

**Dr. Duke's Phytochemical and Ethnobotanical Databases**

**List of Plants for PROLINE**

Plant	Part	Low PPM	High PPM	StdDev	Reference
Santalum album	Fruit				--
Rosa damascena	Pollen Or Spore				--
Allium sativum var. sativum	Leaf				--
Silybum marianum	Tissue Culture				--
Passiflora incarnata	Plant				--
Morus alba	Leaf				--
Angelica sinensis	Root				Jim Duke's personal files.
Anastatica hierochuntica	Plant				--
Lentinus edodes	Fruit				--
Melia azedarach	Seed				--
Glycine max	Shoot				--
Coriandrum sativum	Fruit				--
Alpinia galanga	Leaf				--
Cocos nucifera	Leaf				Jim Duke's personal files.
Astragalus membranaceus	Root				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Crocus sativus	Bulb				--
Capsella bursa-pastoris	Plant				--
Terminalia chebula	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Prunus cerasus	Fruit				--
Prosopis glandulosa	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.
Myrciaria dubia	Fruit				Jim Duke's personal files.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Tamarindus indica	Fruit				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Panax ginseng	Root				--
Panax ginseng	Leaf				--
Lycopodium clavatum	Pollen Or Spore				ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Glechoma hederacea	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Lippia javanica	Plant				Neidlein, R., Staehle, R. 1974. Constituents of Lippia javanica. III. Deutsche Apot. Ztit., 114: 1588.
Punica granatum	Fruit				--
Artemisia dracunculus	Leaf				--
Scutellaria baicalensis	Root				--
Momordica charantia	Fruit				Jim Duke's personal files.
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				--
Urtica dioica	Leaf				Jim Duke's personal files.
Camellia sinensis	Leaf				--
Allium ampeloprasum	Plant				--
Artemisia dracunculus	Root				--
Harpagophytum procumbens	Root				--
Linum usitatissimum	Seed		0.191	-2.226996902840283	--
Avena sativa	Shoot		1.3	-0.7081532669989642	--
Avena sativa	Root		2.4	-1.2997594393680416	--
Zea mays	Shoot		11.0	-0.7071737762939713	--
Triticum aestivum	Shoot		12.0	-0.7070727978707761	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Pisum sativum	Shoot		23.0	-0.7059620352156295	--
Lepidium meyenii	Root		50.0	-1.2680029902432413	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.
Zea mays	Root		69.0	-1.2553270966850225	--
Ribes nigrum	Fruit Juice		98.0		--
Triticum aestivum	Root		173.0	-1.1859432582610887	--
Hordeum vulgare	Root	57.0	219.0	-1.1552542528043488	--
Malus domestica	Plant	20.0	435.0	-1.0472597877182985	--
Lycopersicon esculentum	Root		541.0	-0.940431214607169	--
Pisum sativum	Root		575.0	-0.9177480366608831	--
Citrus paradisi	Fruit		590.0	-0.9381817496597383	--
Pyrus communis	Fruit	110.0	679.0	-0.9137477131630594	--
Carica papaya	Fruit	100.0	895.0	-0.8544471302048274	USDA's Ag Handbook 8 and sequelae)
Psidium cattleianum	Fruit	180.0	930.0	-0.8448382394477065	--
Ananas comosus	Fruit	31.0	963.0	-0.8357784281624211	--
Panax quinquefolius	Plant	175.0	1120.0	-0.9274280071141	--
Vitis vinifera	Fruit	220.0	1132.0	-0.7893812127923229	USDA's Ag Handbook 8 and sequelae)
Sambucus canadensis	Fruit	250.0	1238.0	-0.7602800007850423	USDA's Ag Handbook 8 and sequelae)
Psoralea esculenta	Root		1266.0	-0.45674580251724606	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.
Murraya sp	Fruit	50.0	1440.0	-0.7048229741296588	--
Musa x paradisiaca	Fruit	400.0	1554.0	-0.6735254442350362	USDA's Ag Handbook 8 and sequelae)
Phoenix dactylifera	Fruit	120.0	1590.0	-0.6636420137419976	--
Vaccinium corymbosum	Fruit	250.0	1624.0	-0.6543076627207944	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Psidium guajava	Fruit	250.0	1800.0	-0.6059886691992721	USDA's Ag Handbook 8 and sequelae)
Fragaria spp	Fruit	190.0	1898.0	-0.5790837750793335	USDA's Ag Handbook 8 and sequelae)
Mangifera indica	Fruit	180.0	2000.0	-0.551080722015724	--
Colocasia esculenta	Root	600.0	2045.0	0.0629658333697197	--
Castanea sativa	Seed	1010.0	2222.0	-1.7905020192942334	--
Prunus domestica	Fruit	340.0	2297.0	-0.469542420448155	USDA's Ag Handbook 8 and sequelae)
Ficus carica	Fruit	490.0	2346.0	-0.4560899733881857	USDA's Ag Handbook 8 and sequelae)
Prunus persica	Fruit	290.0	2349.0	-0.45526635418043243	--
Daucus carota	Root	290.0	2375.0	0.28312608990720195	--
Zingiber officinale	Rhizome	410.0	2376.0	-1.0	--
Zingiber officinale	Root	410.0	2376.0	0.2837932421997398	USDA's Ag Handbook 8 and sequelae)
Manihot esculenta	Root	760.0	2415.0	0.309812181608715	--
Citrus reticulata	Fruit	310.0	2499.0	-0.4140853937927713	USDA's Ag Handbook 8 and sequelae)
Helianthus tuberosus	Tuber		2573.0	-0.9342964673469841	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.
Dioscorea pentaphylla	Root	480.0	2585.0	0.42322807134014523	--
Arctium lappa	Root	520.0	2600.0	0.43323535572821265	USDA's Ag Handbook 8 and sequelae)
Cocos nucifera	Seed	1380.0	2605.0	-1.7152581345146969	USDA's Ag Handbook 8 and sequelae)
Lycopersicon esculentum	Fruit	170.0	2810.0	-0.32870353592235396	--
Citrullus lanatus	Fruit		2827.0	-0.3240363604117524	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Ipomoea batatas	Root	710.0	2840.0	0.5933519059372906	--
Averrhoa carambola	Fruit	260.0	2860.0	-0.31497654912646694	USDA's Ag Handbook 8 and sequelae)

Plant	Part	Low PPM	High PPM	StdDev	Reference
Calathea allouia	Root	2610.0	2870.0	0.6133664747134254	--
Castanea mollisima	Seed	1632.0	2904.0	-1.6565168249870692	--
Persea americana	Fruit	620.0	2993.0	-0.27846276424940747	--
Beta vulgaris	Root	380.0	2997.0	0.6980948158657292	USDA's Ag Handbook 8 and sequelae)
Cucumis sativus	Fruit	120.0	3038.0	-0.2661084761331091	--
Cnidioscolus chayamansa	Leaf	620.0	3100.0	-1.179666969769901	--
Apium graveolens	Leaf	170.0	3208.0	-1.1640243366273353	USDA's Ag Handbook 8 and sequelae)
Phyllanthus emblica	Fruit	652.0	3225.0	-0.2147695455164916	--
Aloe vera	Leaf		3339.0	-1.1450504019821863	--
Citrus sinensis	Fruit	60.0	3473.0	-0.14668369100889192	--
Raphanus sativus	Root	180.0	3490.0	1.0270008960868768	--
Asimina triloba	Fruit	282.0	3648.0	-0.0986392372232873	--
Castanea dentata	Seed	2141.0	3811.0	-1.478328304112292	--
Opuntia ficus-indica	Bud		3995.0		Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Rehmannia glutinosa	Root	3000.0	4000.0	1.3672485652811677	--
Allium cepa	Bulb	370.0	4033.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Macadamia spp	Seed	3960.0	4075.0	-1.426463067606293	USDA's Ag Handbook 8 and sequelae)
Rosmarinus officinalis	Leaf	1360.0	4220.0	-1.0174470705136651	USDA's Ag Handbook 8 and sequelae)
Pachyrhizus erosus	Tuber	470.0	4330.0	-0.5931933207228488	--
Capsicum annuum	Fruit	370.0	5047.0	0.28544185332563193	--
Senna obtusifolia	Seed		5360.0	-1.1740129580979266	--
Perideridia gairdneri	Root		5524.0	2.3839886591088133	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.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Solanum melongena	Fruit	460.0	5700.0	0.4647163008799166	--
Juglans regia	Seed	5530.0	5740.0	-1.0993584510059582	USDA's Ag Handbook 8 and sequelae)
Allium sativum var. sativum	Bulb	1.3	5800.0	1.0	--
Cucurbita spp	Fruit	370.0	5855.0	0.5072699599471664	--
Ocimum basilicum	Leaf		5880.0	-0.7770140055446013	USDA's Ag Handbook 8 and sequelae)
Fagopyrum esculentum	Seed		5965.0	-1.0551551244383455	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Pisum sativum	Fruit	630.0	6231.0	0.6104969006522369	--
Oenothera biennis	Seed	5900.0	6297.0	-0.9899306603474678	--
Lycium barbarum	Fruit		6500.0	0.6843480896141092	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Nelumbo nucifera	Rhizome	1360.0	6500.0	1.0	--
Pinus edulis	Seed	6220.0	6610.0	-0.9284389216111886	USDA's Ag Handbook 8 and sequelae)
Brassica chinensis	Leaf	310.0	6625.0	-0.6691088047000515	--
Brassica rapa	Leaf	310.0	6625.0	-0.6691088047000515	USDA's Ag Handbook 8 and sequelae)
Solanum tuberosum	Tuber	740.0	6700.0	-0.13308264485534704	--
Sechium edule	Fruit	480.0	6855.0	0.7818096958649071	--
Phaseolus vulgaris	Fruit	680.0	6989.0	0.8185980204778843	USDA's Ag Handbook 8 and sequelae)
Anacardium occidentale	Seed	6900.0	7019.0	-0.848087096872728	--
Capsicum frutescens	Fruit	870.0	7099.0	0.8487973914288358	--
Theobroma cacao	Seed		7200.0	-0.8125279763894483	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Mentha x piperita	Leaf	1540.0	7215.0	-0.5836536791989987	USDA's Ag Handbook 8 and sequelae)
Psophocarpus tetragonolobus	Leaf	1680.0	7257.0	-0.5775704329768899	--
Prunus armeniaca	Fruit	1010.0	7400.0	0.9314338519400758	USDA's Ag Handbook 8 and sequelae)

Plant	Part	Low PPM	High PPM	StdDev	Reference
Bertholletia excelsa	Seed	7620.0	7884.0	-0.6781498636239054	USDA's Ag Handbook 8 and sequelae)
Lactuca sativa	Leaf	480.0	8000.0	-0.4699549105238691	--
Pisum sativum	Seed	1730.0	8183.0	-0.6194085540962777	--
Papaver bracteatum	Seed	6800.0	8400.0	-0.57677690136218	--
Artocarpus altilis	Seed	3690.0	8440.0	-0.5689185321946043	USDA's Ag Handbook 8 and sequelae)
Mentha spicata	Leaf	1350.0	9345.0	-0.27514619222062164	USDA's Ag Handbook 8 and sequelae)
Ginkgo biloba	Seed	3470.0	9475.0	-0.3655832299835854	USDA's Ag Handbook 8 and sequelae)
Cichorium endivia	Leaf	590.0	9500.0	-0.2526961168771247	--
Juglans nigra	Seed	9370.0	9800.0	-0.30173398049703354	USDA's Ag Handbook 8 and sequelae)
Pistacia vera	Seed	9470.0	9851.0	-0.29171455980837463	--
Foeniculum vulgare	Seed	9000.0	9873.0	-0.28739245676620806	USDA's Ag Handbook 8 and sequelae)
Foeniculum vulgare	Fruit	9000.0	9873.0	1.6103706188646485	--
Vigna angularis	Seed	8740.0	10097.0	-0.24338558942778463	--
Basella alba	Leaf	700.0	10145.0	-0.15927483560902458	--
Carum carvi	Seed	9170.0	10180.0	-0.2270794734050652	Revised USDA data received 1993.
Phaseolus vulgaris	Seed	9160.0	10294.0	-0.20468312127747473	USDA's Ag Handbook 8 and sequelae)
Nelumbo nucifera	Seed	3440.0	10424.0	-0.17914342148285398	--
Opuntia ficus-indica	Seed		10500.0	-0.16421252006446033	Laferriere, J.E., 1988, Nutricomp Program, Nutricomp Database; reviewed in J. Ethnobiology 9(1):27-29.
Cucurbita pepo	Seed	10000.0	10743.0	-0.11647292737143848	USDA's Ag Handbook 8 and sequelae)
Valerianella locusta	Plant	780.0	10830.0	0.7712093500636632	--
Phaseolus lunatus	Seed	1020.0	10855.0	-0.09446949370222676	--
Brassica oleracea var. viridis l.	Leaf	670.0	10981.0	-0.038189267949905695	--
Brassica oleracea var. botrytis l.	Flower	860.0	11110.0		--
Papaver somniferum	Seed	10620.0	11392.0	0.011029112372475834	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Ipomoea aquatica	Leaf	880.0	11685.0	0.06377752586829968	--
Citrullus lanatus	Seed		11800.0	0.09118447788174708	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Cajanus cajan	Seed	9550.0	11830.0	0.09707825475742879	--
Lens culinaris	Sprout Seedling	3560.0	11865.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Vigna radiata	Seed	10950.0	12090.0	0.14815765434667028	USDA's Ag Handbook 8 and sequelae)
Zea mays	Seed	2920.0	12147.0	0.15935583041046553	--
Brassica oleracea var. botrytis l.	Leaf	1140.0	12244.0	0.14474263630065312	--
Brassica oleracea var. italica	Leaf	1140.0	12244.0	0.14474263630065312	USDA's Ag Handbook 8 and sequelae)
Helianthus annuus	Seed	11820.0	12500.0	0.2287059383143203	--
Brassica oleracea var. sabellica l.	Leaf	1960.0	12610.0	0.19775378195045876	--
Juglans cinerea	Seed	12360.0	12787.0	0.2850897370916753	--
Lablab purpureus	Seed	1070.0	12822.0	0.29196581011330397	--
Prunus dulcis	Seed	12550.0	13127.0	0.351885875016068	USDA's Ag Handbook 8 and sequelae)
Portulaca oleracea	Herb	540.0	13200.0	-1.0	--
Lens culinaris	Seed	11720.0	13200.0	0.36622739874689353	USDA's Ag Handbook 8 and sequelae)
Vicia faba	Seed	2520.0	13265.0	0.37899724864420387	USDA's Ag Handbook 8 and sequelae)
Spinacia oleracea	Plant	1120.0	13301.0	1.2034784447687357	USDA's Ag Handbook 8 and sequelae)
Pinus pinea	Seed	12900.0	13900.0	0.5037488591794668	--
Vigna unguiculata	Seed		14050.0	0.5332177435578753	--
Vigna unguiculata	Seed		14050.0	0.5332177435578753	--
Chenopodium album	Leaf	2230.0	14205.0	0.42877229919483034	--
Sesamum indicum	Seed	8100.0	14277.0	0.5778139885838669	--
Nigella sativa	Seed	11350.0	14520.0	0.6255535812768888	--
Amaranthus sp.	Leaf	1210.0	14556.0	0.4796108569081685	--
Abelmoschus esculentus	Fruit	450.0	14930.0	2.9987180634006636	--



Plant	Part	Low PPM	High PPM	StdDev	Reference
Arachis hypogaea	Seed	11540.0	15362.0	0.7909722522543554	--
Cucurbita foetidissima	Seed	8290.0	15390.0	0.7964731106716583	--
Psophocarpus tetragonolobus	Tuber	6790.0	15939.0	1.66057243292518	--
Lupinus albus	Seed	14760.0	16480.0	1.0106136704880937	--
Cicer arietinum	Seed	7970.0	16530.0	1.0204366319475633	--
Secale cereale	Seed	14910.0	16745.0	1.0626753662232822	USDA's Ag Handbook 8 and sequelae)
Cucurbita pepo	Fruit	260.0	17100.0	3.5944692903421607	--
Trigonella foenum-graecum	Seed	11980.0	17800.0	1.269939853018089	--
Phaseolus vulgaris	Sprout Seedling	1690.0	18172.0	1.0	USDA's Ag Handbook 8 and sequelae)
Ceratonia siliqua	Seed		18800.0	1.4663990822074793	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Nasturtium officinale	Herb	960.0	19200.0	1.0	USDA's Ag Handbook 8 and sequelae)
Mucuna pruriens	Seed	9225.0	19555.0	1.614725800245469	--
Corchorus olitorius	Leaf	1130.0	20052.0	1.2756470768298402	--
Triticum aestivum	Seed	17526.0	20447.0	1.789967432682405	--
Sinapis alba	Seed	19440.0	20800.0	1.8593175405862599	--
Asparagus officinalis	Shoot	1620.0	20903.0	1.4024674410990334	--
Psophocarpus tetragonolobus	Seed	19240.0	20991.0	1.8968412533614334	--
Moringa oleifera	Shoot	4510.0	21135.0	1.4258944352803073	USDA's Ag Handbook 8 and sequelae)
Acacia farnesiana	Leaf	4080.0	21890.0	1.5418615186449842	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Allium schoenoprasum	Leaf	1850.0	23125.0	1.7207379254141373	USDA's Ag Handbook 8 and sequelae)
Glycine max	Seed	21350.0	23344.0	2.3591098196440687	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea var. capitata l.	Leaf	2380.0	31821.0	2.980259571782197	USDA's Ag Handbook 8 and sequelae)