANTHIN	Shoot				--
0	ZETA-CAROTENE	Flower				--
77	ZINC	Plant				--