

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Phaseolus vulgaris

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	1",2"-DEHYDROCYCLOKIEVITONE	Fruit				--
0	12-DICARBONIC-ACID	Hull Husk				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	17-BETA-ESTRADIOL	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	2'-HYDROXYDAIDZEIN	Fruit				--
0	2'-HYDROXYDIHYDRODAIDZEIN	Fruit				--
3	2'-HYDROXYGENISTEIN	Fruit				--
0	2'-O-METHYLPHASEOLINISOFLAVAN	Root				--
3	2,3-DEHYDROKIEVITONE	Fruit				--
0	2-CARBOXYARABINITOL	Leaf				Moore, B. D., Isidoro, E., Seemann, J. R. 1993. Distribution of 2-Carboxyarabinitol Among Plants. Phytochemistry 34 3: 703-707. Dept. Biochem. Univ. Nevada Reno 89557, USA.
0	2-METHOXYPHASEOLINISOFLAVAN	Sprout Seedling				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	2-METHYL-BUTAN-1-OL	Stem Essent. Oil				--
0	2-PHENYLACETALDEHYDE	Stem Essent. Oil				--
0	24-ALPHA-ETHYLLOPHENOL	Seed				--
0	24-ALPHA-METHYLLOPHENOL	Seed				--
0	25-METHYLGRAMISTEROL	Seed				--
0	3-HYDROXY-4'-METHOXYFLAVONE	Shoot				--
0	3-METHYL-BUTAN-1-OL	Stem Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-HYDROXY-BENZOIC-ACID	Root		0.0		--
3	5-DEOXYKIEVITONE	Fruit				--
0	6-ALPHA-HYDROXYPHASEOLLIN	Fruit				--
0	ABSCISIC-ACID	Seed				--
32	AESCULETIN	Shoot				--
33	AESCULIN	Shoot				--
3	ALANINE	Sprout Seedling	1740.0	18710.0	1.3947743775561388	USDA's Ag Handbook 8 and sequelae)
3	ALANINE	Seed	9050.0	10171.0	0.003141221293226173	USDA's Ag Handbook 8 and sequelae)
3	ALANINE	Fruit	840.0	8633.0	1.9358599962823033	USDA's Ag Handbook 8 and sequelae)
0	ALLANTOIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	ALPHA-LINOLENIC-ACID	Sprout Seedling	1690.0	18172.0	1.0	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Seed	2780.0	3124.0	-0.2692726614334871	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Fruit	360.0	3700.0	0.5231195202996494	USDA's Ag Handbook 8 and sequelae)
32	ALPHA-TOCOPHEROL	Fruit	0.2	14.0	-0.9061262102406885	--
32	ALPHA-TOCOPHEROL	Leaf	698.0	719.0	1.31063752499983	Jim Duke's personal files.*
5	ALUMINUM	Seed	5.0	73.0	-0.24213684736342636	--
5	ALUMINUM	Fruit	1.0	1050.0	0.08194632655997974	--
1	ANTHERAXANTHIN	Root				--
30	ANTHOCYANINS	Testa		23700.0		--
30	ANTHOCYANINS	Seed	2110.0	2150.0	-1.0	--
101	APIGENIN	Plant				--
2	ARCELIN	Seed				--
14	ARGININE	Sprout Seedling	2280.0	24516.0	1.410637937281947	USDA's Ag Handbook 8 and sequelae)
14	ARGININE	Seed	13370.0	15026.0	-0.40710870875521793	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	ARGININE	Fruit	730.0	7503.0	0.8517561962399948	USDA's Ag Handbook 8 and sequelae)
2	ARSENIC	Seed	0.002	0.003	-0.8212660387198343	--
2	ARSENIC	Fruit	0.003	0.01	-0.5241085631054083	--
112	ASCORBIC-ACID	Fruit	10.0	2389.0	-0.1359481698432153	--
112	ASCORBIC-ACID	Sprout Seedling	387.0	4161.0	2.245731295756901	USDA's Ag Handbook 8 and sequelae)
112	ASCORBIC-ACID	Seed	0.0	177.0	-0.23219490630475012	--
112	ASCORBIC-ACID	Leaf	1100.0	8333.0	0.32927611884954844	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Sprout Seedling	5000.0	53763.0	-0.2760046096827829	USDA's Ag Handbook 8 and sequelae)
0	ASH	Seed	17000.0	62000.0	0.4246927171829582	--
0	ASH	Leaf	26000.0	177000.0	1.0245017951519113	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Fruit	6000.0	156000.0	2.572346441516167	--
2	ASPARAGINE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ASPARAGINE	Leaf				--
3	ASPARTIC-ACID	Sprout Seedling	5460.0	58710.0	1.3787175899112203	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Seed	26130.0	29366.0	0.601633953309243	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Fruit	2550.0	26208.0	2.1085114325288035	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Leaf				--
8	AZELAIC-ACID	Root		0.0		--
0	BARIUM	Seed	0.1	7.3	-0.2675535445765077	--
0	BARIUM	Fruit	0.4	45.0	1.0083352341085803	--
24	BENZALDEHYDE	Stem Essent. Oil				--
3	BENZENE	Stem Essent. Oil				--
20	BENZOIC-ACID	Root		0.2	-0.9999999999999999	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	BENZYL-ALCOHOL	Stem Essent. Oil				--
53	BETA-CAROTENE	Sprout Seedling		0.0	-1.1430052498410248	USDA's Ag Handbook 8 and sequelae)
53	BETA-CAROTENE	Seed	0.1	9.8	0.18328220133121417	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Leaf	32.4	245.5	-0.06879977995916696	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Fruit	2.2	66.0	-0.023223818267477877	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
47	BETA-SITOSTEROL	Seed	910.0	980.0	-0.2549179103853718	--
4	BIOTIN	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	BORON	Seed	2.0	43.0	0.8959785913404347	--
4	BORON	Fruit	0.1	45.0	0.10211490884545635	--
0	BOWMAN-BIRK-PROTEASE-INHIBITOR	Seed				--
0	BROMINE	Fruit	2.0	20.0	0.22332723411888744	ACTA AGRIC SCAND SUPPL 22: 1980
3	CADMIUM	Fruit	0.002	0.2	-0.0558396104562371	--
3	CADMIUM	Seed	0.007	0.039	-0.32899557204292573	--
102	CAFFEIC-ACID	Fruit				--
102	CAFFEIC-ACID	Leaf				--
102	CAFFEIC-ACID	Shoot				--
28	CALCIUM	Sprout Seedling	170.0	1828.0	-0.4514538483488865	USDA's Ag Handbook 8 and sequelae)
28	CALCIUM	Seed	510.0	3295.0	-0.1563697937955226	--
28	CALCIUM	Leaf	2740.0	20758.0	0.15857612188539408	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Fruit	356.0	18000.0	3.2638086276599014	--
2	CAMPESTEROL	Seed		30.0	-0.5601817141925177	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CARBOHYDRATES	Seed	278000.0	701039.0	0.7059641852803317	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Leaf	66000.0	500000.0	-0.88949734732397	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	CARBOHYDRATES	Fruit	56000.0	733778.0	-0.26258259973548	--
0	CARBOHYDRATES	Sprout Seedling	41000.0	440860.0	-0.7491487580636056	USDA's Ag Handbook 8 and sequelae)
0	CEREBROSIDE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	CHOLINE	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	CHROMIUM	Seed	0.051	4.9	0.03136617302691837	--
24	CHROMIUM	Fruit	0.005	1.5	-0.2969460293418225	--
0	COBALAMINE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	COBALT	Seed	0.034	1.05	-0.160403983415517	--
2	COBALT	Fruit	0.0	10.5	0.736007005742018	--
12	COPPER	Seed	2.0	15.0	0.01682814208698858	--
12	COPPER	Fruit	0.62	45.0	2.504632964835247	--
13	COUMESTROL	Sprout Seedling				--
13	COUMESTROL	Leaf				--
13	COUMESTROL	Fruit				--
0	CYANIDIN-3,5-DIGLUCOSIDE	Seed				--
0	CYANIDIN-3-GLUCOSIDE	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CYCLOKIEVITONE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
2	CYSTINE	Fruit	180.0	1850.0	0.8540501474455284	USDA's Ag Handbook 8 and sequelae)
2	CYSTINE	Sprout Seedling	480.0	5161.0	1.2557326816531587	USDA's Ag Handbook 8 and sequelae)
2	CYSTINE	Seed	2350.0	2641.0	-0.35407501847312656	USDA's Ag Handbook 8 and sequelae)
32	DAIDZEIN	Seed	0.4	23.2	-0.4139162724750747	Kaufman,PB,Duke,JA,Brielm ann,H,Boik,J and Hoyt,JE. 1997. A Comparative Survey of Leguminous Plants as Sources of the Isoflavones Genistein and Daidzein: Implications For Human Nutrition and Health. Journal of Alternative & Complementary Medicine 3(1):7-12
32	DAIDZEIN	Fruit				--
0	DEC-2-EN	Hull Husk				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DELPHINIDIN-3-O-BETA-GLUCOSIDE	Seed				--
3	DEMETHYLMEDICARPIN	Fruit				--
3	DEMETHYLVESTITOL	Fruit				--
0	DL-5-DEOXYKIEVITONE	Fruit				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	DL-DALBERGIODIN	Fruit				--
1	ESTRADIOL-17-BETA	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ESTROL	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	ESTRONE	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	FAT	Sprout Seedling	5000.0	53763.0	0.44056677095674335	USDA's Ag Handbook 8 and sequelae)
0	FAT	Seed	3000.0	24000.0	-1.2714747872119285	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Leaf	4000.0	54000.0	-0.049061951284346775	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Fruit	2000.0	47000.0	-0.2822698703336837	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FERRITINE	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
61	FERULIC-ACID	Plant				--
15	FIBER	Seed	37000.0	88700.0	-0.36384625388437297	--
15	FIBER	Leaf	28000.0	212000.0	0.6240585804192432	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Fruit	10000.0	159000.0	0.16347399426220346	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FLUORINE	Fruit	0.1	2.0	0.6390515352877183	ACTA AGRIC SCAND SUPPL 22: 1980
15	FOLACIN	Sprout Seedling	0.3	4.1	-0.6721179518792173	USDA's Ag Handbook 8 and sequelae)
15	FOLACIN	Seed	4.1	5.3	1.1168350437518124	USDA's Ag Handbook 8 and sequelae)
22	GAMMA-AMINOBUTYRIC-ACID	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	GARBANZOL	Shoot				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
81	GENISTEIN	Fruit				--
81	GENISTEIN	Seed	17.7	45.1	-0.30314631606927606	Kaufman,PB,Duke,JA,Briellmann,H,Boik,J and Hoyt,JE. 1997. A Comparative Survey of Leguminous Plants as Sources of the Isoflavones Genistein and Daidzein: Implications For Human Nutrition and Health. Journal of Alternative & Complementary Medicine 3(1):7-12
0	GIBBERELIN-A-37	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GIBBERELIN-A-38	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	GLUCOKININ	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	GLUCOSAMINE	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
8	GLUTAMIC-ACID	Sprout Seedling	5120.0	55054.0	1.0799400548183595	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Seed	32940.0	37019.0	-0.19805301000491887	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Fruit	1870.0	19219.0	0.46547383123553154	USDA's Ag Handbook 8 and sequelae)
7	GLUTATHIONE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
12	GLYCINE	Sprout Seedling	1440.0	15484.0	1.261205834725475	USDA's Ag Handbook 8 and sequelae)
12	GLYCINE	Seed	8430.0	9474.0	-0.21372029598699516	USDA's Ag Handbook 8 and sequelae)
12	GLYCINE	Fruit	650.0	6680.0	1.1896880668322627	USDA's Ag Handbook 8 and sequelae)
7	HISTIDINE	Sprout Seedling	1180.0	12688.0	1.3806152102919922	USDA's Ag Handbook 8 and sequelae)



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	HISTIDINE	Seed	6010.0	6754.0	0.16746212043009365	USDA's Ag Handbook 8 and sequelae)
7	HISTIDINE	Fruit	340.0	3494.0	1.2489681913399917	USDA's Ag Handbook 8 and sequelae)
8	INOSITOL	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	IRON	Fruit	6.0	1050.0	3.6375788214429425	--
6	IRON	Sprout Seedling	8.0	87.0	-0.7022019350611952	USDA's Ag Handbook 8 and sequelae)
6	IRON	Seed	24.0	147.0	-0.01762392069928863	--
6	IRON	Leaf	92.0	697.0	0.8461339135363539	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	ISOLEUCINE	Sprout Seedling	1860.0	20000.0	1.3387670878508608	USDA's Ag Handbook 8 and sequelae)
3	ISOLEUCINE	Seed	9540.0	10722.0	0.029405154215433976	USDA's Ag Handbook 8 and sequelae)
3	ISOLEUCINE	Fruit	660.0	6783.0	0.9446436808495005	USDA's Ag Handbook 8 and sequelae)
0	ISORHAMNETIN-3-O-BETA-D-GALACTOPYRANOSIDE	Shoot				--
0	ISORHAMNETIN-3-O-RUTINOSIDE	Shoot				--
0	KAEMPFEROL-3-GLUCURONIDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	KAEMPFEROL-3-O-BETA-D-DIGLUCOPYRANOSIDE-7-O-BETA-D-GLUCOPYRANOSIDE	Shoot				--
0	KAEMPFEROL-3-O-BETA-ROBINOSIDE-7-O-ALPHA-L-RHAMNOPYRANOSIDE	Shoot				--
0	KAEMPFEROL-3-O-BETA-RUTINOSIDE	Shoot				--
0	KAEMPFEROL-3-O-METHYL-ETHER	Shoot				--
3	KIEVITONE	Sprout Seedling				--
3	KIEVITONE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KILOCALORIES	Fruit	280.0	3830.0	0.2573622436618889	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	KILOCALORIES	Sprout Seedling	290.0	3118.0	-0.7170779750926094	USDA's Ag Handbook 8 and sequelae)
0	KILOCALORIES	Seed	3230.0	3832.0	-0.8036030124335913	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	KILOCALORIES	Leaf	360.0	2730.0	-0.4643632980748094	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	LEAD	Seed	0.7	1.0	-0.41629068360999466	--
0	LEAD	Fruit	0.01	10.5	0.1305774553688786	--
2	LEUCINE	Sprout Seedling	3020.0	32473.0	1.3936225297206044	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Seed	17250.0	19386.0	0.22058877840649277	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Fruit	1120.0	11511.0	1.3626585508389712	USDA's Ag Handbook 8 and sequelae)
4	LICOISOFLAVONE-A	Fruit				--
13	LIGNIN	Seed	4100.0	10800.0	-0.5794579459544289	--
27	LINOLEIC-ACID	Seed	3320.0	3731.0	-0.8858660372294648	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Fruit	230.0	2364.0	-0.322047416199203	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Sprout Seedling	1070.0	11505.0	1.3800855724382957	USDA's Ag Handbook 8 and sequelae)
11	LITHIUM	Seed	0.136	2.45	1.0	--
11	LITHIUM	Fruit	0.216	2.7	2.361727290933658	--
78	LUTEOLIN	Plant				--
4	LUTEONE	Plant				--
4	LYSINE	Sprout Seedling	2390.0	25700.0	0.9673053866582134	USDA's Ag Handbook 8 and sequelae)
4	LYSINE	Seed	14830.0	16667.0	0.6188126359243304	USDA's Ag Handbook 8 and sequelae)
4	LYSINE	Fruit	880.0	9044.0	1.2767170132921903	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Sprout Seedling	210.0	2258.0	0.6301981860332678	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Seed	510.0	3430.0	0.1911841778868468	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
65	MAGNESIUM	Fruit	210.0	18000.0	7.348853900872472	--
1	MALONIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	MALVIDIN-3,5-DIGLUCOSIDE	Seed				--
0	MALVIDIN-3-GLUCOSIDE	Seed				--
0	MALVIDIN-3-O-BETA-GLUCOSIDE	Seed				--
14	MANGANESE	Seed	2.0	24.0	-0.36773991202981754	--
14	MANGANESE	Fruit	1.0	150.0	0.5855429425865706	--
1	MERCURY	Fruit	0.0	0.02	0.10095423065636192	ACTA AGRIC SCAND SUPPL 22: 1980
15	METHIONINE	Sprout Seedling	440.0	4731.0	1.4123467390935749	USDA's Ag Handbook 8 and sequelae)
15	METHIONINE	Seed	3250.0	3653.0	-0.17088889060665519	USDA's Ag Handbook 8 and sequelae)
15	METHIONINE	Fruit	220.0	2261.0	1.6039139290826174	USDA's Ag Handbook 8 and sequelae)
2	MOLYBDENUM	Seed	0.5	14.0	2.04890928955185	--
2	MOLYBDENUM	Fruit	0.0	20.0	3.5232006502501756	--
13	MUFA	Seed	1230.0	1382.0	-0.7816108183599115	USDA's Ag Handbook 8 and sequelae)
13	MUFA	Fruit	50.0	514.0	-0.24652333932499626	USDA's Ag Handbook 8 and sequelae)
13	MUFA	Sprout Seedling	390.0	4194.0	1.1231063025389685	USDA's Ag Handbook 8 and sequelae)
0	N-6-METHYLAGMATINE	Seed				--
39	NIACIN	Sprout Seedling	29.0	312.0	1.9797867078051916	USDA's Ag Handbook 8 and sequelae)
39	NIACIN	Seed	15.0	38.0	-0.14625954869692315	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Leaf	13.0	98.0	0.006072438030661054	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Fruit	5.0	77.0	0.21792793545541794	--
3	NICKEL	Seed	0.5	7.0	0.4299174580067636	--
3	NICKEL	Fruit	0.0	15.0	3.782348464800497	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	NITROGEN	Fruit	3600.0	41000.0	1.8495488678089596	ACTA AGRIC SCAND SUPPL 22: 1980
0	OBTUSIFOLIOL	Seed				--
18	OLEIC-ACID	Sprout Seedling	390.0	4194.0	1.1231063025389685	USDA's Ag Handbook 8 and sequelae)
18	OLEIC-ACID	Seed	1230.0	1382.0	-0.9677393599848595	USDA's Ag Handbook 8 and sequelae)
18	OLEIC-ACID	Fruit	40.0	411.0	-0.47757744668657376	USDA's Ag Handbook 8 and sequelae)
9	OXALIC-ACID	Fruit		312.0	-0.2891446131596579	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.
25	P-COUMARIC-ACID	Plant				--
13	PALMITIC-ACID	Sprout Seedling	640.0	6882.0	1.3448727445716455	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Seed	3430.0	3855.0	-0.6200598911666574	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Fruit	220.0	2261.0	-0.33033662178520984	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Seed	9.0	10.0	-0.7062839299879305	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Fruit	0.9	10.0	-0.5169531369709149	USDA's Ag Handbook 8 and sequelae)
0	PELARGONIDIN-3,5-DIGLUCOSIDE	Seed				--
0	PELARGONIDIN-3-GLUCOSIDE	Seed				--
0	PETUNIDIN-3,5-DIGLUCOSIDE	Seed				--
0	PETUNIDIN-3-GLUCOSIDE	Seed				--
0	PETUNIDIN-3-O-BETA-GLUCOSIDE	Seed				--
0	PHASELIC-ACID	Plant				--
0	PHASEOLIC-ACID	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PHASEOLIDES	Plant				J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.
2	PHASEOLLIDIN	Sprout Seedling				--
2	PHASEOLLIDIN	Fruit				--
2	PHASEOLLIDIN	Plant				--
3	PHASEOLLIN	Sprout Seedling				--
3	PHASEOLLIN	Fruit				--
3	PHASEOLLIN	Plant				--
0	PHASEOLLIN-ISOFILAVONE	Plant				--
0	PHASEOLLINISOFILAVAN	Sprout Seedling				--
0	PHASEOLLINISOFILAVAN	Leaf				--
0	PHASEOLOSIDE-D	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
7	PHENYLALANINE	Sprout Seedling	2120.0	22796.0	1.3788035015222284	USDA's Ag Handbook 8 and sequelae)
7	PHENYLALANINE	Seed	11680.0	13127.0	0.1894646111834179	USDA's Ag Handbook 8 and sequelae)
7	PHENYLALANINE	Fruit	670.0	6886.0	1.234712103192483	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Sprout Seedling	370.0	3978.0	-1.1151930397583163	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Seed	2130.0	5880.0	0.13917110024123713	--
4	PHOSPHORUS	Leaf	750.0	5682.0	0.1307311101991161	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Fruit	370.0	13500.0	3.123661608104951	--
5	PHYLLOQUINONE	Seed		0.03	-0.9989685402102998	--
5	PHYLLOQUINONE	Plant		0.3	-0.282349716183853	Booth, S. L., Suttie, J. W. 1998. Dietary intake and adequacy of vitamin K. J. Nutrition, 128(5): 785-788.
5	PHYLLOQUINONE	Fruit		0.39	-0.1718474808231038	--
0	PHYTATE	Seed	2220.0	11160.0	-0.16147350044604297	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PHYTATE	Fruit	600.0	12230.0	0.8654416504281724	--
9	PHYTIC-ACID	Seed		4800.0	-0.9830225579681726	--
2	PHYTOHAEMAGGLUTININ	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
2	PHYTOSTEROLS	Sprout Seedling		1210.0	-0.4125693472413681	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	PHYTOSTEROLS	Fruit	140.0	1400.0	0.5856850819762605	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	PHYTOSTEROLS	Seed	760.0	1270.0	-0.30196717665569645	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
2	PIPECOLIC-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	PIPECOLIC-ACID	Fruit				--
14	POTASSIUM	Sprout Seedling	1870.0	20108.0	1.1936563492190109	USDA's Ag Handbook 8 and sequelae)
14	POTASSIUM	Seed	9840.0	21070.0	0.7475149351061016	--
14	POTASSIUM	Fruit	1960.0	58500.0	3.5905687332406746	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROLINE	Sprout Seedling	1690.0	18172.0	1.0	USDA's Ag Handbook 8 and sequelae)
0	PROLINE	Seed	9160.0	10294.0	-0.20468312127747473	USDA's Ag Handbook 8 and sequelae)
0	PROLINE	Fruit	680.0	6989.0	0.8185980204778843	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROPANE-1-THIOL	Seed				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	PROTEIN	Fruit	17700.0	224000.0	1.5349418612883672	--
0	PROTEIN	Sprout Seedling	42000.0	451613.0	1.1086179079310678	USDA's Ag Handbook 8 and sequelae)
0	PROTEIN	Seed	98000.0	394000.0	1.4250969454715805	--
0	PROTEIN	Leaf	36000.0	297000.0	0.8495029113063044	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PUFA	Sprout Seedling	2760.0	29677.0	1.412750482855845	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Seed	6100.0	6855.0	-0.7537877814580886	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Fruit	590.0	6064.0	-0.40541659747163294	USDA's Ag Handbook 8 and sequelae)
0	PYRROLIDINONCARBONIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	QUERCETAGETIN-3,3',4',5,6-PENTA-O-METHYL-ETHER	Shoot				--
0	QUERCETIN-3-GLUCURONIDE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	QUERCETIN-3-O-BETA-D-GLUCOPYRANOSIDE-7-O-BETA-L-RUTINOSIDE	Shoot				--
0	QUERCETIN-3-O-BETA-D-SOPHOROSIDE	Shoot				--
0	QUERCETIN-3-O-BETA-ROBINOSIDE-7-O-ALPHA-L-RHAMNOPYRANOSIDE	Shoot				--
6	QUERCETIN-3-O-METHYL-ETHER	Shoot				--
15	RIBOFLAVIN	Seed	1.2	3.0	-0.20090831129253928	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Leaf	0.6	4.5	-0.15676783794873836	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	RIBOFLAVIN	Fruit	1.0	12.0	1.4971748931477993	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	RIBOFLAVIN	Sprout Seedling	2.5	27.0	1.6502789577404713	USDA's Ag Handbook 8 and sequelae)
0	RUBIDIUM	Fruit	0.47	7.0	-0.905710108464357	ACTA AGRIC SCAND SUPPL 22: 1980
87	RUTIN	Shoot				--
7	SALICYLATES	Seed		0.1	-0.33964115782820603	--
7	SALICYLATES	Fruit	1.1	10.0	-0.30806739882297696	--
5	SAPONINS	Seed	2000.0	21000.0	-0.2066842977305945	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
60	SELENIUM	Seed	0.0	0.01	-0.26367583057907024	--
60	SELENIUM	Fruit	0.001	0.008	-0.3842034258451728	--
1	SERINE	Sprout Seedling	2240.0	24086.0	1.180736904993277	USDA's Ag Handbook 8 and sequelae)
1	SERINE	Seed	11750.0	13205.0	0.5041735431253	USDA's Ag Handbook 8 and sequelae)
1	SERINE	Fruit	990.0	10175.0	2.3061340030732844	USDA's Ag Handbook 8 and sequelae)
0	SFA	Sprout Seedling	720.0	7742.0	1.2233448497999149	USDA's Ag Handbook 8 and sequelae)
0	SFA	Seed	3660.0	4113.0	-0.5380245437078873	USDA's Ag Handbook 8 and sequelae)
0	SFA	Fruit	260.0	2672.0	-0.3204812938745274	USDA's Ag Handbook 8 and sequelae)
1	SILICIC-ACID	Fruit				Wichtl, M. 1984. Teedrogen. Ein Handbuch für Apotheker und Ärzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
4	SILICON	Fruit	80.0	1200.0	3.290324051188331	ACTA AGRIC SCAND SUPPL 22: 1980
3	SILVER	Seed	0.034	0.147	1.6847800226626266	--
3	SILVER	Fruit	0.0	0.3	0.1081254631556644	--
1	SODIUM	Seed	0.85	112.0	-0.5379255786762488	--
1	SODIUM	Fruit	5.4	707.0	-0.1169067704729757	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	STEARIC-ACID	Sprout Seedling	90.0	968.0	0.8890008890013331	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Seed	220.0	247.0	-0.5600309790083939	USDA's Ag Handbook 8 and sequelae)
8	STEARIC-ACID	Fruit	40.0	411.0	-0.25196474179745715	USDA's Ag Handbook 8 and sequelae)
12	STIGMASTEROL	Seed	310.0	350.0	-0.08551942901822024	--
0	STRONTIUM	Fruit	2.0	105.0	0.648958999090785	--
0	STRONTIUM	Seed	0.7	34.0	0.27877454910461275	--
7	SUCCINIC-ACID	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SULFUR	Seed	54.0	137.0	-1.35629370804739	--
14	SULFUR	Fruit	54.0	875.0	-0.3755320511405759	--
31	THIAMIN	Sprout Seedling	3.7	40.0	1.89596883432045	USDA's Ag Handbook 8 and sequelae)
31	THIAMIN	Seed	3.7	10.0	0.8149652509512033	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Leaf	1.8	13.6	1.1035688761011757	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	THIAMIN	Fruit	0.5	8.8	0.4438315088870722	--
4	THREONINE	Sprout Seedling	1760.0	18925.0	1.3707697029783192	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Seed	9090.0	10216.0	0.4649598868080567	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Fruit	790.0	8119.0	2.1205716552699916	USDA's Ag Handbook 8 and sequelae)
0	TITANIUM	Seed	0.17	7.4	-0.3872797774720413	--
0	TITANIUM	Fruit	0.1	105.0	1.6199409608547914	--
0	TRAUMATINIC-ACID	Hull Husk				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	TRIGONELLINE	Fruit				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
29	TRYPTOPHAN	Sprout Seedling	440.0	4731.0	1.0	USDA's Ag Handbook 8 and sequelae)
29	TRYPTOPHAN	Seed	2560.0	2877.0	-0.15281466233039345	USDA's Ag Handbook 8 and sequelae)
29	TRYPTOPHAN	Fruit	190.0	1953.0	1.547374921415972	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Sprout Seedling	1440.0	15484.0	1.3555058802029287	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Seed	6080.0	6833.0	-0.21038402390128882	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Fruit	420.0	4317.0	0.7865958480561471	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Sprout Seedling	2160.0	23226.0	1.413510807979029	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Seed	11300.0	12699.0	0.08466798376866035	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Fruit	900.0	9250.0	0.9897535481365168	USDA's Ag Handbook 8 and sequelae)
16	VANADIUM	Fruit	0.24	105.0	1.4126964815471459	--
0	VIT-B-6	Seed	2.8	3.3	-0.6250905636370491	USDA's Ag Handbook 8 and sequelae)
0	VIT-B-6	Fruit	0.74	7.6	-0.10182677333497814	USDA's Ag Handbook 8 and sequelae)
0	WATER	Sprout Seedling		907000.0	0.9488900372109252	USDA's Ag Handbook 8 and sequelae)
0	WATER	Seed	63000.0	604000.0	1.4443765660020778	--
0	WATER	Leaf		868000.0	0.301146524467288	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	WATER	Fruit	688000.0	942000.0	0.7453687433782967	--
77	ZINC	Fruit	2.0	150.0	3.6012329645407544	--
77	ZINC	Seed	19.0	50.0	0.1382020296387132	--
0	ZIRCONIUM	Seed	0.68	1.47	-0.7740372080500321	--
0	ZIRCONIUM	Fruit	1.0	22.0	3.392629553722857	--