

List of Plants



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*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	Part	Low PPM	High PPM	StdDev	*Reference
Abelmoschus esculentus	Fruit	450.0	14930.0	3.0	*
Acacia farnesiana	Leaf	4080.0	21890.0	1.54	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Allium cepa	Bulb	370.0	4033.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Allium schoenoprasum	Leaf	1850.0	23125.0	1.72	USDA's Ag Handbook 8 and sequelae)
Allium ampeloprasum	Plant	--	--		*
Allium sativum var. sativum	Bulb	1.3	5800.0	1.0	*
Allium sativum var. sativum	Leaf	--	--		*
Aloe vera	Leaf	--	3339.0	-1.15	*
Alpinia galanga	Leaf	--	--		*
Amaranthus sp.	Leaf	1210.0	14556.0	0.48	*
Anacardium occidentale	Seed	6900.0	7019.0	-0.85	*
Ananas comosus	Fruit	31.0	963.0	-0.84	*
Anastatica hierochuntica	Plant	--	--		*
Angelica sinensis	Root	--	--		Jim Duke's personal files.
Apium graveolens	Leaf	170.0	3208.0	-1.16	USDA's Ag Handbook 8 and sequelae)
Arachis hypogaea	Seed	11540.0	15362.0	0.79	*
Arctium lappa	Root	520.0	2600.0	0.43	USDA's Ag Handbook 8 and sequelae)
Artemisia dracunculus	Leaf	--	--		*
Artemisia dracunculus	Root	--	--		*
Artocarpus altilis	Seed	3690.0	8440.0	-0.57	USDA's Ag Handbook 8 and sequelae)
Asimina triloba	Fruit	282.0	3648.0	-0.1	*
Asparagus officinalis	Shoot	1620.0	20903.0	1.4	*
Astragalus membranaceus	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Avena sativa	Root	--	2.4	-1.3	*
Avena sativa	Shoot	--	1.3	-0.71	*
Averrhoa carambola	Fruit	260.0	2860.0	-0.31	USDA's Ag Handbook 8 and sequelae)
Basella alba	Leaf	700.0	10145.0	-0.16	*

<i>Bertholletia excelsa</i>	Seed	7620.0	7884.0	-0.68	USDA's Ag Handbook 8 and sequelae)
<i>Beta vulgaris</i>	Root	380.0	2997.0	0.7	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>viridis</i> L.	Leaf	670.0	10981.0	-0.04	*
<i>Brassica chinensis</i>	Leaf	310.0	6625.0	-0.67	*
<i>Brassica oleracea</i> var. <i>italica</i>	Leaf	1140.0	12244.0	0.14	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>capitata</i> L.	Leaf	2380.0	31821.0	2.98	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>botrytis</i> L.	Flower	860.0	11110.0		*
<i>Brassica rapa</i>	Leaf	310.0	6625.0	-0.67	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>sabellica</i> L.	Leaf	1960.0	12610.0	0.2	*
<i>Brassica oleracea</i> var. <i>botrytis</i> L.	Leaf	1140.0	12244.0	0.14	*
<i>Cajanus cajan</i>	Seed	9550.0	11830.0	0.1	*
<i>Calathea allouia</i>	Root	2610.0	2870.0	0.61	*
<i>Camellia sinensis</i>	Leaf	--	--		*
<i>Capsella bursa-pastoris</i>	Plant	--	--		*
<i>Capsicum frutescens</i>	Fruit	870.0	7099.0	0.85	*
<i>Capsicum annum</i>	Fruit	370.0	5047.0	0.29	*
<i>Carica papaya</i>	Fruit	100.0	895.0	-0.85	USDA's Ag Handbook 8 and sequelae)
<i>Carum carvi</i>	Seed	9170.0	10180.0	-0.23	Revised USDA data received 1993.
<i>Castanea sativa</i>	Seed	1010.0	2222.0	-1.79	*
<i>Castanea mollissima</i>	Seed	1632.0	2904.0	-1.66	*
<i>Castanea dentata</i>	Seed	2141.0	3811.0	-1.48	*
<i>Ceratonia siliqua</i>	Seed	--	18800.0	1.47	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<i>Chenopodium album</i>	Leaf	2230.0	14205.0	0.43	*
<i>Cicer arietinum</i>	Seed	7970.0	16530.0	1.02	*
<i>Cichorium endivia</i>	Leaf	590.0	9500.0	-0.25	*
<i>Citrullus lanatus</i>	Fruit	--	2827.0	-0.32	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Citrullus lanatus</i>	Seed	--	11800.0	0.09	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Citrus sinensis</i>	Fruit	60.0	3473.0	-0.15	*
<i>Citrus reticulata</i>	Fruit	310.0	2499.0	-0.41	USDA's Ag Handbook 8 and sequelae)
<i>Citrus paradisi</i>	Fruit	--	590.0	-0.94	*
<i>Cnidioscolus chayamansa</i>	Leaf	620.0	3100.0	-1.18	*
<i>Cocos nucifera</i>	Seed	1380.0	2605.0	-1.72	USDA's Ag Handbook 8 and sequelae)
<i>Cocos nucifera</i>	Leaf	--	--		Jim Duke's personal files.
<i>Colocasia esculenta</i>	Root	600.0	2045.0	0.06	*

Corchorus olitorius	Leaf	1130.0	20052.0	1.28	*
Coriandrum sativum	Fruit	--	--		*
Crocus sativus	Bulb	--	--		*
Cucumis sativus	Fruit	120.0	3038.0	-0.27	*
Cucurbita pepo	Fruit	260.0	17100.0	3.59	*
Cucurbita foetidissima	Seed	8290.0	15390.0	0.8	*
Cucurbita spp	Fruit	370.0	5855.0	0.51	*
Cucurbita pepo	Seed	10000.0	10743.0	-0.12	USDA's Ag Handbook 8 and sequelae)
Daucus carota	Root	290.0	2375.0	0.28	*
Dioscorea pentaphylla	Root	480.0	2585.0	0.42	*
Fagopyrum esculentum	Seed	--	5965.0	-1.06	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Ficus carica	Fruit	490.0	2346.0	-0.46	USDA's Ag Handbook 8 and sequelae)
Foeniculum vulgare	Fruit	9000.0	9873.0	1.61	*
Foeniculum vulgare	Seed	9000.0	9873.0	-0.29	USDA's Ag Handbook 8 and sequelae)
Fragaria spp	Fruit	190.0	1898.0	-0.58	USDA's Ag Handbook 8 and sequelae)
Ginkgo biloba	Seed	3470.0	9475.0	-0.37	USDA's Ag Handbook 8 and sequelae)
Glechoma hederacea	Plant	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Glycine max	Shoot	--	--		*
Glycine max	Seed	21350.0	23344.0	2.36	USDA's Ag Handbook 8 and sequelae)
Harpagophytum procumbens	Root	--	--		*
Helianthus annuus	Seed	11820.0	12500.0	0.23	*
Helianthus tuberosus	Tuber	--	2573.0	-0.93	Izadoost, M. & Robinson, T., Synergism & antagonism in the pharmacology of alkaloidal plants, pp 137-58 in Craker, L. & Simon, J., eds., Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture & Pharmacology, v. 2, 1987, 255pp.
Hordeum vulgare	Root	57.0	219.0	-1.16	*
Humulus lupulus	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Hypericum perforatum	Plant	--	--		*
Ipomoea batatas	Root	710.0	2840.0	0.59	*
Ipomoea aquatica	Leaf	880.0	11685.0	0.06	*
Juglans regia	Seed	5530.0	5740.0	-1.1	USDA's Ag Handbook 8 and sequelae)
Juglans cinerea	Seed	12360.0	12787.0	0.29	*
Juglans nigra	Seed	9370.0	9800.0	-0.3	USDA's Ag Handbook 8 and sequelae)
Lablab purpureus	Seed	1070.0	12822.0	0.29	*
Lactuca sativa	Leaf	480.0	8000.0	-0.47	*
Lens culinaris	Sprout Seedling	3560.0	11865.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Lens culinaris	Seed	11720.0	13200.0	0.37	USDA's Ag Handbook 8 and sequelae)
Lentinus edodes	Fruit	--	--		*
Lepidium meyenii	Root	--	50.0	-1.27	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Linum usitatissimum	Seed	--	0.191	-2.23	*

<i>Lippia javanica</i>	Plant	--	--		Neidlein, R., Staehle, R. 1974. Constituents of <i>Lippia javanica</i> . III. Deutsche Apot. Ziiit., 114: 1588.
<i>Lupinus albus</i>	Seed	14760.0	16480.0	1.01	*
<i>Lycium barbarum</i>	Fruit	--	6500.0	0.68	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Lycopersicon esculentum</i>	Fruit	170.0	2810.0	-0.33	*
<i>Lycopersicon esculentum</i>	Root	--	541.0	-0.94	*
<i>Lycopodium clavatum</i>	Pollen Or Spore	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
<i>Macadamia spp</i>	Seed	3960.0	4075.0	-1.43	USDA's Ag Handbook 8 and sequelae)
<i>Malus domestica</i>	Plant	20.0	435.0	-1.05	*
<i>Mangifera indica</i>	Fruit	180.0	2000.0	-0.55	*
<i>Manihot esculenta</i>	Root	760.0	2415.0	0.31	*
<i>Melia azedarach</i>	Seed	--	--		*
<i>Mentha x piperita</i>	Leaf	1540.0	7215.0	-0.58	USDA's Ag Handbook 8 and sequelae)
<i>Mentha spicata</i>	Leaf	1350.0	9345.0	-0.28	USDA's Ag Handbook 8 and sequelae)
<i>Momordica charantia</i>	Fruit	--	--		Jim Duke's personal files.
<i>Moringa oleifera</i>	Shoot	4510.0	21135.0	1.43	USDA's Ag Handbook 8 and sequelae)
<i>Morus alba</i>	Leaf	--	--		*
<i>Mucuna pruriens</i>	Seed	9225.0	19555.0	1.61	*
<i>Murraya sp</i>	Fruit	50.0	1440.0	-0.7	*
<i>Musa x paradisiaca</i>	Fruit	400.0	1554.0	-0.67	USDA's Ag Handbook 8 and sequelae)
<i>Myrciaria dubia</i>	Fruit	--	--		Jim Duke's personal files.
<i>Nasturtium officinale</i>	Herb	960.0	19200.0	1.0	USDA's Ag Handbook 8 and sequelae)
<i>Nelumbo nucifera</i>	Seed	3440.0	10424.0	-0.18	*
<i>Nelumbo nucifera</i>	Rhizome	1360.0	6500.0	1.0	*
<i>Nigella sativa</i>	Seed	11350.0	14520.0	0.63	*
<i>Ocimum basilicum</i>	Leaf	--	5880.0	-0.78	USDA's Ag Handbook 8 and sequelae)
<i>Oenothera biennis</i>	Seed	5900.0	6297.0	-0.99	*
<i>Opuntia ficus-indica</i>	Bud	--	3995.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
<i>Opuntia ficus-indica</i>	Seed	--	10500.0	-0.16	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
<i>Pachyrhizus erosus</i>	Tuber	470.0	4330.0	-0.59	*
<i>Panax ginseng</i>	Leaf	--	--		*
<i>Panax ginseng</i>	Root	--	--		*
<i>Panax quinquefolius</i>	Plant	175.0	1120.0	-0.93	*
<i>Papaver somniferum</i>	Seed	10620.0	11392.0	0.01	*
<i>Papaver bracteatum</i>	Seed	6800.0	8400.0	-0.58	*
<i>Passiflora incarnata</i>	Plant	--	--		*

<i>Perideridia gairdneri</i>	Root	--	5524.0	2.38	Izadoost, M. & Robinson, T., Synergism & antagonism in the pharmacology of alkaloidal plants, pp 137-58 in Craker, L. & Simon, J., eds., Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture & Pharmacology, v. 2, 1987, 255pp.
<i>Persea americana</i>	Fruit	620.0	2993.0	-0.28	*
<i>Phaseolus vulgaris</i>	Seed	9160.0	10294.0	-0.2	USDA's Ag Handbook 8 and sequelae)
<i>Phaseolus vulgaris</i>	Fruit	680.0	6989.0	0.82	USDA's Ag Handbook 8 and sequelae)
<i>Phaseolus vulgaris</i>	Sprout Seedling	1690.0	18172.0	1.0	USDA's Ag Handbook 8 and sequelae)
<i>Phaseolus lunatus</i>	Seed	1020.0	10855.0	-0.09	*
<i>Phoenix dactylifera</i>	Fruit	120.0	1590.0	-0.66	*
<i>Phyllanthus emblica</i>	Fruit	652.0	3225.0	-0.21	*
<i>Pinus pinea</i>	Seed	12900.0	13900.0	0.5	*
<i>Pinus edulis</i>	Seed	6220.0	6610.0	-0.93	USDA's Ag Handbook 8 and sequelae)
<i>Pistacia vera</i>	Seed	9470.0	9851.0	-0.29	*
<i>Pisum sativum</i>	Seed	1730.0	8183.0	-0.62	*
<i>Pisum sativum</i>	Root	--	575.0	-0.92	*
<i>Pisum sativum</i>	Shoot	--	23.0	-0.71	*
<i>Pisum sativum</i>	Fruit	630.0	6231.0	0.61	*
<i>Portulaca oleracea</i>	Herb	540.0	13200.0	-1.0	*
<i>Prosopis glandulosa</i>	Leaf	--	--		Carman, N. J., Dossaji, S. F., Mabry, T. J. 1974. A Populational Survey of Amino Acids in Prosopis Species from North and South America. Biochem. Syst. Ecol. 2: 73.
<i>Prunus domestica</i>	Fruit	340.0	2297.0	-0.47	USDA's Ag Handbook 8 and sequelae)
<i>Prunus persica</i>	Fruit	290.0	2349.0	-0.46	*
<i>Prunus cerasus</i>	Fruit	--	--		*
<i>Prunus dulcis</i>	Seed	12550.0	13127.0	0.35	USDA's Ag Handbook 8 and sequelae)
<i>Prunus armeniaca</i>	Fruit	1010.0	7400.0	0.93	USDA's Ag Handbook 8 and sequelae)
<i>Psidium cattleianum</i>	Fruit	180.0	930.0	-0.84	*
<i>Psidium guajava</i>	Fruit	250.0	1800.0	-0.61	USDA's Ag Handbook 8 and sequelae)
<i>Psophocarpus tetragonolobus</i>	Seed	19240.0	20991.0	1.9	*
<i>Psophocarpus tetragonolobus</i>	Leaf	1680.0	7257.0	-0.58	*
<i>Psophocarpus tetragonolobus</i>	Tuber	6790.0	15939.0	1.66	*
<i>Psoralea esculenta</i>	Root	--	1266.0	-0.46	Izadoost, M. & Robinson, T., Synergism & antagonism in the pharmacology of alkaloidal plants, pp 137-58 in Craker, L. & Simon, J., eds., Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture & Pharmacology, v. 2, 1987, 255pp.
<i>Punica granatum</i>	Fruit	--	--		*
<i>Pyrus communis</i>	Fruit	110.0	679.0	-0.91	*
<i>Raphanus sativus</i>	Root	180.0	3490.0	1.03	*
<i>Rehmannia glutinosa</i>	Root	3000.0	4000.0	1.37	*
<i>Ribes nigrum</i>	Fruit Juice	--	98.0		*

Rosa damascena	Pollen Or Spore	--	--		*
Rosmarinus officinalis	Leaf	1360.0	4220.0	-1.02	USDA's Ag Handbook 8 and sequelae)
Sambucus canadensis	Fruit	250.0	1238.0	-0.76	USDA's Ag Handbook 8 and sequelae)
Santalum album	Fruit	--	--		*
Scutellaria baicalensis	Root	--	--		*
Secale cereale	Seed	14910.0	16745.0	1.06	USDA's Ag Handbook 8 and sequelae)
Sechium edule	Fruit	480.0	6855.0	0.78	*
Senna obtusifolia	Seed	--	5360.0	-1.17	*
Sesamum indicum	Seed	8100.0	14277.0	0.58	*
Silybum marianum	Tissue Culture	--	--		*
Sinapis alba	Seed	19440.0	20800.0	1.86	*
Solanum tuberosum	Tuber	740.0	6700.0	-0.13	*
Solanum melongena	Fruit	460.0	5700.0	0.46	*
Spinacia oleracea	Plant	1120.0	13301.0	1.2	USDA's Ag Handbook 8 and sequelae)
Tamarindus indica	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Terminalia chebula	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Theobroma cacao	Seed	--	7200.0	-0.81	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Trigonella foenum-graecum	Seed	11980.0	17800.0	1.27	*
Triticum aestivum	Seed	17526.0	20447.0	1.79	*
Triticum aestivum	Root	--	173.0	-1.19	*
Triticum aestivum	Shoot	--	12.0	-0.71	*
Urtica dioica	Leaf	--	--		Jim Duke's personal files.
Vaccinium corymbosum	Fruit	250.0	1624.0	-0.65	*
Valerianella locusta	Plant	780.0	10830.0	0.77	*
Vicia faba	Seed	2520.0	13265.0	0.38	USDA's Ag Handbook 8 and sequelae)
Vigna unguiculata	Seed	--	14050.0	0.53	*
Vigna angularis	Seed	8740.0	10097.0	-0.24	*
Vigna unguiculata	Seed	--	14050.0	0.53	*
Vigna radiata	Seed	10950.0	12090.0	0.15	USDA's Ag Handbook 8 and sequelae)
Vitis vinifera	Fruit	220.0	1132.0	-0.79	USDA's Ag Handbook 8 and sequelae)
Zea mays	Root	--	69.0	-1.26	*
Zea mays	Shoot	--	11.0	-0.71	*
Zea mays	Seed	2920.0	12147.0	0.16	*
Zingiber officinale	Root	410.0	2376.0	0.28	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Rhizome	410.0	2376.0	-1.0	*