

List of Plants



Chemid

ARGININE

*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	840.0	8450.0	1.1	*
Acacia farnesiana	Leaf	7360.0	39480.0	1.39	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Albizia lebeck	Seed	--	--		Wealth of India.
Allium schoenoprasum	Leaf	2020.0	25350.0	0.42	USDA's Ag Handbook 8 and sequelae)
Allium ampeloprasum	Plant	--	--		*
Allium sativum var. sativum	Bulb	81.0	30316.0	1.0	*
Allium cepa	Bulb	1580.0	17222.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Aloe vera	Leaf	--	78216.0	4.04	*
Alpinia galanga	Leaf	--	--		*
Amaranthus sp.	Leaf	1210.0	14556.0	-0.32	*
Anacardium occidentale	Seed	17410.0	17711.0	-0.29	*
Ananas comosus	Fruit	46.0	1333.0	-0.79	*
Anastatica hierochuntica	Fruit	--	--		*
Anethum graveolens	Fruit	12630.0	13678.0	2.5	*
Anethum graveolens	Seed	12630.0	13678.0	-0.46	USDA's Ag Handbook 8 and sequelae)
Angelica sinensis	Root	--	--		Jim Duke's personal files.
Annona squamosa	Fruit	--	--		*
Apium graveolens	Pt	200.0	4105.0		USDA's Ag Handbook 8 and sequelae)
Arachis hypogaea	Seed	31280.0	37022.0	0.52	*
Arctium lappa	Root	1050.0	5250.0	-0.28	USDA's Ag Handbook 8 and sequelae)
Armoracia rusticana	Root	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Artemisia dracunculus	Root	--	--		*
Artemisia dracunculus	Leaf	--	--		*
Artocarpus altilis	Seed	4940.0	11300.0	-0.56	USDA's Ag Handbook 8 and sequelae)
Asimina triloba	Fruit	240.0	2336.0	-0.53	*
Asparagus officinalis	Shoot	1430.0	18452.0	-1.0	*

<i>Astragalus membranaceus</i>	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Avena sativa</i>	Seed	3000.0	13000.0	-0.49	Jim Duke's personal files.*
<i>Averrhoa carambola</i>	Fruit	110.0	1210.0	-0.83	USDA's Ag Handbook 8 and sequelae)
<i>Basella alba</i>	Leaf	700.0	10145.0	-0.62	*
<i>Bertholletia excelsa</i>	Seed	23900.0	24727.0	0.0	*
<i>Beta vulgaris</i>	Root	380.0	2997.0	-0.39	USDA's Ag Handbook 8 and sequelae)
<i>Bixa orellana</i>	Seed	--	14260.0	-0.44	*
<i>Brassica oleracea</i>	Stem	1050.0	11667.0		*
<i>Brassica oleracea</i> var. <i>capitata</i> L.	Leaf	690.0	9225.0	-0.69	USDA's Ag Handbook 8 and sequelae)
<i>Brassica nigra</i>	Leaf	1810.0	26657.0	0.51	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>italica</i>	Leaf	1450.0	15573.0	-0.25	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>botrytis</i> L.	Flower	960.0	12400.0		*
<i>Brassica oleracea</i> var. <i>sabellica</i> L.	Leaf	1840.0	11840.0	-0.51	*
<i>Brassica oleracea</i> var. <i>gemmifera</i>	Leaf	2030.0	14494.0	-0.32	USDA's Ag Handbook 8 and sequelae)
<i>Brassica napus</i> var. <i>napobrassica</i>	Root	1480.0	14310.0	0.18	USDA's Ag Handbook 8 and sequelae)
<i>Brassica rapa</i>	Leaf	840.0	17951.0	-0.09	USDA's Ag Handbook 8 and sequelae)
<i>Brassica rapa</i>	Root	240.0	2950.0	-0.39	*
<i>Brassica oleracea</i> var. <i>viridis</i> L.	Leaf	800.0	13112.0	-0.42	*
<i>Brassica oleracea</i> var. <i>botrytis</i> L.	Leaf	1450.0	15573.0	-0.25	*
<i>Brassica chinensis</i>	Leaf	840.0	17951.0	-0.09	*
<i>Cajanus cajan</i>	Seed	11280.0	14530.0	-0.43	*
<i>Calathea allouia</i>	Root	3385.0	3720.0	-0.35	*
<i>Camellia sinensis</i>	Plant	--	--		*
<i>Canavalia ensiformis</i>	Seed	--	--		*
<i>Cannabis sativa</i>	Plant	--	--		Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of <i>Cannabis sativa</i> L. XVII. A Review of the Natural Constituents. <i>J Natural Products</i> , 432: 169-234.
<i>Capsella bursa-pastoris</i>	Plant	--	--		*
<i>Capsicum annuum</i>	Fruit	410.0	5592.0	0.34	USDA's Ag Handbook 8 and sequelae)
<i>Capsicum frutescens</i>	Fruit	960.0	7834.0	0.94	USDA's Ag Handbook 8 and sequelae)
<i>Carica papaya</i>	Fruit	100.0	895.0	-0.91	USDA's Ag Handbook 8 and sequelae)
<i>Carum carvi</i>	Seed	12520.0	13900.0	-0.45	Revised USDA data received 1993.
<i>Castanea dentata</i>	Seed	3808.0	6778.0	-0.76	*
<i>Castanea sativa</i>	Seed	1451.0	3192.0	-0.91	*

<i>Castanea mollissima</i>	Seed	4411.0	7852.0	-0.71	*
<i>Ceratonia siliqua</i>	Seed	--	55460.0	1.31	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
<i>Chenopodium album</i>	Plant	2530.0	16116.0	0.75	*
<i>Cicer arietinum</i>	Seed	11500.0	20560.0	-0.17	*
<i>Cichorium endivia</i>	Leaf	620.0	9984.0	-0.63	*
<i>Cichorium intybus</i>	Leaf	660.0	14892.0	-0.3	USDA's Ag Handbook 8 and sequelae)
<i>Citrullus lanatus</i>	Seed	--	46600.0	0.93	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	--	6949.0	0.7	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	470.0	760.0	-0.95	*
<i>Citrus sinensis</i>	Fruit	230.0	4908.0	0.16	*
<i>Citrus reticulata</i>	Fruit	440.0	3546.0	-0.2	USDA's Ag Handbook 8 and sequelae)
<i>Cnidioscolus chayamansa</i>	Leaf	6945.0	34720.0	1.06	*
<i>Coccinia grandis</i>	Flower	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<i>Cocos nucifera</i>	Leaf	--	--		Jim Duke's personal files.
<i>Cocos nucifera</i>	Seed	5460.0	10300.0	-0.61	USDA's Ag Handbook 8 and sequelae)
<i>Cocos nucifera</i>	Endosperm	--	--		Jim Duke's personal files.
<i>Colocasia esculenta</i>	Root	1030.0	3510.0	-0.36	*
<i>Colocasia esculenta</i>	Leaf	2200.0	15340.0	-0.27	*
<i>Corchorus olitorius</i>	Leaf	1830.0	20185.0	0.07	*
<i>Coriandrum sativum</i>	Fruit	--	--		*
<i>Coriandrum sativum</i>	Leaf	--	--		*
<i>Crocus sativus</i>	Bulb	--	--		*
<i>Cryptotaenia japonica</i>	Root	--	--		*
<i>Cryptotaenia japonica</i>	Shoot	--	--		*
<i>Cucumis sativus</i>	Fruit	340.0	8608.0	1.15	*
<i>Cucurbita pepo</i>	Fruit	370.0	6429.0	0.57	*
<i>Cucurbita foetidissima</i>	Seed	39900.0	143000.0	5.01	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
<i>Cucurbita spp</i>	Fruit	500.0	7910.0	0.96	*
<i>Cucurbita pepo</i>	Seed	40330.0	81280.0	2.4	*
<i>Daucus carota</i>	Root	430.0	3520.0	-0.36	*
<i>Dioscorea pentaphylla</i>	Root	1120.0	6035.0	-0.24	*
<i>Dryopteris marginalis</i>	Plant	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<i>Fagopyrum esculentum</i>	Seed	--	11910.0	-0.54	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
<i>Ficus carica</i>	Fruit	170.0	814.0	-0.93	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Seed	6800.0	7460.0	-0.73	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Fruit	6800.0	7460.0	0.84	*
<i>Fragaria spp</i>	Fruit	260.0	3084.0	-0.33	USDA's Ag Handbook 8 and sequelae)

Ginkgo biloba	Seed	4200.0	11475.0	-0.56	USDA's Ag Handbook 8 and sequelae)
Glycine max	Shoot	--	--		*
Glycine max	Seed	28310.0	30950.0	0.27	USDA's Ag Handbook 8 and sequelae)
Harpagophytum procumbens	Root	--	840.0	-0.5	*
Helianthus tuberosus	Tuber	--	11627.0	1.41	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	24030.0	82000.0	2.43	USDA's Ag Handbook 8 and sequelae)
Humulus lupulus	Fruit	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Ipomoea batatas	Root	520.0	2835.0	-0.4	*
Ipomoea aquatica	Leaf	1480.0	19655.0	0.03	*
Juglans nigra	Seed	36610.0	38280.0	0.58	USDA's Ag Handbook 8 and sequelae)
Juglans regia	Seed	--	--		USDA's Ag Handbook 8 and sequelae)
Juglans cinerea	Seed	48620.0	50300.0	1.09	*
Lablab purpureus	Seed	880.0	19365.0	-0.22	*
Lactuca sativa	Leaf	710.0	11833.0	-0.51	*
Lagenaria siceraria	Fruit	140.0	3140.0	-0.31	*
Larrea tridentata	Plant	--	3100.0	-1.44	*
Lens culinaris	Seed	21680.0	24400.0	-0.01	USDA's Ag Handbook 8 and sequelae)
Lens culinaris	Sprout Seedling	6110.0	20365.0	-0.79	USDA's Ag Handbook 8 and sequelae)
Lentinus edodes	Fruit	--	--		*
Lepidium meyenii	Root	--	9940.0	-0.04	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Linum usitatissimum	Seed	--	0.554	-1.04	*
Lippia javanica	Plant	--	--		Neidlein, R., Staehle, R. 1974. Constituents of Lippia javanica. III. Deutsche Apot. Ztit., 114: 1588.
Lupinus albus	Seed	38770.0	44400.0	0.84	*
Lycium barbarum	Fruit	--	1900.0	-0.64	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Lycopersicon esculentum	Fruit	1.0	3637.0	-0.18	*
Lycopodium clavatum	Pollen Or Spore	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Macadamia spp	Seed	8990.0	9250.0	-0.65	USDA's Ag Handbook 8 and sequelae)
Malus domestica	Fruit	60.0	373.0	-1.05	USDA's Ag Handbook 8 and sequelae)
Mangifera indica	Fruit	190.0	3400.0	-0.24	*
Manihot esculenta	Root	3140.0	9970.0	-0.04	*
Medicago sativa	Plant	--	--		*
Melia azedarach	Seed	--	--		*
Mentha x piperita	Plant	1730.0	8105.0	-0.6	USDA's Ag Handbook 8 and sequelae)
Mentha spicata	Essential Oil	--	--		*
Mentha spicata	Leaf	1510.0	10450.0	-0.6	USDA's Ag Handbook 8 and sequelae)
Momordica charantia	Seed	--	323.0	-1.03	Jim Duke's personal files.

Moringa oleifera	Shoot	5320.0	24930.0	1.0	USDA's Ag Handbook 8 and sequelae)
Mucuna pruriens	Seed	12350.0	26180.0	0.07	*
Murraya sp	Fruit	1080.0	3111.0	-0.32	*
Musa x paradisiaca	Fruit	1080.0	3111.0	-0.32	USDA's Ag Handbook 8 and sequelae)
Nasturtium officinale	Herb	1500.0	30000.0	1.0	USDA's Ag Handbook 8 and sequelae)
Nelumbo nucifera	Seed	3380.0	10242.0	-0.61	*
Nelumbo nucifera	Rhizome	880.0	4210.0	1.0	*
Nigella sativa	Seed	41500.0	53050.0	1.2	*
Ocimum basilicum	Leaf	--	6620.0	-0.86	USDA's Ag Handbook 8 and sequelae)
Oenothera biennis	Seed	14100.0	15048.0	-0.41	*
Opuntia ficus-indica	Bud	--	4955.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Opuntia ficus-indica	Seed	--	27100.0	0.1	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Pachyrhizus erosus	Tuber	720.0	6635.0	-0.99	*
Paeonia officinalis	Root	--	--		CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Panax ginseng	Leaf	--	--		*
Panax ginseng	Root	--	--		*
Panax quinquefolius	Plant	11530.0	17615.0	1.0	*
Papaver somniferum	Seed	19950.0	21401.0	-0.14	*
Papaver bracteatum	Seed	18300.0	21650.0	-0.13	*
Perideridia gairdneri	Root	--	8954.0	-0.09	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.
Persea americana	Fruit	470.0	2293.0	-0.54	*
Phaseolus vulgaris	Sprout Seedling	2280.0	24516.0	1.41	USDA's Ag Handbook 8 and sequelae)
Phaseolus lunatus	Seed	4580.0	15390.0	-0.39	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Seed	13370.0	15026.0	-0.41	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Fruit	730.0	7503.0	0.85	USDA's Ag Handbook 8 and sequelae)
Phoenix dactylifera	Fruit	620.0	2090.0	-0.59	*
Phyllanthus emblica	Fruit	176.0	871.0	-0.92	*
Pinellia ternata	Tuber	--	--		*
Pinus edulis	Seed	22510.0	23920.0	-0.03	USDA's Ag Handbook 8 and sequelae)
Pinus pinea	Seed	46680.0	71600.0	1.99	*
Pistacia vera	Seed	21860.0	22740.0	-0.08	*
Pisum sativum	Fruit	1340.0	13254.0	2.39	*
Pisum sativum	Seed	4280.0	20246.0	-0.19	*
Portulaca oleracea	Herb	520.0	10400.0	-1.0	*
Prunus persica	Fruit	180.0	1458.0	-0.76	*

<i>Prunus armeniaca</i>	Fruit	450.0	3300.0	-0.27	USDA's Ag Handbook 8 and sequelae)
<i>Prunus dulcis</i>	Seed	24950.0	26098.0	0.06	USDA's Ag Handbook 8 and sequelae)
<i>Prunus domestica</i>	Fruit	130.0	878.0	-0.92	USDA's Ag Handbook 8 and sequelae)
<i>Prunus cerasus</i>	Fruit	--	--		*
<i>Psidium guajava</i>	Fruit	210.0	1512.0	-0.75	USDA's Ag Handbook 8 and sequelae)
<i>Psidium cattleianum</i>	Fruit	150.0	775.0	-0.94	*
<i>Psophocarpus tetragonolobus</i>	Tuber	4120.0	9671.0	0.47	*
<i>Psophocarpus tetragonolobus</i>	Seed	18860.0	20576.0	-0.17	*
<i>Psophocarpus tetragonolobus</i>	Leaf	1780.0	7689.0	-0.79	*
<i>Psoralea esculenta</i>	Root	--	7976.0	-0.14	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>Pyrus communis</i>	Fruit	70.0	432.0	-1.03	*
<i>Raphanus sativus</i>	Plant	--	--		*
<i>Rehmannia glutinosa</i>	Root	42000.0	87000.0	3.81	*
<i>Ribes nigrum</i>	Fruit Juice	--	35.0		*
<i>Rosmarinus officinalis</i>	Plant	1530.0	4745.0	-1.16	USDA's Ag Handbook 8 and sequelae)
<i>Sambucus canadensis</i>	Fruit	470.0	2326.0	-0.53	USDA's Ag Handbook 8 and sequelae)
<i>Scutellaria baicalensis</i>	Root	--	--		*
<i>Secale cereale</i>	Seed	8130.0	9130.0	-0.66	USDA's Ag Handbook 8 and sequelae)
<i>Sechium edule</i>	Fruit	380.0	5430.0	0.3	*
<i>Senna obtusifolia</i>	Seed	--	10200.0	-0.61	*
<i>Sesamum indicum</i>	Seed	15800.0	39000.0	0.61	*
<i>Sinapis alba</i>	Seed	17500.0	18725.0	-0.25	*
<i>Solanum tuberosum</i>	Tuber	950.0	6850.0	-0.89	*
<i>Solanum melongena</i>	Fruit	610.0	7559.0	0.87	*
<i>Spinacia oleracea</i>	Leaf	--	--		*
<i>Spinacia oleracea</i>	Plant	1620.0	19239.0	1.28	USDA's Ag Handbook 8 and sequelae)
<i>Stachys officinalis</i>	Shoot	--	--		*
<i>Terminalia chebula</i>	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
<i>Theobroma cacao</i>	Seed	--	800.0	-1.01	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
<i>Trifolium pratense</i>	Plant	--	--		*
<i>Trigonella foenum-graecum</i>	Leaf	--	--		*

<i>Trigonella foenum-graecum</i>	Seed	22230.0	27115.0	0.1	*
<i>Triticum aestivum</i>	Seed	4000.0	12000.0	-0.54	*
<i>Urtica dioica</i>	Leaf	--	--		Jim Duke's personal files.
<i>Urtica dioica</i>	Plant	--	--		*
<i>Vaccinium corymbosum</i>	Fruit	340.0	2210.0	-0.56	*
<i>Valeriana officinalis</i>	Rhizome	--	--		*
<i>Valerianella locusta</i>	Plant	910.0	12640.0	0.17	*
<i>Vicia faba</i>	Seed	4630.0	24370.0	-0.01	USDA's Ag Handbook 8 and sequelae)
<i>Vigna radiata</i>	Sprout Seedling	1970.0	20693.0	-0.62	USDA's Ag Handbook 8 and sequelae)
<i>Vigna unguiculata</i>	Seed	16850.0	18401.0	-0.26	USDA's Ag Handbook 8 and sequelae)
<i>Vigna radiata</i>	Seed	16720.0	18383.0	-0.26	USDA's Ag Handbook 8 and sequelae)
<i>Vigna unguiculata</i>	Seed	2070.0	18500.0	-0.26	USDA's Ag Handbook 8 and sequelae)
<i>Vigna unguiculata</i>	Fruit	1960.0	16131.0	3.15	USDA's Ag Handbook 8 and sequelae)
<i>Vigna angularis</i>	Seed	12840.0	14834.0	-0.42	*
<i>Viscum album</i>	Juice	--	--		*
<i>Vitellaria paradoxa</i>	Seed	--	5985.0	-0.79	*
<i>Vitis vinifera</i>	Fruit	490.0	2520.0	-0.48	USDA's Ag Handbook 8 and sequelae)
<i>Zea mays</i>	Seed	1310.0	5450.0	-0.81	USDA's Ag Handbook 8 and sequelae)
<i>Zingiber officinale</i>	Root	430.0	2486.0	-0.41	USDA's Ag Handbook 8 and sequelae)
<i>Zingiber officinale</i>	Rhizome	430.0	2486.0	-1.0	*
<i>Zingiber officinale</i>	Tuber	--	--		*