

## Dr. Duke's Phytochemical and Ethnobotanical Databases

### List of Plants for SERINE

Plant	Part	Low PPM	High PPM	StdDev	Reference
Phaseolus vulgaris	Sprout Seedling	2240.0	24086.0	1.180736904993277	USDA's Ag Handbook 8 and sequelae)
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)
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	--
Moringa oleifera	Shoot	4140.0	19400.0	1.0	USDA's Ag Handbook 8 and sequelae)
Acacia farnesiana	Leaf	3280.0	17600.0	1.5524961353748998	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Juglans cinerea	Seed	16400.0	16967.0	1.2251627641947473	--
Mucuna pruriens	Seed	7650.0	16220.0	1.0819998327383737	--
Ipomoea aquatica	Leaf	1220.0	16200.0	1.235030408847616	--
Phaseolus lunatus	Seed	4270.0	15900.0	1.020671669330021	--
Allium schoenoprasum	Leaf	1260.0	15830.0	1.1511287525511196	USDA's Ag Handbook 8 and sequelae)
Arachis hypogaea	Seed	12710.0	15362.0	0.917563694599728	--
Pinus pinea	Seed	10190.0	15300.0	0.9056813629393596	--
Asparagus officinalis	Shoot	1160.0	14968.0	-1.0	--
Lens culinaris	Sprout Seedling	4450.0	14835.0	0.08372002158534232	USDA's Ag Handbook 8 and sequelae)
Corchorus olitorius	Leaf	1820.0	14815.0	0.9209661008188389	--
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	--
Pistacia vera	Seed	13510.0	14054.0	0.666884826668086	--
Sesamum indicum	Seed	6150.0	13751.0	0.6088147219408019	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
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.
Psophocarpus tetragonolobus	Seed	12350.0	13474.0	0.5557275304904465	--
Brassica oleracea var. botrytis l.	Flower	1040.0	13440.0		--
Trigonella foenum-graecum	Seed	12150.0	13365.0	0.5348376248294764	--
Amaranthus sp.	Leaf	1110.0	13353.0	0.5894411778310612	--
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	--
Pisum sativum	Fruit	1250.0	12364.0	3.0789642744644996	--
Spinacia oleracea	Plant	1040.0	12351.0	1.0594826529274783	USDA's Ag Handbook 8 and sequelae)
Vigna unguiculata	Seed		12030.0	0.2789841931102547	--
Vigna unguiculata	Seed		12030.0	0.2789841931102547	--
Nasturtium officinale	Herb	600.0	12000.0	1.0	--
Sinapis alba	Seed	10810.0	11567.0	0.19025000667879424	--
Cajanus cajan	Seed	9780.0	11500.0	0.17740942246517039	--
Helianthus annuus	Seed	10750.0	11400.0	0.15824437140006012	--
Artocarpus altilis	Seed	4960.0	11340.0	0.146745340760994	USDA's Ag Handbook 8 and sequelae)
Vigna angularis	Seed	9760.0	11275.0	0.13428805756867232	--
Cicer arietinum	Seed	9730.0	11000.0	0.08158416713961882	USDA's Ag Handbook 8 and sequelae)
Psophocarpus tetragonolobus	Tuber	4640.0	10892.0	1.667447844953693	--
Brassica oleracea var. italica	Leaf	1000.0	10740.0	-0.003085924608790074	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea var. botrytis l.	Leaf	1000.0	10740.0	-0.003085924608790074	--
Papaver somniferum	Seed	9870.0	10588.0	0.002624156751364612	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<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	--
<i>Brassica rapa</i>	Leaf	480.0	10258.0	-0.1123848390274692	USDA's Ag Handbook 8 and sequelae)
<i>Cnidioscolus chayamansa</i>	Leaf	2045.0	10230.0	-0.11873415355801487	--
<i>Phaseolus vulgaris</i>	Fruit	990.0	10175.0	2.3061340030732844	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Seed	9000.0	9873.0	-0.13440595836417363	USDA's Ag Handbook 8 and sequelae)
<i>Foeniculum vulgare</i>	Fruit	9000.0	9873.0	2.199512375864446	--
<i>Brassica oleracea</i> var. <i>capitata</i> l.	Leaf	710.0	9493.0	-0.28585718245130637	USDA's Ag Handbook 8 and sequelae)
<i>Prunus dulcis</i>	Seed	9010.0	9424.0	-0.2204570376465186	USDA's Ag Handbook 8 and sequelae)
<i>Rehmannia glutinosa</i>	Root	1000.0	9000.0	3.1735682832210954	--
<i>Brassica oleracea</i> var. <i>sabellica</i> l.	Leaf	1390.0	8945.0	-0.4101223382634146	--
<i>Mentha spicata</i>	Leaf	1280.0	8860.0	-0.42939704308828536	USDA's Ag Handbook 8 and sequelae)
<i>Oenothera biennis</i>	Seed	8300.0	8858.0	-0.3289312266750426	--
<i>Papaver bracteatum</i>	Seed	7400.0	8850.0	-0.3304644307602514	--
<i>Theobroma cacao</i>	Seed		8800.0	-0.3400469562928065	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
<i>Valerianella locusta</i>	Plant	630.0	8750.0	0.281506096403855	--
<i>Anacardium occidentale</i>	Seed	8490.0	8637.0	-0.3712859895289362	--
<i>Pisum sativum</i>	Seed	1810.0	8562.0	-0.3856597778277689	--
<i>Portulaca oleracea</i>	Herb	450.0	8440.0	-1.0	USDA's Ag Handbook 8 and sequelae)
<i>Basella alba</i>	Leaf	570.0	8260.0	-0.5654537830285499	--
<i>Brassica oleracea</i> var. <i>viridis</i> l.	Leaf	500.0	8195.0	-0.5801932631887451	--
<i>Juglans regia</i>	Seed	7820.0	8115.0	-0.47132755608881166	USDA's Ag Handbook 8 and sequelae)
<i>Ginkgo biloba</i>	Seed	2900.0	7935.0	-0.5058246480060101	USDA's Ag Handbook 8 and sequelae)
<i>Cichorium endivia</i>	Leaf	490.0	7890.0	-0.6493554393250462	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
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	--
Cucurbita spp	Fruit	480.0	7595.0	1.3952604991037385	--
Senna obtusifolia	Seed		7590.0	-0.5719440741806404	--
Triticum aestivum	Seed	1000.0	7567.0	-0.5763520359256158	--
Sechium edule	Fruit	510.0	7285.0	1.285814457929103	--
Fagopyrum esculentum	Seed		7110.0	-0.6639363192931697	--
Mentha x piperita	Leaf	1460.0	6840.0	-0.887454734220509	USDA's Ag Handbook 8 and sequelae)
Capsicum frutescens	Fruit	800.0	6528.0	1.0185542864155581	USDA's Ag Handbook 8 and sequelae)
Lactuca sativa	Leaf	390.0	6500.0	-0.9645535535199923	--
Psophocarpus tetragonolobus	Leaf	1490.0	6436.0	-0.9790662724469538	--
Zea mays	Seed	1530.0	6365.0	-0.8067159497282409	USDA's Ag Handbook 8 and sequelae)
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)
Ocimum basilicum	Leaf		5610.0	-1.1663710510980512	USDA's Ag Handbook 8 and sequelae)
Solanum melongena	Fruit	410.0	5576.0	0.6824490244857101	--
Nigella sativa	Seed	4210.0	5385.0	-0.9945334501663213	--
Solanum tuberosum	Tuber	90.0	5250.0	-0.20083549160250516	--
Pinus edulis	Seed	4910.0	5220.0	-1.0261557844237532	USDA's Ag Handbook 8 and sequelae)
Lepidium meyenii	Root		5040.0	0.9441788703333645	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Hordeum vulgare	Seed		5000.0	-1.0683188967669957	Jim Duke's personal files.*

Plant	Part	Low PPM	High PPM	StdDev	Reference
Averrhoa carambola	Fruit	430.0	4735.0	0.38553250633129615	USDA's Ag Handbook 8 and sequelae)
Capsicum annuum	Fruit	340.0	4638.0	0.351286486996007	--
Allium sativum var. sativum	Bulb	5.0	4560.0	1.0	--
Abelmoschus esculentus	Fruit	440.0	4510.0	0.30609586354325435	--
Pachyrhizus erosus	Tuber	470.0	4330.0	-0.5054828984851184	--
Beta vulgaris	Root	540.0	4259.0	0.5044937361249509	USDA's Ag Handbook 8 and sequelae)
Apium graveolens	Pt	200.0	4105.0		USDA's Ag Handbook 8 and sequelae)
Raphanus sativus	Root	210.0	4070.0	0.3980910596007637	--
Cucumis sativus	Fruit	160.0	4051.0	0.14404511225564912	--
Avena sativa	Seed		4000.0	-1.2599694074180983	Jim Duke's personal files.*
Rosmarinus officinalis	Leaf	1290.0	4000.0	-1.5314566366044275	USDA's Ag Handbook 8 and sequelae)
Lycopersicon esculentum	Fruit	57.0	3967.0	0.11438876561478017	--
Opuntia ficus-indica	Bud		3830.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Dioscorea pentaphylla	Root	710.0	3825.0	0.260161664106447	--
Allium cepa	Bulb	350.0	3815.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Castanea dentata	Seed	2077.0	3697.0	-1.3180395121453823	--
Asimina triloba	Fruit	354.0	3666.0	0.008120190151666495	--
Macadamia spp	Seed	3510.0	3610.0	-1.3347131065720281	USDA's Ag Handbook 8 and sequelae)
Brassica rapa	Root	290.0	3565.0	0.11378761174513131	--
Vigna radiata	Sprout Seedling	330.0	3466.0	-1.2644569265786192	USDA's Ag Handbook 8 and sequelae)
Ipomoea batatas	Root	850.0	3400.0	0.020896386208142517	--
Calathea allouia	Root	3085.0	3390.0	0.01526661496347653	--
Brassica napus var. napobrassica	Root	350.0	3385.0	0.012451729341143537	USDA's Ag Handbook 8 and sequelae)
Castanea mollisima	Seed	1820.0	3255.0	-1.4027490378531695	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Cocos nucifera	Seed	1720.0	3245.0	-1.4046655429596806	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	--
Colocasia esculenta	Root	920.0	3135.0	-0.12829255177550616	--
Citrus paradisi	Fruit	150.0	3100.0	-0.19170709792847418	--
Helianthus tuberosus	Tuber		2954.0	-0.9611294548660699	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.
Nelumbo nucifera	Rhizome	600.0	2870.0	1.0	--
Daucus carota	Root	350.0	2865.0	-0.28029637538148783	--
Fragaria spp	Fruit	230.0	2728.0	-0.3230423473380366	USDA's Ag Handbook 8 and sequelae)
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.
Zingiber officinale	Root	450.0	2596.0	-0.4317372218630029	USDA's Ag Handbook 8 and sequelae)
Zingiber officinale	Rhizome	450.0	2596.0	-1.0	--
Prunus persica	Fruit	320.0	2592.0	-0.37105738475658634	--
Manihot esculenta	Root	760.0	2415.0	-0.5336360813914572	--
Citrus sinensis	Fruit	40.0	2410.0	-0.43531280247846904	--
Castanea sativa	Seed	972.0	2139.0	-1.6166310077397998	--
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.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Psoralea esculenta	Root		1857.0	-0.8477773168438192	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.
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)
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)
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)
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.
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	--
Arctium lappa	Root	250.0	1250.0	-1.1895044313950447	USDA's Ag Handbook 8 and sequelae)
Panax quinquefolius	Plant	289.0	1240.0	-1.3409887493313337	--
Murraya sp	Fruit	410.0	1181.0	-0.8692133979740395	--
Phyllanthus emblica	Fruit	183.0	905.0	-0.9666556797940374	--
Psidium cattleianum	Fruit	170.0	880.0	-0.9754819734371531	--
Pyrus communis	Fruit	140.0	865.0	-0.9807777496230227	--
Malus domestica	Fruit	80.0	497.0	-1.1107007920496865	USDA's Ag Handbook 8 and sequelae)
Harpagophytum procumbens	Root		450.0	-1.6398861309683237	--
Ribes nigrum	Fruit Juice		60.0		--
Momordica charantia	Seed		39.9	-2.018924594647529	Jim Duke's personal files.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Linum usitatissimum	Seed		0.248	-2.0265239206958663	--
Artemisia dracunculus	Leaf				--
Allium ampeloprasum	Plant				--
Valeriana officinalis	Rhizome				--
Santalum album	Fruit				--
Camellia sinensis	Leaf				--
Zingiber officinale	Shoot				--
Zingiber officinale	Tuber				--
Tilia sp.	Flower				--
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				--



Plant	Part	Low PPM	High PPM	StdDev	Reference
Pinellia ternata	Tuber				--
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				--
Borago officinalis	Sprout Seedling				Jim Duke's personal files.
Borago officinalis	Leaf				Jim Duke's personal files.
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				--