

## Dr. Duke's Phytochemical and Ethnobotanical Databases

### List of Plants for SERINE

Plant	Part	Low PPM	High PPM	StdDev	Reference
Rehmannia glutinosa	Root	1000.0	9000.0	3.1735682832210954	--
Pisum sativum	Fruit	1250.0	12364.0	3.0789642744644996	--
Aloe vera	Leaf		23540.0	2.8994578607835177	--
Ceratonia siliqua	Seed		23500.0	2.4772155502783995	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Glycine max	Seed	21150.0	23125.0	2.405346608784236	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Fruit	990.0	10175.0	2.3061340030732844	USDA's Ag Handbook 8 and sequelae)
Foeniculum vulgare	Fruit	9000.0	9873.0	2.199512375864446	--
Lupinus albus	Seed	18690.0	20870.0	1.9731747072660002	--
Cucurbita foetidissima	Seed	12585.0	20180.0	1.8409358549167394	--
Cucurbita pepo	Seed	11480.0	19825.0	1.772899923635598	--
Psophocarpus tetragonolobus	Tuber	4640.0	10892.0	1.667447844953693	--
Acacia farnesiana	Leaf	3280.0	17600.0	1.5524961353748998	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Cucurbita spp	Fruit	480.0	7595.0	1.3952604991037385	--
Sechium edule	Fruit	510.0	7285.0	1.285814457929103	--
Ipomoea aquatica	Leaf	1220.0	16200.0	1.235030408847616	--
Juglans cinerea	Seed	16400.0	16967.0	1.2251627641947473	--
Phaseolus vulgaris	Sprout Seedling	2240.0	24086.0	1.180736904993277	USDA's Ag Handbook 8 and sequelae)
Allium schoenoprasum	Leaf	1260.0	15830.0	1.1511287525511196	USDA's Ag Handbook 8 and sequelae)
Mucuna pruriens	Seed	7650.0	16220.0	1.0819998327383737	--
Spinacia oleracea	Plant	1040.0	12351.0	1.0594826529274783	USDA's Ag Handbook 8 and sequelae)
Phaseolus lunatus	Seed	4270.0	15900.0	1.020671669330021	--
Capsicum frutescens	Fruit	800.0	6528.0	1.0185542864155581	USDA's Ag Handbook 8 and sequelae)
Allium sativum var. sativum	Bulb	5.0	4560.0	1.0	--
Nasturtium officinale	Herb	600.0	12000.0	1.0	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Moringa oleifera	Shoot	4140.0	19400.0	1.0	USDA's Ag Handbook 8 and sequelae)
Nelumbo nucifera	Rhizome	600.0	2870.0	1.0	--
Lepidium meyenii	Root		5040.0	0.9441788703333645	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Corchorus olitorius	Leaf	1820.0	14815.0	0.9209661008188389	--
Arachis hypogaea	Seed	12710.0	15362.0	0.917563694599728	--
Pinus pinea	Seed	10190.0	15300.0	0.9056813629393596	--
Cucurbita pepo	Fruit	440.0	6100.0	0.8674481392454163	--
Prunus armeniaca	Fruit	830.0	6080.0	0.8603871043309238	USDA's Ag Handbook 8 and sequelae)
Lens culinaris	Seed	12930.0	14560.0	0.7638599850575438	USDA's Ag Handbook 8 and sequelae)
Lablab purpureus	Seed	13150.0	14510.0	0.7542774595249887	--
Solanum melongena	Fruit	410.0	5576.0	0.6824490244857101	--
Pistacia vera	Seed	13510.0	14054.0	0.666884826668086	--
Sesamum indicum	Seed	6150.0	13751.0	0.6088147219408019	--
Citrullus lanatus	Seed		13700.0	0.5990405458975957	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Amaranthus sp.	Leaf	1110.0	13353.0	0.5894411778310612	--
Psophocarpus tetragonolobus	Seed	12350.0	13474.0	0.5557275304904465	--
Trigonella foenum-graecum	Seed	12150.0	13365.0	0.5348376248294764	--
Beta vulgaris	Root	540.0	4259.0	0.5044937361249509	USDA's Ag Handbook 8 and sequelae)
Phaseolus vulgaris	Seed	11750.0	13205.0	0.5041735431253	USDA's Ag Handbook 8 and sequelae)
Juglans nigra	Seed	12400.0	12965.0	0.45817742056903543	USDA's Ag Handbook 8 and sequelae)
Vicia faba	Seed	2460.0	12950.0	0.4553026629092689	USDA's Ag Handbook 8 and sequelae)
Vigna radiata	Seed	11760.0	12930.0	0.45146965269624684	USDA's Ag Handbook 8 and sequelae)
Chenopodium album	Leaf	2000.0	12740.0	0.4504365418587577	--
Raphanus sativus	Root	210.0	4070.0	0.3980910596007637	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Averrhoa carambola</i>	Fruit	430.0	4735.0	0.38553250633129615	USDA's Ag Handbook 8 and sequelae)
<i>Capsicum annuum</i>	Fruit	340.0	4638.0	0.351286486996007	--
<i>Abelmoschus esculentus</i>	Fruit	440.0	4510.0	0.30609586354325435	--
<i>Valerianella locusta</i>	Plant	630.0	8750.0	0.281506096403855	--
<i>Vigna unguiculata</i>	Seed		12030.0	0.2789841931102547	--
<i>Vigna unguiculata</i>	Seed		12030.0	0.2789841931102547	--
<i>Dioscorea pentaphylla</i>	Root	710.0	3825.0	0.260161664106447	--
<i>Sinapis alba</i>	Seed	10810.0	11567.0	0.19025000667879424	--
<i>Cajanus cajan</i>	Seed	9780.0	11500.0	0.17740942246517039	--
<i>Helianthus annuus</i>	Seed	10750.0	11400.0	0.15824437140006012	--
<i>Artocarpus altilis</i>	Seed	4960.0	11340.0	0.146745340760994	USDA's Ag Handbook 8 and sequelae)
<i>Cucumis sativus</i>	Fruit	160.0	4051.0	0.14404511225564912	--
<i>Vigna angularis</i>	Seed	9760.0	11275.0	0.13428805756867232	--
<i>Lycopersicon esculentum</i>	Fruit	57.0	3967.0	0.11438876561478017	--
<i>Brassica rapa</i>	Root	290.0	3565.0	0.11378761174513131	--
<i>Lens culinaris</i>	Sprout Seedling	4450.0	14835.0	0.08372002158534232	USDA's Ag Handbook 8 and sequelae)
<i>Cicer arietinum</i>	Seed	9730.0	11000.0	0.08158416713961882	USDA's Ag Handbook 8 and sequelae)
<i>Ipomoea batatas</i>	Root	850.0	3400.0	0.020896386208142517	--
<i>Calathea allouia</i>	Root	3085.0	3390.0	0.01526661496347653	--
<i>Brassica napus</i> var. <i>napobrassica</i>	Root	350.0	3385.0	0.012451729341143537	USDA's Ag Handbook 8 and sequelae)
<i>Asimina triloba</i>	Fruit	354.0	3666.0	0.008120190151666495	--
<i>Papaver somniferum</i>	Seed	9870.0	10588.0	0.002624156751364612	--
<i>Brassica oleracea</i> var. <i>italica</i>	Leaf	1000.0	10740.0	-0.003085924608790074	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>botrytis</i> l.	Leaf	1000.0	10740.0	-0.003085924608790074	--
<i>Carum carvi</i>	Seed	9460.0	10500.0	-0.014241088185932402	Revised USDA data received 1993.
<i>Brassica chinensis</i>	Leaf	480.0	10258.0	-0.1123848390274692	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Brassica rapa	Leaf	480.0	10258.0	-0.1123848390274692	USDA's Ag Handbook 8 and sequelae)
Cnidioscolus chayamansa	Leaf	2045.0	10230.0	-0.11873415355801487	--
Colocasia esculenta	Root	920.0	3135.0	-0.12829255177550616	--
Foeniculum vulgare	Seed	9000.0	9873.0	-0.13440595836417363	USDA's Ag Handbook 8 and sequelae)
Mangifera indica	Fruit	220.0	3150.0	-0.17405451064224267	--
Persea americana	Fruit	810.0	3148.0	-0.17476061413369193	--
Citrus paradisi	Fruit	150.0	3100.0	-0.19170709792847418	--
Solanum tuberosum	Tuber	90.0	5250.0	-0.20083549160250516	--
Prunus dulcis	Seed	9010.0	9424.0	-0.2204570376465186	USDA's Ag Handbook 8 and sequelae)
Daucus carota	Root	350.0	2865.0	-0.28029637538148783	--
Brassica oleracea var. capitata l.	Leaf	710.0	9493.0	-0.28585718245130637	USDA's Ag Handbook 8 and sequelae)
Fragaria spp	Fruit	230.0	2728.0	-0.3230423473380366	USDA's Ag Handbook 8 and sequelae)
Oenothera biennis	Seed	8300.0	8858.0	-0.3289312266750426	--
Papaver bracteatum	Seed	7400.0	8850.0	-0.3304644307602514	--
Theobroma cacao	Seed		8800.0	-0.3400469562928065	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Prunus persica	Fruit	320.0	2592.0	-0.37105738475658634	--
Anacardium occidentale	Seed	8490.0	8637.0	-0.3712859895289362	--
Pisum sativum	Seed	1810.0	8562.0	-0.3856597778277689	--
Perideridia gairdneri	Root		2667.0	-0.3917658460258744	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.
Brassica oleracea var. sabellica l.	Leaf	1390.0	8945.0	-0.4101223382634146	--
Mentha spicata	Leaf	1280.0	8860.0	-0.42939704308828536	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Root	450.0	2596.0	-0.4317372218630029	USDA's Ag Handbook 8 and sequelae)

Plant	Part	Low PPM	High PPM	StdDev	Reference
Citrus sinensis	Fruit	40.0	2410.0	-0.43531280247846904	--
Juglans regia	Seed	7820.0	8115.0	-0.47132755608881166	USDA's Ag Handbook 8 and sequelae)
Pachyrhizus erosus	Tuber	470.0	4330.0	-0.5054828984851184	--
Ginkgo biloba	Seed	2900.0	7935.0	-0.5058246480060101	USDA's Ag Handbook 8 and sequelae)
Manihot esculenta	Root	760.0	2415.0	-0.5336360813914572	--
Bertholletia excelsa	Seed	7460.0	7718.0	-0.5474128088172994	USDA's Ag Handbook 8 and sequelae)
Opuntia ficus-indica	Seed		7665.0	-0.5575702858818078	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Secale cereale	Seed	6810.0	7645.0	-0.5614032960948299	USDA's Ag Handbook 8 and sequelae)
Nelumbo nucifera	Seed	2520.0	7636.0	-0.5631281506906898	--
Basella alba	Leaf	570.0	8260.0	-0.5654537830285499	--
Senna obtusifolia	Seed		7590.0	-0.5719440741806404	--
Triticum aestivum	Seed	1000.0	7567.0	-0.5763520359256158	--
Brassica oleracea var. viridis l.	Leaf	500.0	8195.0	-0.5801932631887451	--
Phoenix dactylifera	Fruit	60.0	1960.0	-0.5941860880545526	--
Citrullus lanatus	Fruit		1885.0	-0.6206649689838999	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Ananas comosus	Fruit	250.0	1852.0	-0.6323156765928126	USDA's Ag Handbook 8 and sequelae)
Musa x paradisiaca	Fruit	410.0	1826.0	-0.6414950219816531	USDA's Ag Handbook 8 and sequelae)
Cichorium endivia	Leaf	490.0	7890.0	-0.6493554393250462	--
Citrus reticulata	Fruit	120.0	1773.0	-0.6602067645050584	--
Ficus carica	Fruit	370.0	1771.0	-0.6609128679965077	USDA's Ag Handbook 8 and sequelae)
Fagopyrum esculentum	Seed		7110.0	-0.6639363192931697	--
Psidium guajava	Fruit	240.0	1728.0	-0.6760940930626668	USDA's Ag Handbook 8 and sequelae)
Vitis vinifera	Fruit	320.0	1646.0	-0.7050443362120865	USDA's Ag Handbook 8 and sequelae)

Plant	Part	Low PPM	High PPM	StdDev	Reference
Lycium barbarum	Fruit		1400.0	-0.7918950656603455	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Zea mays	Seed	1530.0	6365.0	-0.8067159497282409	USDA's Ag Handbook 8 and sequelae)
Prunus domestica	Fruit	200.0	1351.0	-0.8091946012008524	USDA's Ag Handbook 8 and sequelae)
Carica papaya	Fruit	150.0	1343.0	-0.8120190151666494	USDA's Ag Handbook 8 and sequelae)
Vaccinium corymbosum	Fruit	200.0	1300.0	-0.8272002402328085	--
Psoralea esculenta	Root		1857.0	-0.8477773168438192	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.
Murraya sp	Fruit	410.0	1181.0	-0.8692133979740395	--
Mentha x piperita	Leaf	1460.0	6840.0	-0.887454734220509	USDA's Ag Handbook 8 and sequelae)
Helianthus tuberosus	Tuber		2954.0	-0.9611294548660699	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.
Lactuca sativa	Leaf	390.0	6500.0	-0.9645535535199923	--
Phyllanthus emblica	Fruit	183.0	905.0	-0.9666556797940374	--
Psidium cattleianum	Fruit	170.0	880.0	-0.9754819734371531	--
Psophocarpus tetragonolobus	Leaf	1490.0	6436.0	-0.9790662724469538	--
Pyrus communis	Fruit	140.0	865.0	-0.9807777496230227	--
Nigella sativa	Seed	4210.0	5385.0	-0.9945334501663213	--
Allium cepa	Bulb	350.0	3815.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Portulaca oleracea	Herb	450.0	8440.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Rhizome	450.0	2596.0	-1.0	--
Asparagus officinalis	Shoot	1160.0	14968.0	-1.0	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Pinus edulis</i>	Seed	4910.0	5220.0	-1.0261557844237532	USDA's Ag Handbook 8 and sequelae)
<i>Hordeum vulgare</i>	Seed		5000.0	-1.0683188967669957	Jim Duke's personal files.*
<i>Malus domestica</i>	Fruit	80.0	497.0	-1.1107007920496865	USDA's Ag Handbook 8 and sequelae)
<i>Ocimum basilicum</i>	Leaf		5610.0	-1.1663710510980512	USDA's Ag Handbook 8 and sequelae)
<i>Arctium lappa</i>	Root	250.0	1250.0	-1.1895044313950447	USDA's Ag Handbook 8 and sequelae)
<i>Avena sativa</i>	Seed		4000.0	-1.2599694074180983	Jim Duke's personal files.*
<i>Vigna radiata</i>	Sprout Seedling	330.0	3466.0	-1.2644569265786192	USDA's Ag Handbook 8 and sequelae)
<i>Castanea dentata</i>	Seed	2077.0	3697.0	-1.3180395121453823	--
<i>Macadamia spp</i>	Seed	3510.0	3610.0	-1.3347131065720281	USDA's Ag Handbook 8 and sequelae)
<i>Panax quinquefolius</i>	Plant	289.0	1240.0	-1.3409887493313337	--
<i>Castanea mollissima</i>	Seed	1820.0	3255.0	-1.4027490378531695	--
<i>Cocos nucifera</i>	Seed	1720.0	3245.0	-1.4046655429596806	USDA's Ag Handbook 8 and sequelae)
<i>Rosmarinus officinalis</i>	Leaf	1290.0	4000.0	-1.5314566366044275	USDA's Ag Handbook 8 and sequelae)
<i>Castanea sativa</i>	Seed	972.0	2139.0	-1.6166310077397998	--
<i>Harpagophytum procumbens</i>	Root		450.0	-1.6398861309683237	--
<i>Momordica charantia</i>	Seed		39.9	-2.018924594647529	Jim Duke's personal files.
<i>Linum usitatissimum</i>	Seed		0.248	-2.0265239206958663	--
<i>Artemisia dracunculus</i>	Leaf				--
<i>Allium ampeloprasum</i>	Plant				--
<i>Ribes nigrum</i>	Fruit Juice		60.0		--
<i>Valeriana officinalis</i>	Rhizome				--
<i>Santalum album</i>	Fruit				--
<i>Camellia sinensis</i>	Leaf				--
<i>Zingiber officinale</i>	Shoot				--
<i>Zingiber officinale</i>	Tuber				--
<i>Tilia sp.</i>	Flower				--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Apium graveolens	Shoot				--
Cryptotaenia japonica	Root				--
Cryptotaenia japonica	Shoot				--
Aesculus hippocastanum	Leaf				Jim Duke's personal files.
Trifolium pratense	Plant				--
Angelica sinensis	Root				Jim Duke's personal files.
Lentinus edodes	Fruit				--
Salvia officinalis	Plant				Stitt, Paul. Why George should eat broccoli.
Glycine max	Shoot				--
Melia azedarach	Seed				--
Alpinia galanga	Leaf				--
Coriandrum sativum	Fruit				--
Acacia senegal	Plant				Pakistan Encyclopedia Planta Medica. 1986.
Cocos nucifera	Endosperm				Jim Duke's personal files.
Cocos nucifera	Leaf				Jim Duke's personal files.
Crocus sativus	Bulb				--
Oryza sativa	Plant				--
Artemisia dracunculus	Root				--
Pinellia ternata	Tuber				--
Apium graveolens	Pt	200.0	4105.0		USDA's Ag Handbook 8 and sequelae)
Prunus cerasus	Fruit				--
Myrciaria dubia	Fruit				Jim Duke's personal files.
Bacopa monnieri	Plant				Wealth of India.
Coccinia grandis	Flower				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Daucus carota	Plant				--



Plant	Part	Low PPM	High PPM	StdDev	Reference
Borago officinalis	Sprout Seedling				Jim Duke's personal files.
Borago officinalis	Leaf				Jim Duke's personal files.
Brassica oleracea var. botrytis l.	Flower	1040.0	13440.0		--
Opuntia ficus-indica	Bud		3830.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Panax ginseng	Root				--
Panax ginseng	Leaf				--
Scutellaria baicalensis	Root				--
Canavalia ensiformis	Seed				--
Artemisia dracuncululus	Shoot				--
Humulus lupulus	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Urtica dioica	Leaf				Jim Duke's personal files.
Glycine max	Plant				--