

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Hordeum vulgare*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
30	(+)-CATECHIN	Seed				--
0	(+)-CORYDINE	Root				--
1	(+)-GLAUCINE	Root				--
0	(R)-EPI-HETERODENDRIN	Sprout Seedling				--
0	1,4-BENZOQUINONE	Tissue Culture				--
0	1,4-BENZOQUINONE	Root				--
0	1,4-BENZOQUINONE	Leaf				--
0	1-(3-AMINO-PROPYL)-PYRROLLINIUM	Sprout Seedling				--
0	2'-DEOXYMUGINEIC ACID	Root				--
0	2-CARBOXYARABINITOL	Leaf		814.0	1.6729805373372688	Moore, B. D., Isidoro, E., Seemann, J. R. 1993. Distribution of 2-Carboxyarabinitol Among Plants. <i>Phytochemistry</i> 34 3: 703-707. Dept. Biochem. Univ. Nevada Reno 89557, USA.
0	28-ISOFUCOSTEROL	Embryo				--
0	28-ISOFUCOSTEROL	Seed				--
0	3-HYDROXY-MUGENIC-ACID	Root				--
0	5,7-DIHYDROXY-3',4',5'-TRIMETHOXY-FLAVONE	Shoot				--
0	5-HYDROXY-TRANS-FERULIC-ACID	Plant				--
0	ABSCISIC-ACID	Seed				--
1	ACONITIC-ACID	Root				--
0	ACONOTIC-ACID	Root				--
32	AESCULETIN	Protoplast				--
32	AESCULETIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
33	AESCULIN	Protoplast				--
0	ALKYL RESORCINOL	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ALPHA-ALLOCRYPTOPINE	Root				--
0	ALPHA-KETO-GLUTARIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
32	ALPHA-TOCOPHEROL	Seed	3.0	11.0	-0.6960177480084532	Jim Duke's personal files.*
32	ALPHA-TOCOPHEROL	Tissue Culture				--
32	ALPHA-TOCOPHEROL	Sprout Seedling				--
32	ALPHA-TOCOPHEROL	Leaf				--
32	ALPHA-TOCOPHEROL	Root				--
0	ALPHA-TOCOQUINONE	Leaf				--
0	ALPHA-TOCOQUINONE	Root				--
0	ALPHA-TOCOQUINONE	Tissue Culture				--
0	ALPHA-TOCOQUINONE	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	ALUMINUM	Stem		212.0	-0.7859500634899037	--
5	ALUMINUM	Seed		7.0	-0.35199825506698773	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
0	AMMONIA	Seed		8130.0	0.5437773586650575	--
0	AMMONIA(NH3)	Seed		8130.0	1.362190737564736	--
0	APIGENIN-7-O-BETA-D-GLUCOSIDE	Leaf				--
2	ARSENIC	Sprout Seedling		0.01		Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
112	ASCORBIC-ACID	Stem		3300.0	-0.07434961362635317	--
112	ASCORBIC-ACID	Seed		0.0	-0.33845664486186666	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	ASH	Seed	9000.0	132000.0	2.530126814681668	Jim Duke's personal files.*
0	ASH	Plant	61000.0	235000.0	2.0592947527160543	Jim Duke's personal files.*
0	ASH	Stem		81000.0	0.6239267870190052	--
0	BARWIN	Seed		6.0		--
53	BETA-CAROTENE	Stem		312.0	1.4040090844278104	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
53	BETA-CAROTENE	Seed	0.0	1.0	-0.36679931650710623	Jim Duke's personal files.*
53	BETA-CAROTENE	Plant	149.0	660.0	2.8473075887780093	Jim Duke's personal files.*
0	BETA-GLUCAN	Seed				--
47	BETA-SITOSTEROL	Embryo				--
47	BETA-SITOSTEROL	Sprout Seedling		980.0	1.3218930544492802	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
47	BETA-SITOSTEROL	Plant				--
14	BETAINE	Shoot		1.8	-0.5768792410175753	--
14	BETAINE	Root		234.0	-0.34965983970112485	--
4	BIOTIN	Seed	0.1	0.9	-0.5283838545861084	Jim Duke's personal files.*
4	BORON	Seed	2.0	6.0	-0.8591148525952217	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).
102	CAFFEIC-ACID	Seed				--
102	CAFFEIC-ACID	Fruit				--
28	CALCIUM	Plant	800.0	10400.0	-0.34115856607431033	Jim Duke's personal files.*
28	CALCIUM	Stem		11000.0	-0.8397648224115174	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Sprout Seedling		720.0	-0.580774133760098	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
28	CALCIUM	Seed	160.0	4100.0	-0.008525145677961804	Jim Duke's personal files.*
1	CALMODULIN	Shoot				--
1	CALMODULIN	Cotyledon				--
2	CAMPESTEROL	Sprout Seedling		330.0	1.0	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
4	CANDICINE	Sprout Seedling				--
0	CARBOHYDRATES	Stem		801000.0	0.716589328801054	--
0	CARBOHYDRATES	Seed	608000.0	868000.0	1.3695009296259926	Jim Duke's personal files.*
0	CARBOHYDRATES	Plant	265000.0	785000.0	0.7250258483008089	Jim Duke's personal files.*
43	CATECHIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	CELLULOSE	Plant	190000.0	322000.0	0.14010383620503333	Jim Duke's personal files.*
77	CHLOROGENIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
77	CHLOROGENIC-ACID	Fruit				--
20	CHOLINE	Seed	928.0	1617.0	-0.0521139565220809	--
24	CHROMIUM	Stem		31.0	3.464002072370349	--
0	CHRYSOERIOLOL-7-GALACTOSIDE	Leaf				--
0	CHRYSOERIOLOL-7-O-BETA-D-GLUCOSIDE	Leaf				--
2	CITRININ	Seed				--
2	COBALT	Stem		49.0	1.4481845216144724	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	COPPER	Sprout Seedling		8.0	-0.99861782933251	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
12	COPPER	Seed	1.0	20.0	0.4703525387576021	Jim Duke's personal files.*
57	COUMARIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CYANIDIN-3-ARABINOSIDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CYANIDIN-3-GLUCOSIDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CYCLIC-AMP	Seed				--
0	CYCLIC-AMP	Sprout Seedling				--
0	CYSTATHIONE	Sprout Seedling		0.07		--
0	CYSTATHIONINE	Sprout Seedling		0.07		--
2	CYSTINE	Seed	1000.0	2000.0	-0.8000073846519989	Jim Duke's personal files.*
0	DIAMINO-PROPANE	Sprout Seedling				--
4	DICENTRINE	Root				--
2	DIETHYL-AMINE	Seed		5.7		--
2	DIMETHYL-AMINE	Seed		1.6	-1.0309167098137846	--
0	EPIHETERODENDRIN	Sprout Seedling				--
30	ESCULETIN	Plant				--
29	ESCULIN	Plant				--
0	ETHYL-AMINE	Seed		3.4	1.0808342911737019	--
0	FAT	Stem		29000.0	-0.002226795336038504	--
0	FAT	Seed	5000.0	55000.0	-1.1081866985369908	Jim Duke's personal files.*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	FAT	Plant	19000.0	64000.0	0.17884052742918724	Jim Duke's personal files.*
61	FERULIC-ACID	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	FERULOYLQUINIC-ACID	Leaf				--
0	FERULOYLSHIKIMIC ACID	Leaf				--
15	FIBER	Stem		134000.0	-0.6321812822436766	--
15	FIBER	Seed	5000.0	151000.0	0.12808518644382472	Jim Duke's personal files.*
15	FIBER	Plant	128000.0	446000.0	1.6501518476432595	Jim Duke's personal files.*
15	FOLACIN	Seed	0.0	1.48	-0.46327972185260347	--
23	FOLIC-ACID	Seed	0.0	1.5	-0.35317919194008696	Jim Duke's personal files.*
8	FRUCTOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	GIBBERELLIN	Seed				--
0	GIBBERELLIN-A-1	Sprout Seedling				--
0	GIBBERELLIN-A-3	Sprout Seedling				--
0	GIBBERELLINS	Sprout Seedling				--
0	GLAUCENTRINE	Root				--
0	GLUCODIFRUCTOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	GLUCOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	GLUTAMIC-ACID	Seed	32000.0	38000.0	-0.15666375176263259	Jim Duke's personal files.*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	GLUTEN	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	GLYCINE-BETAINE	Leaf				--
5	GRAMINE	Protoplast				--
5	GRAMINE	Leaf				--
5	GRAMINE	Root				--
5	GRAMINE	Sprout Seedling				--
5	GRAMINE	Shoot				--
12	HERNIARIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	HETERODENDRIN	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	HEXACOSAN-1-AL	Leaf				--
0	HEXACOSAN-1-OL	Leaf				--
3	HORDATINE-A	Sprout Seedling				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
3	HORDATINE-B	Sprout Seedling				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	HORDEIN-B	Caryopsis				--
8	HORDENINE	Sprout Seedling		63.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	HORDENINE	Root				--
0	HORDEUM-PROTEIN	Seed	3.0	80.0		--
0	HORDEUMIN	Seed				--
0	HORSATINE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	HYDROXAMIC-ACID	Leaf				--
0	HYDROXAMIC-ACID	Protoplast				--
0	INDOLE-3-CARBOXALDEHYDE	Sprout Seedling				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	INDOLE-3-CARBOXYLIC-ACID	Sprout Seedling				--
6	IRON	Stem		160.0	-0.5446816797924848	--
6	IRON	Sprout Seedling		100.0	-0.4462591736837504	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
6	IRON	Seed	40.0	100.0	-0.2360003199095645	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	ISOORIENTIN	Leaf				--
0	ISOORIENTIN-3'-METHYL-ETHER	Leaf				--
0	ISOORIENTIN-7-ARABINOSYL-GLUCOSIDE	Leaf				--
0	ISOORIENTIN-7-FERULYL-GLUCOSIDE	Leaf				--
0	ISOORIENTIN-7-O-BETA-D-GLUCOSIDE	Leaf				--
0	ISOORIENTIN-7-RHAMNOGLUCOSIDE	Leaf				--
4	ISOVITEXIN	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOVITEXIN-7-DIGLUCOSIDE	Leaf				--
0	ISOVITEXIN-7-O-BETA-D-DIGLUCOSIDE	Leaf				--
0	ISOVITEXIN-7-O-BETA-D-GLUCOSIDE	Leaf				--
0	JASMONIC-ACID	Fruit				--
1	LEUCOCYANIDIN	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
13	LIGNIN	Plant	15000.0	77000.0	-1.044805693940176	Jim Duke's personal files.*
27	LINOLEIC-ACID	Leaf				--
27	LINOLEIC-ACID	Seed	2185.0	24035.0	-0.7118993494812657	Jim Duke's personal files.*
0	LINOLENIC-ACID	Leaf				--
0	LINOLENIC-ACID	Seed	22.0	242.0	-0.5756374336657255	Jim Duke's personal files.*
15	LUTEIN	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LUTEOLIN-7-O-BETA-D-GLUCOSIDE	Leaf				--
0	LUTONARIN	Shoot				--
0	LUTONARINE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	LUTONARINE-3'-METHYLETHER	Shoot				--
0	LUTONARINE-3'-METHYLETHER	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
65	MAGNESIUM	Stem		2250.0	-1.0594120332843735	--
65	MAGNESIUM	Sprout Seedling		1670.0	-0.5837462312888009	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
65	MAGNESIUM	Seed	100.0	2300.0	-0.25527141304000667	Jim Duke's personal files.*
1	MALONIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
2	MALTOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	MANGANESE	Stem		60.0	-1.1875470930251946	--
14	MANGANESE	Sprout Seedling		26.0	0.8429272304235246	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
14	MANGANESE	Seed	2.0	120.0	0.8281082278982284	--
18	MANNITOL	Root				--
23	MELATONIN	Seed				Hattori, A., et. al. 1995. Identification of Melatonin in Plants and its Effects on Plasma Melatonin Levels and Binding to Melatonin Receptors in Vertebrates. Biochem. Mol. Biol. Int., 35(3): 627-634.
1	MERCURY	Sprout Seedling		0.07		Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
15	METHIONINE	Seed	1000.0	4000.0	-0.0812868777702854	Jim Duke's personal files.*
1	METHYL-AMINE	Seed		4.5	-1.2202340677772545	--
0	MUGINEIC-ACID	Root				--
1	N-METHYL-TYRAMINE	Root				--
1	N-METHYL-TYRAMINE	Sprout Seedling		48.0		--
1	N-METHYL-TYRAMINE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	NEOXANTHIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	NH3	Seed		8130.0	0.6124277850226415	--
39	NIACIN	Stem				--
39	NIACIN	Seed	17.0	115.0	2.1586670632815284	Jim Duke's personal files.*
0	O-HYDROXYCINNAMIC-ACID	Seed				Jim Duke's personal files.
0	OCHROTOXIN-A	Seed				--
18	OLEIC-ACID	Leaf				--
18	OLEIC-ACID	Seed	1325.0	14575.0	-0.8592851537559419	Jim Duke's personal files.*
4	ORIENTIN	Leaf				Chemical Constituents of Oriental Herbs (3 diff. books)
0	ORIENTIN-7-O-GLUCOSIDE	Leaf				Chemical Constituents of Oriental Herbs (3 diff. books)
0	ORYZANOL	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	OXALACETIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
25	P-COUMARIC-ACID	Fruit				--
25	P-COUMARIC-ACID	Seed				--
0	P-COUMAROYL-AGMATINE	Shoot		2.5		--
13	P-HYDROXY-BENZOIC-ACID	Seed				Jim Duke's personal files.
0	P-OXYBENZOIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	P-OXYCINNAMIC-ACID	Plant				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	PALMITIC-ACID	Seed	370.0	4070.0	-0.6156237435519392	Jim Duke's personal files.*
13	PALMITIC-ACID	Leaf				--
2	PALMITOLEIC-ACID	Leaf				--
11	PANTOTHENIC-ACID	Seed	2.0	12.0	-0.4968077273222071	Jim Duke's personal files.*
0	PENTOSANS	Plant	83000.0	239000.0	1.3444483701995555	Jim Duke's personal files.*
4	PHOSPHORUS	Stem		5950.0	2.566643749048099	--
4	PHOSPHORUS	Seed	1890.0	9200.0	1.0165110377918627	Jim Duke's personal files.*
4	PHOSPHORUS	Plant	2300.0	6900.0	1.5912232536803737	Jim Duke's personal files.*
5	PHYLLOQUINONE	Seed		0.07	-0.4540766091865	--
0	PHYTATE	Seed	1640.0	10000.0	-0.30876780753705974	--
9	PHYTIC-ACID	Seed	5600.0	11500.0	-0.4716099018081439	--
0	PHYTIN	Seed		12000.0	-0.5865906444504397	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	PHYTOSTEROLS	Sprout Seedling		2340.0	1.4787221837231173	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
10	PIPERIDINE	Seed		1.0		--
0	PLASTOHYDROQUINONE-9	Leaf				--
0	PLASTOHYDROQUINONE-9	Root				--
0	PLASTOHYDROQUINONE-9	Tissue Culture				--
0	PLASTOQUINONE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PLASTOQUINONE 9	Leaf				--
0	PLASTOQUINONE 9	Root				--
0	PLASTOQUINONE 9	Tissue Culture				--
0	PLASTOQUINONE 9	Sprout Seedling				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	POLYSACCHARIDE	Seed				--
14	POTASSIUM	Seed	1600.0	9900.0	-0.2348139824528988	--
14	POTASSIUM	Plant	19880.0	44000.0	1.5484017600425304	Jim Duke's personal files.*
14	POTASSIUM	Stem		25000.0	1.0285125288902355	--
14	POTASSIUM	Sprout Seedling		6130.0	-1.621510089564705	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
2	PROCYANIDIN-B-3	Seed				--
0	PRODELPHINIDIN-B-3	Seed				--
0	PRODELPHINIDIN-B-3-DIMER	Seed				--
0	PROLINE	Root	57.0	219.0	-1.1552542528043488	--
0	PROPELARGONIDIN-DIMER	Seed				--
0	PROTEIN	Plant	25000.0	344000.0	1.3975280926084976	Jim Duke's personal files.*
0	PROTEIN	Leaf				--
0	PROTEIN	Stem		89000.0	-0.7071067811865476	--
0	PROTEIN	Root				--
0	PROTEIN	Seed	82000.0	212000.0	-0.19388730833174384	Jim Duke's personal files.*
0	PROTOCHLOROPHYLL	Leaf				--
0	PUTRESCINE	Sprout Seedling				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
43	PYRIDOXINE	Seed	0.0	11.0	1.2007481038374281	Jim Duke's personal files.*
1	PYRROLIDINE	Seed		0.9		--
1	RAFFINOSE	Seed				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	RIBOFLAVIN	Stem	27.0	28.0	1.3933794062595939	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	RIBOFLAVIN	Seed	1.0	9.0	2.0986168328969494	Jim Duke's personal files.*
7	SALICYLATES	Seed		0.0	-0.3401776874861938	--
34	SALICYLIC-ACID	Shoot		1.0		--
0	SAPONARIN	Leaf				Chemical Constituents of Oriental Herbs (3 diff. books)
0	SAPONARIN	Shoot				--
0	SATIOMEM	Seed				--
44	SCOPOLETIN	Protoplast				--
44	SCOPOLETIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
60	SELENIUM	Stem		24.0	2.7096345976838996	--
1	SERINE	Seed		5000.0	-1.0683188967669957	Jim Duke's personal files.*
4	SILICON	Stem		34.0	-0.8566927096630965	--
0	SILICON-DIOXIDE	Seed	5000.0	9000.0	1.0	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
9	SINAPIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	SODIUM	Stem		2240.0	2.208894010961217	--
1	SODIUM	Sprout Seedling		256.0	-1.0708880985082736	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
1	SPERMINE	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
5	STARCH	Seed		620000.0	1.2546712758706633	--
8	STEARIC-ACID	Seed	130.0	1430.0	-0.534363896122953	Jim Duke's personal files.*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Leaf				--
12	STIGMASTEROL	Plant				--
12	STIGMASTEROL	Embryo				--
12	STIGMASTEROL	Sprout Seedling		1010.0	1.1166454979463096	--
14	SULFUR	Seed		200.0	-1.3206589077323676	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	SYRINGIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
31	THIAMIN	Stem		13.0	0.99861782933251	--
31	THIAMIN	Seed	1.0	10.0	0.8149652509512033	--
4	TIN	Stem		12.0	0.7071067811865475	--
0	TOCOPHEROLS	Seed	56.0	71.0	-0.675613618744914	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	TRANS-FERULIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
9	TRICIN	Shoot				--
0	TRICIN-7-O-BETA-D-GLUCOSIDE	Leaf				--
15	TRIGONELLINE	Seed		9.0	-0.4668864790645237	--
4	TRYPTAMINE	Sprout Seedling				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
29	TRYPTOPHAN	Seed	1000.0	3000.0	-0.1108675145369685	Jim Duke's personal files.*
29	TRYPTOPHAN	Sprout Seedling				--
11	TYRAMINE	Sprout Seedling		26.0		--
8	TYROSINE	Seed	2000.0	6000.0	-0.4033504117135999	Jim Duke's personal files.*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	UBIQUINONE	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
22	UMBELLIFERONE	Fruit				--
22	UMBELLIFERONE	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	VALINE	Seed	6000.0	9000.0	-0.3709002053950128	Jim Duke's personal files.*
24	VANILLIC-ACID	Fruit				--
2	VIOLAXANTHIN	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	VIT-K-1	Leaf				--
24	VITAMIN-B-1	Seed		4.47	-0.9999999999999994	--
0	VITAMIN-B-2	Seed		1.28	-1.0	--
0	VITAMIN-K-1	Tissue Culture				--
0	VITAMIN-K-1	Leaf				--
0	VITAMIN-K-1	Root				--
0	VITEXIN-7-O-BETA-D-DIGLUCOSIDE	Leaf				--
0	VITEXIN-7-RHAMNOGLUCOSIDE	Leaf				--
0	WATER	Plant		883000.0	0.47977378407142257	Jim Duke's personal files.*
0	WATER	Stem		860000.0	0.42665454120726076	--
0	WATER	Seed	6000.0	178000.0	-0.19036313251240586	Jim Duke's personal files.*
0	WAX	Leaf				--
77	ZINC	Stem		21.0	-1.4164667554004475	--
77	ZINC	Sprout Seedling		20.0	-1.394755939064127	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
77	ZINC	Seed	20.0	30.0	-0.42960193727303775	ANON. 1948-1976. The Weaith of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.