

List of Plants



Chemid

METHIONINE

*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	210.0	2100.0	1.41	USDA's Ag Handbook 8 and sequelae)
Acacia farnesiana	Seed	175.0	200.0	-1.06	Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar.
Acacia farnesiana	Leaf	700.0	3860.0	0.64	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Albizia lebbek	Seed	--	--		Wealth of India.
Allium sativum var. sativum	Bulb	0.1	9900.0	1.0	*
Allium sativum var. sativum	Leaf	--	--		*
Allium cepa	Bulb	100.0	1090.0	-1.0	*
Allium schoenoprasum	Leaf	300.0	3850.0	0.63	USDA's Ag Handbook 8 and sequelae)
Allium ampeloprasum	Plant	--	--		*
Alpinia galanga	Leaf	--	--		*
Amaranthus sp.	Leaf	360.0	4331.0	1.03	*
Anacardium occidentale	Seed	2740.0	2787.0	-0.39	*
Ananas comosus	Fruit	110.0	815.0	-0.18	USDA's Ag Handbook 8 and sequelae)
Anastatica hierochuntica	Plant	--	--		*
Anethum graveolens	Fruit	1430.0	1549.0	0.73	*
Anethum graveolens	Seed	1430.0	1549.0	-0.71	USDA's Ag Handbook 8 and sequelae)
Angelica sinensis	Root	--	--		Jim Duke's personal files.
Annona reticulata	Fruit	40.0	140.0	-1.01	*
Annona muricata	Fruit	70.0	370.0	-0.72	*
Annona squamosa	Fruit	70.0	260.0	-0.86	*
Apium graveolens	Pt	50.0	1120.0		USDA's Ag Handbook 8 and sequelae)
Arachis hypogaea	Seed	2630.0	3430.0	-0.23	*
Arctium lappa	Root	90.0	450.0	-1.09	USDA's Ag Handbook 8 and sequelae)
Artocarpus altilis	Seed	960.0	2195.0	-0.55	USDA's Ag Handbook 8 and sequelae)
Artocarpus altilis	Fruit	100.0	340.0	-0.76	*

Asimina triloba	Fruit	70.0	836.0	-0.15	*
Asparagus officinalis	Shoot	290.0	3742.0	-1.0	*
Avena sativa	Plant	--	2000.0	0.01	Jim Duke's personal files.*
Avena sativa	Seed	1000.0	4000.0	-0.08	Jim Duke's personal files.*
Averrhoa carambola	Fruit	110.0	1210.0	0.31	USDA's Ag Handbook 8 and sequelae)
Basella alba	Leaf	190.0	2755.0	-0.28	*
Benincasa hispida	Fruit	30.0	770.0	-0.23	*
Bertholletia excelsa	Seed	10140.0	10346.0	1.56	*
Beta vulgaris	Root	170.0	1341.0	0.45	USDA's Ag Handbook 8 and sequelae)
Bixa orellana	Seed	1280.0	1660.0	-0.69	*
Brassica rapa	Leaf	90.0	1923.0	-0.97	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea	Stem	130.0	1445.0		*
Brassica oleracea var. gemmifera	Leaf	320.0	2285.0	-0.67	USDA's Ag Handbook 8 and sequelae)
Brassica napus var. napobrassica	Root	100.0	965.0	-0.2	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea var. sabellica l.	Leaf	320.0	2060.0	-0.85	*
Brassica oleracea var. viridis l.	Leaf	210.0	3442.0	0.3	*
Brassica oleracea var. botrytis l.	Leaf	340.0	3652.0	0.47	*
Brassica chinensis	Leaf	90.0	1923.0	-0.97	*
Brassica rapa	Root	110.0	1350.0	0.47	*
Brassica oleracea var. italica	Leaf	340.0	3652.0	0.47	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea var. botrytis l.	Flower	280.0	3615.0		*
Brassica oleracea var. capitata l.	Leaf	120.0	1604.0	-1.23	USDA's Ag Handbook 8 and sequelae)
Brassica nigra	Leaf	230.0	3387.0	0.25	USDA's Ag Handbook 8 and sequelae)
Cajanus cajan	Seed	1860.0	2720.0	-0.41	*
Calathea allouia	Root	1415.0	1560.0	0.83	*
Capsella bursa-pastoris	Plant	--	--		*
Capsicum frutescens	Fruit	240.0	1958.0	1.23	USDA's Ag Handbook 8 and sequelae)
Capsicum annuum	Fruit	100.0	1364.0	0.5	USDA's Ag Handbook 8 and sequelae)
Carica papaya	Fruit	10.0	179.0	-0.96	*
Carum carvi	Seed	3610.0	4005.0	-0.08	Revised USDA data received 1993.
Castanea mollissima	Seed	1014.0	1804.0	-0.65	*
Castanea dentata	Seed	893.0	1589.0	-0.7	*
Castanea sativa	Seed	468.0	1028.0	-0.85	*

<i>Ceratonia siliqua</i>	Seed	--	4700.0	0.1	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<i>Chenopodium album</i>	Leaf	490.0	3121.0	0.03	*
<i>Chrysophyllum cainito</i>	Fruit	20.0	60.0	-1.11	Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981.
<i>Cicer arietinum</i>	Seed	2320.0	2860.0	-0.38	*
<i>Cichorium intybus</i>	Leaf	50.0	1224.0	-1.55	USDA's Ag Handbook 8 and sequelae)
<i>Cichorium endivia</i>	Leaf	140.0	2254.0	-0.69	*
<i>Citrullus lanatus</i>	Seed	--	5742.0	0.37	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>	Fruit	--	707.0	-0.31	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Citrus paradisi</i>	Fruit	3.0	222.0	-0.91	*
<i>Citrus aurantiifolia</i>	Fruit	20.0	170.0	-0.97	USDA's Ag Handbook 8 and sequelae)
<i>Citrus sinensis</i>	Fruit	200.0	1510.0	0.68	USDA's Ag Handbook 8 and sequelae)
<i>Citrus reticulata</i>	Fruit	130.0	1048.0	0.11	USDA's Ag Handbook 8 and sequelae)
<i>Cnidioscolus chayamansa</i>	Leaf	745.0	3720.0	0.53	*
<i>Cocos nucifera</i>	Leaf	--	--		Jim Duke's personal files.
<i>Cocos nucifera</i>	Seed	620.0	1170.0	-0.81	USDA's Ag Handbook 8 and sequelae)
<i>Cocos nucifera</i>	Endosperm	--	--		Jim Duke's personal files.
<i>Coffea arabica</i>	Seed	--	--		*
<i>Colocasia esculenta</i>	Leaf	790.0	5510.0	2.01	*
<i>Colocasia esculenta</i>	Root	200.0	680.0	-0.69	*
<i>Corchorus olitorius</i>	Leaf	460.0	5290.0	1.83	*
<i>Coriandrum sativum</i>	Leaf	--	--		*
<i>Crocus sativus</i>	Bulb	--	--		*
<i>Cryptotaenia japonica</i>	Root	--	--		*
<i>Cucumis sativus</i>	Fruit	40.0	1012.0	0.07	*
<i>Cucurbita</i> spp	Fruit	170.0	2690.0	2.13	*
<i>Cucurbita pepo</i>	Seed	5195.0	7885.0	0.92	*
<i>Cucurbita pepo</i>	Fruit	110.0	1310.0	0.43	*
<i>Cucurbita foetidissima</i>	Seed	2610.0	19000.0	3.79	*
<i>Daucus carota</i>	Root	70.0	575.0	-0.87	*
<i>Dioscorea pentaphylla</i>	Root	180.0	970.0	-0.19	*
<i>Fagopyrum esculentum</i>	Seed	--	--		*
<i>Ficus carica</i>	Fruit	60.0	287.0	-0.83	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Seed	3010.0	3302.0	-0.26	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Fruit	3010.0	3302.0	2.89	*
<i>Fragaria</i> spp	Fruit	10.0	119.0	-1.03	USDA's Ag Handbook 8 and sequelae)
<i>Ginkgo biloba</i>	Seed	550.0	1520.0	-0.72	USDA's Ag Handbook 8 and sequelae)
<i>Glycine max</i>	Shoot	--	--		*
<i>Glycine max</i>	Seed	4920.0	5380.0	0.28	USDA's Ag Handbook 8 and sequelae)

Helianthus tuberosus	Tuber	--	858.0	-0.92	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.
Helianthus annuus	Seed	4940.0	20500.0	4.18	*
Hordeum vulgare	Seed	1000.0	4000.0	-0.08	Jim Duke's personal files.*
Ipomoea batatas	Root	230.0	1510.0	0.75	*
Ipomoea aquatica	Leaf	440.0	5845.0	2.29	*
Juglans nigra	Seed	4730.0	4945.0	0.16	USDA's Ag Handbook 8 and sequelae)
Juglans regia	Seed	2800.0	2905.0	-0.36	USDA's Ag Handbook 8 and sequelae)
Juglans cinerea	Seed	6111.0	6321.0	0.52	*
Lablab purpureus	Seed	140.0	2105.0	-0.57	*
Lactuca sativa	Leaf	160.0	2667.0	-0.35	*
Lagenaria siceraria	Fruit	40.0	900.0	-0.07	*
Lens culinaris	Sprout Seedling	1050.0	3500.0	-0.77	USDA's Ag Handbook 8 and sequelae)
Lentinus edodes	Fruit	--	--		*
Lepidium meyenii	Root	--	2800.0	2.98	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Linum usitatissimum	Seed	--	0.09	-1.11	*
Lupinus albus	Seed	2550.0	2850.0	-0.38	*
Lycopersicon esculentum	Fruit	16.0	1322.0	0.45	*
Macadamia spp	Seed	920.0	950.0	-0.87	USDA's Ag Handbook 8 and sequelae)
Malus domestica	Plant	20.0	124.0	-0.96	*
Mangifera indica	Fruit	50.0	550.0	-0.5	*
Manihot esculenta	Root	260.0	825.0	-0.44	*
Medicago sativa	Plant	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Melia azedarach	Seed	--	--		*
Melicoccus bijugatas	Fruit	--	--	-1.18	Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981.
Mentha x piperita	Leaf	530.0	2480.0	-0.5	USDA's Ag Handbook 8 and sequelae)
Mentha spicata	Leaf	460.0	3180.0	0.08	*
Moringa oleifera	Shoot	1230.0	5765.0	1.0	USDA's Ag Handbook 8 and sequelae)
Mucuna pruriens	Seed	1875.0	3975.0	-0.09	*
Murraya sp	Fruit	170.0	490.0	-0.58	*
Musa x paradisiaca	Fruit	170.0	490.0	-0.58	USDA's Ag Handbook 8 and sequelae)
Nasturtium officinale	Herb	200.0	4000.0	1.0	USDA's Ag Handbook 8 and sequelae)
Nelumbo nucifera	Seed	720.0	2182.0	-0.55	*
Nelumbo nucifera	Rhizome	220.0	1050.0	1.0	*
Nigella sativa	Seed	13100.0	16750.0	3.21	*

Ocimum basilicum	Leaf	--	2020.0	-0.89	USDA's Ag Handbook 8 and sequelae)
Oenothera biennis	Seed	5400.0	5763.0	0.37	*
Opuntia ficus-indica	Bud	--	1890.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Opuntia ficus-indica	Seed	--	4830.0	0.13	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Oryza sativa	Plant	--	--		*
Pachyrhizus erosus	Tuber	130.0	1200.0	-0.57	*
Panax ginseng	Root	--	--		*
Panax ginseng	Leaf	--	--		*
Panax quinquefolius	Plant	34.0	340.0	-0.85	*
Papaver somniferum	Seed	4700.0	5042.0	0.19	*
Papaver bracteatum	Seed	4500.0	5050.0	0.19	*
Perideridia gairdneri	Root	--	889.0	-0.33	Izidoost, 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.
Persea americana	Fruit	290.0	1438.0	0.59	*
Petroselinum crispum	Plant	150.0	1282.0	-0.36	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Phaseolus vulgaris	Seed	3250.0	3653.0	-0.17	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Fruit	220.0	2261.0	1.6	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Sprout Seedling	440.0	4731.0	1.41	USDA's Ag Handbook 8 and sequelae)
Phaseolus lunatus	Seed	680.0	3017.0	-0.34	*
Phaseolus acutifolius	Seed	2680.0	2920.0	-0.36	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Phoenix dactylifera	Fruit	5.0	2190.0	1.52	*
Phyllanthus emblica	Fruit	20.0	355.0	-0.74	*
Pinus pinea	Seed	4300.0	6050.0	0.45	*
Pinus edulis	Seed	2070.0	2200.0	-0.55	USDA's Ag Handbook 8 and sequelae)
Pistacia vera	Seed	3810.0	3963.0	-0.09	*
Pisum sativum	Fruit	110.0	1088.0	0.16	*
Pisum sativum	Seed	820.0	3879.0	-0.11	*
Portulaca oleracea	Herb	90.0	2814.0	-1.0	*
Pouteria campechiana	Fruit	130.0	330.0	-0.77	Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981.
Pouteria caimito	Fruit	--	1780.0	1.01	Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981.
Prunus armeniaca	Fruit	60.0	440.0	-0.64	USDA's Ag Handbook 8 and sequelae)
Prunus persica	Fruit	170.0	1377.0	0.52	*
Prunus domestica	Fruit	60.0	405.0	-0.68	USDA's Ag Handbook 8 and sequelae)
Psidium guajava	Plant	50.0	360.0	-0.84	*
Psidium cattleianum	Fruit	40.0	205.0	-0.93	*

<i>Psophocarpus tetragonolobus</i>	Tuber	1430.0	3357.0	1.67	*
<i>Psophocarpus tetragonolobus</i>	Seed	3560.0	3884.0	-0.11	*
<i>Psophocarpus tetragonolobus</i>	Leaf	640.0	2765.0	-0.27	*
<i>Psoralea esculenta</i>	Root	--	253.0	-1.43	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	50.0	309.0	-0.8	*
<i>Raphanus sativus</i>	Root	70.0	1355.0	0.48	*
<i>Rehmannia glutinosa</i>	Root	--	1000.0	-0.14	*
<i>Rosmarinus officinalis</i>	Leaf	470.0	1460.0	-1.35	USDA's Ag Handbook 8 and sequelae)
<i>Sambucus canadensis</i>	Fruit	140.0	693.0	-0.33	USDA's Ag Handbook 8 and sequelae)
<i>Scutellaria baicalensis</i>	Root	--	--		*
<i>Secale cereale</i>	Seed	2480.0	2785.0	-0.4	USDA's Ag Handbook 8 and sequelae)
<i>Sechium edule</i>	Fruit	10.0	145.0	-1.0	*
<i>Senna obtusifolia</i>	Seed	--	2270.0	-0.53	*
<i>Sesamum indicum</i>	Seed	3120.0	9413.0	1.32	*
<i>Sinapis alba</i>	Seed	4800.0	5136.0	0.21	*
<i>Solanum tuberosum</i>	Tuber	310.0	1568.0	-0.18	*
<i>Solanum melongena</i>	Fruit	60.0	1487.0	0.65	*
<i>Spinacia oleracea</i>	Leaf	--	--		*
<i>Spinacia oleracea</i>	Plant	530.0	6294.0	2.22	USDA's Ag Handbook 8 and sequelae)
<i>Stachys officinalis</i>	Shoot	--	--		*
<i>Tamarindus indica</i>	Fruit	140.0	204.0	-0.93	USDA's Ag Handbook 8 and sequelae)
<i>Thymus vulgaris</i>	Plant	1370.0	1980.0	-0.0	USDA's Ag Handbook 8 and sequelae)
<i>Trifolium pratense</i>	Plant	--	--		*
<i>Trigonella foenum-graecum</i>	Seed	3120.0	3720.0	-0.15	*
<i>Trigonella foenum-graecum</i>	Leaf	--	--		*
<i>Triticum aestivum</i>	Seed	1000.0	4000.0	-0.08	*
<i>Urtica dioica</i>	Leaf	--	--		Jim Duke's personal files.
<i>Vaccinium corymbosum</i>	Fruit	110.0	715.0	-0.3	*
<i>Valerianella locusta</i>	Plant	250.0	3470.0	0.77	*
<i>Vicia faba</i>	Seed	430.0	2265.0	-0.53	USDA's Ag Handbook 8 and sequelae)

Vigna unguiculata	Seed	420.0	3805.0	-0.13	USDA's Ag Handbook 8 and sequelae)
Vigna unguiculata	Fruit	400.0	3292.0	2.87	USDA's Ag Handbook 8 and sequelae)
Vigna angularis	Seed	2100.0	2426.0	-0.49	*
Vigna radiata	Sprout Seedling	340.0	3571.0	-0.64	USDA's Ag Handbook 8 and sequelae)
Vigna aconitifolia	Seed	2200.0	2436.0	-0.49	*
Vigna unguiculata	Seed	3460.0	3779.0	-0.14	USDA's Ag Handbook 8 and sequelae)
Vigna radiata	Seed	2860.0	3145.0	-0.3	USDA's Ag Handbook 8 and sequelae)
Vitis vinifera	Fruit	220.0	1132.0	0.21	USDA's Ag Handbook 8 and sequelae)
Zea mays	Pollen Or Spore	--	--		*
Zea mays	Seed	670.0	2787.0	-0.39	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Root	130.0	737.0	-0.59	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Rhizome	130.0	737.0	-1.0	*