

Dr. Duke's Phytochemical and Ethnobotanical Databases

List of Plants for MANGANESE

Plant	Part	Low PPM	High PPM	StdDev	Reference
Quercus alba	Stem	20.0	3800.0	2.071497614866079	--
Quercus rubra	Stem	70.0	3300.0	1.6357964507094915	--
Carya glabra	Shoot	38.0	3300.0	1.5585140850023955	--
Nyssa sylvatica	Leaf	12.0	2730.0	4.07862571779798	--
Carya ovata	Shoot	37.0	2700.0	1.083478041821579	--
Symphoricarpos orbiculatus	Stem	19.0	2640.0	1.0606709140227961	--
Juniperus virginiana	Shoot	11.0	2640.0	1.0359744375034974	--
Vaccinium vitis-idaea	Leaf		2500.0	3.6962602714553836	--
Vaccinium myrtillus	Leaf		2500.0	3.6962602714553836	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Liquidambar styraciflua	Stem	14.0	2400.0	0.8515343552276342	--
Quercus velutina	Stem	24.0	1984.0	0.4890309866493535	--
Quercus stellata	Stem	12.0	1680.0	0.2241246788421484	--
Diospyros virginiana	Leaf	25.0	1500.0	2.0338018090962695	--
Nyssa sylvatica	Stem	2.0	1320.0	-0.08958015935059453	--
Pinus echinata	Shoot	51.0	1260.0	-0.056608461812380634	--
Syzygium aromaticum	Flower	100.0	1200.0	3.8497155611333613	--
Camellia sinensis	Leaf		1200.0	1.5350642703885349	--
Syzygium aromaticum	Fruit	100.0	1200.0	7.509105970380378	--
Diospyros virginiana	Stem	22.0	1080.0	-0.29871671814575645	--
Sassafras albidum	Leaf	23.0	1020.0	1.2358217471638944	--
Vitis vinifera	Stem		986.0	-0.3806285370071949	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Rhus copallina	Stem	7.0	915.0	-0.4424981023174303	--
Jussiaea repens	Plant		799.0	5.031676795010242	--
Foeniculum vulgare	Fruit	24.0	721.0	4.350642455796347	--
Sassafras albidum	Stem	5.0	680.0	-0.6472776494710262	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Agathosma betulina	Leaf		675.0	0.6622735776500002	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Barosma betulina	Leaf		675.0	0.6622735776500002	--
Cinnamomum aromaticum	Bark	167.0	600.0	3.337609687601768	--
Amomum xanthioides	Seed		565.0	6.371362626523026	--
Morinda sp	Root		520.0	5.6634106684471375	--
Spinacia oleracea	Plant	3.0	485.0	2.7811803446646057	--
Rhus copallina	Leaf	8.0	480.0	0.338094177489973	--
Alisma plantago-aquatica	Rhizome	360.0	479.0	2.359023846210149	--
Trifolium pratense	Hay	25.0	464.0	1.0000000000000002	--
Lophatherum gracile	Plant		445.0	2.4944928987607033	--
Anethum graveolens	Plant	8.0	435.0	2.4228210372847276	--
Lantana camara	Shoot	308.0	412.0	-0.7279927361746015	--
Coptis chinensis	Rhizome	260.0	398.0	1.8184249103974641	--
Coptis japonica	Rhizome	260.0	398.0	1.8184249103974641	--
Coptis spp	Rhizome	260.0	398.0	1.8184249103974641	--
Cinnamomum sieboldii	Bark		360.0	1.7319353498800583	--
Zingiber officinale	Rhizome	106.0	350.0	1.4980699854714286	--
Cynanchum atratum	Root		341.0	3.525984047974935	--
Fallopia japonica	Plant	59.0	330.0	1.670266491786983	Chem. & Pharm. Bull. 38: 2205.
Akebia quinata	Stem		310.0	-0.9696965109469009	--
Acorus calamus	Rhizome		309.0	1.2244334870971068	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Rhizophora mangle	Leaf		300.0	0.0388516542653325	--
Rubus chingii	Fruit		287.0	1.4889030709749056	--
Crocus sativus	Silk Stigma Style		284.0	1.0	USDA's Ag Handbook 8 and sequelae)
Cocos nucifera	Seed	9.0	281.0	2.833645212569222	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Elettaria cardamomum</i>	Fruit	66.0	280.0	1.4427459841229469	--
<i>Annona squamosa</i>	Leaf		253.0	-0.03928389346554585	--
<i>Vaccinium vitis-idaea</i>	Fruit	28.0	250.0	1.2449298976145524	--
<i>Asiasarum heterotropoides</i>	Root	120.0	248.0	2.41547747979664	--
<i>Asiasarum sieboldii</i>	Root	120.0	248.0	2.41547747979664	--
<i>Lactuca sativa</i>	Leaf	1.0	240.0	-0.06089585347621433	--
<i>Vigna unguiculata</i>	Seed	5.6	240.0	2.322918402808286	--
<i>Siegesbeckia orientalis</i>	Plant		231.0	0.9607150631748239	--
<i>Helianthus tuberosus</i>	Tuber	3.0	228.0	2.2128521901130793	--
<i>Eriobotrya japonica</i>	Leaf		224.0	-0.08749518887396016	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), <i>Kaohsiung J. Med. Sci.</i> , 4: 259-272.
<i>Cinnamomum sieboldii</i>	Root Bark		220.0	2.108691925797159	--
<i>Cypripedium pubescens</i>	Root		209.0	1.9497811770121938	Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing. Bountiful, Utah. 377 pp.
<i>Ananas comosus</i>	Fruit	12.0	209.0	0.9745812460530798	USDA's Ag Handbook 8 and sequelae)
<i>Taraxacum officinale</i>	Leaf	14.0	206.0	-0.1174194411964242	--
<i>Avena sativa</i>	Seed	20.0	204.0	1.8744753503352685	Jim Duke's personal files.*
<i>Valerianella locusta</i>	Plant	179.0	201.0	0.7456994787468969	--
<i>Lygodium japonicum</i>	Pollen Or Spore		191.0		--
<i>Elytrigia repens</i>	Plant	43.0	188.0	0.6525260588281285	--
<i>Isatis tinctoria</i>	Root		181.0	1.6154351134746425	--
<i>Perilla frutescens</i>	Plant		180.0	0.595188569647348	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
<i>Taraxacum mongolicum</i>	Plant		178.0	0.5808541973521528	--
<i>Juncus effusus</i>	Pith		171.0	1.0	--
<i>Cinnamomum burmannii</i>	Bark		170.0	0.4607764991837046	--
<i>Artemisia vulgaris</i>	Plant	160.0	170.0	0.5235167081713723	Chem. & Pharm. Bull. 38: 2205.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Oenothera biennis	Seed	5.0	168.0	1.4260322978622513	--
Hyoscyamus niger	Seed		166.0	1.4011187949470836	--
Viscum album	Leaf		159.0	-0.19555498892730255	--
Panax quinquefolius	Plant	19.0	156.0	0.4231761021050064	--
Phaseolus vulgaris	Fruit	1.0	150.0	0.5855429425865706	--
Stevia rebaudiana	Leaf		147.0	-0.2155044904756119	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Rubus idaeus	Leaf	25.0	146.0	-0.21716694893797103	--
Nardostachys chinensis	Rhizome		141.0	0.10319124985598252	--
Cinnamomum verum	Bark	66.0	140.0	0.2600672069684909	--
Boehmeria nivea	Plant	80.0	140.0	0.3085011237434453	--
Atractylodes ovata	Rhizome	30.0	139.0	0.08984312798406438	--
Eucommia ulmoides	Bark		135.0	0.22661565826595526	--
Rhus glabra	Stem	3.0	134.0	-1.1230633207300196	--
Taraxacum officinale	Plant	100.0	130.0	0.23682926226746964	--
Fragaria spp	Fruit	1.4	125.0	0.4206962038295751	--
Rubus chamaemorus	Fruit	7.0	125.0	0.4206962038295751	--
Nelumbo nucifera	Seed		125.0	0.8903919851861474	--
Amphicarpaea bracteata	Shoot		120.0	-0.9591769438559322	--
Forsythia suspensa	Fruit		120.0	0.38772685607817603	--
Hordeum vulgare	Seed	2.0	120.0	0.8281082278982284	--
Aspalathus linearis	Shoot		120.0	-0.9591769438559322	--
Houttuynia cordata	Plant		120.0	0.16515740079149396	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
Magnolia officinalis	Bark		120.0	0.1262610121583484	--
Pulsatilla chinensis	Root		119.0	0.8750974013557795	--
Asimina triloba	Fruit	25.0	111.0	0.32838203012565764	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Angelica dahurica	Root		110.0	0.7676290237901381	--
Celosia cristata	Flower		109.0	-0.007357959913546214	--
Triticum aestivum	Plant	0.0	105.0	0.057649608577530674	--
Cymbopogon citratus	Plant		104.0	0.05048242242993311	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Cinnamomum verum	Leaf		101.6	-0.29098010466671564	--
Echinacea spp	Root		101.0	0.6601606462244966	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Abelmoschus esculentus	Fruit	10.0	100.0	0.2558494650725795	USDA's Ag Handbook 8 and sequelae)
Corylus avellana	Seed	16.0	100.0	0.5789731987465522	--
Cucurbita pepo	Seed	40.0	100.0	0.5789731987465522	--
Phaseolus lunatus	Seed	8.0	100.0	0.5789731987465522	--
Petasites japonicus	Plant	70.0	100.0	0.021813677839542838	Chem. & Pharm. Bull. 38: 2205.
Asparagus officinalis	Shoot	2.0	100.0	-0.975011478628626	--
Glechoma hederacea	Plant	82.0	100.0	0.021813677839542838	Chem. & Pharm. Bull. 38: 2205.
Lycopodium clavatum	Plant		100.0	0.021813677839542838	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Annona cherimola	Seed	80.0	100.0	0.5789731987465522	--
Lycopersicon esculentum	Fruit	0.6	100.0	0.2558494650725795	--
Gentiana scabra	Root		98.0	0.6243378537026161	--
Cucumis sativus	Fruit	0.5	98.0	0.24266172597201985	--
Eriocaulon sp	Leaf		96.0	-0.3002898720559267	--
Prunella vulgaris	Flower		96.0	-0.053317589403564354	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Rubia cordifolia	Root		94.0	0.5765741303401087	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Lycium chinense</i>	Root Bark		91.0	0.14227319017426585	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), <i>Kaohsiung J. Med. Sci.</i> , 4: 259-272.
<i>Eriodictyon californicum</i>	Leaf	20.0	91.0	-0.3086021643677223	--
<i>Vaccinium myrtillus</i>	Fruit	7.0	91.0	0.1965046391200611	--
<i>Beta vulgaris</i>	Root	3.0	90.0	0.5288104069776015	--
<i>Fraxinus rhynchophylla</i>	Bark		89.0	-0.08113858979737261	--
<i>Triticum aestivum</i>	Seed	0.0	86.0	0.40457867834037875	--
<i>Pisum sativum</i>	Plant		85.0	-0.08569411437442066	--
<i>Mentha pulegium</i>	Plant		83.0	-0.10002848666961581	Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing. Bountiful, Utah. 377 pp.
<i>Angelica laxiflora</i>	Root		83.0	0.4452238910932137	--
<i>Laurus nobilis</i>	Leaf		82.0	-0.3235642905289543	USDA's Ag Handbook 8 and sequelae)
<i>Chrysanthemum parthenium</i>	Plant		81.0	-0.11436285896481094	--
<i>Broussonetia papyrifera</i>	Fruit		81.0	0.13056594361726293	--
<i>Brassica oleracea</i> var. <i>botrytis</i> l.	Leaf	2.0	80.0	-0.32688920745367256	--
<i>Artemisia dracunculus</i>	Plant		80.0	-0.1215300451124085	USDA's Ag Handbook 8 and sequelae)
<i>Brassica oleracea</i> var. <i>italica</i>	Leaf	2.0	80.0	-0.32688920745367256	--
<i>Rubus idaeus</i>	Fruit	10.0	80.0	0.12397207406698312	Revised USDA data received 1993.
<i>Curcuma longa</i>	Rhizome	33.0	78.0	-0.31727458910943884	--
<i>Mentha spicata</i>	Leaf	11.0	77.0	-0.3318765828407499	USDA's Ag Handbook 8 and sequelae)
<i>Apium graveolens</i>	Seed	1.3	76.0	0.28001116376454066	--
<i>Sorbus aucubaria</i>	Fruit	12.0	75.0	0.09100272631558402	--
<i>Cimicifuga dahurica</i>	Rhizome		74.0	-0.3439708328532751	--
<i>Actaea dahurica</i>	Rhizome		74.0	-0.3439708328532751	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, <i>Shoykugaku Zasshi</i> 36(3):190-195.
<i>Plantago asiatica</i>	Plant		74.0	-0.1645331619979939	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Acanthopanax gracilistylis</i>	Root Bark		74.0	-0.1168672633574332	--
<i>Juglans cinerea</i>	Seed	31.0	72.0	0.2301841579342054	--
<i>Berberis vulgaris</i>	Fruit		72.0	0.07122111766474458	Jim Duke's personal files.
<i>Cichorium endivia</i>	Leaf	4.0	72.0	-0.3401888751525454	--
<i>Erythroxylum coca</i>	Leaf	26.0	71.0	-0.34185133361490455	--
<i>Linum usitatissimum</i>	Seed	50.0	70.0	0.2052706550190378	--
<i>Glehnia littoralis</i>	Root		70.0	0.2899917901650649	--
<i>Lonicera japonica</i>	Flower		70.0	-0.14523684838360065	--
<i>Pimenta dioica</i>	Bud	29.0	70.0		USDA's Ag Handbook 8 and sequelae)
<i>Eupatorium odoratum</i>	Leaf		70.0	-0.3435137920772637	Tramil
<i>Peucedanum decursivum</i>	Plant	43.0	69.0	-0.20036909273598175	--
<i>Papaver somniferum</i>	Seed	29.0	68.0	0.18035715210387018	--
<i>Schizonepeta tenuifolia</i>	Plant		68.0	-0.2075362788835793	--
<i>Symphytum officinale</i>	Root		67.0	0.2541689976431844	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
<i>Areca catechu</i>	Seed		67.0	0.16790040064628636	--
<i>Achyranthes bidentata</i>	Root	40.0	66.0	0.2422280668025576	--
<i>Coriandrum sativum</i>	Leaf		64.0	-0.35348854285141834	USDA's Ag Handbook 8 and sequelae)
<i>Dioscorea sp.</i>	Root		64.0	0.21834620512130393	--
<i>Euodia rutaecarpa</i>	Fruit		63.0	0.011876291712226211	--
<i>Zea mays</i>	Seed	0.84	63.0	0.11807339481595111	--
<i>Daucus carota</i>	Root	1.0	62.0	0.19446434344005029	--
<i>Polystichum polyblepharum</i>	Plant	37.0	62.0	-0.25053939576916473	--
<i>Satureja montana</i>	Plant		61.0	-0.25770658191676227	USDA's Ag Handbook 8 and sequelae)
<i>Satureja hortensis</i>	Leaf		61.0	-0.3584759182384957	USDA's Ag Handbook 8 and sequelae)
<i>Rumex acetosa</i>	Leaf	6.0	60.0	-0.3601383767008548	--
<i>Hordeum vulgare</i>	Stem		60.0	-1.1875470930251946	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Glycine max	Seed	8.0	60.0	0.08070314044319968	USDA's Ag Handbook 8 and sequelae)
Brassica oleracea var. viridis l.	Leaf	4.0	60.0	-0.3601383767008548	--
Rosa laevigata	Fruit		59.0	-0.01449918648889306	--
Carya ovata	Seed		58.0	0.05578963752803206	--
Piper nigrum	Fruit	19.0	56.0	-0.03428079513973251	--
Erythroxylum novogranatense	Leaf	28.0	55.0	-0.3684506690126504	--
Phyllanthus emblica	Fruit	11.0	55.0	-0.04087466469001233	--
Vitis vinifera	Fruit	0.5	54.0	-0.047468534240292154	--
Origanum majorana	Plant		54.0	-0.30787688494994525	USDA's Ag Handbook 8 and sequelae)
Prunus persica	Bark		54.0	-0.31529943071512195	--
Brassica nigra	Leaf	3.0	53.0	-0.3717755859373686	USDA's Ag Handbook 8 and sequelae)
Dendrobium nobile	Stem		53.0	-1.1936469093233868	--
Chamaemelum nobile	Flower		52.0	-0.20887325844670268	--
Brassica oleracea var. sabellica l.	Leaf	8.0	50.0	-0.376762961324446	--
Viburnum opulus	Bark		49.0	-0.34875097941765754	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Geranium thunbergii	Plant		49.0	-0.3437128156879331	--
Brassica oleracea var. botrytis l.	Flower	1.5	48.0	-0.2230146829051698	--
Origanum vulgare	Plant		47.0	-0.35804718798312823	USDA's Ag Handbook 8 and sequelae)
Juglans nigra	Seed	30.0	46.0	-0.09369137996297368	--
Pinellia ternata	Tuber	11.0	46.0	-0.16318968953636295	--
Rheum palmatum	Rhizome	19.0	46.0	-0.5308445390601292	--
Phoenix dactylifera	Fruit	3.0	45.0	-0.10681336019281051	--
Colocasia esculenta	Leaf		45.0	-0.3850752536362415	--
Brassica oleracea var. capitata l.	Leaf	1.0	45.0	-0.3850752536362415	--
Mentha arvensis var. piperascens	Plant		44.0	-0.3795487464259209	Suziki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Castanea dentata	Seed	19.0	44.0	-0.1186048828781413	--
Psophocarpus tetragonolobus	Seed	34.0	44.0	-0.1186048828781413	--
Panax japonicus	Rhizome		43.0	-0.5508667218680063	--
Tetrapanax papyrifera	Pith		43.0	-1.0	--
Sophora angustifolia	Root	28.0	42.0	-0.0443542733724863	--
Magnolia denudata	Flower		42.0	-0.2442268195928705	--
Magnolia fargesii	Flower		42.0	-0.2442268195928705	--
Magnolia kobus	Flower		42.0	-0.2442268195928705	--
Senna occidentalis	Seed		42.0	-0.14351838579330892	--
Sinapis alba	Seed	21.0	41.0	-0.15597513725089274	--
Raphanus sativus	Seed		40.0	-0.16843188870847656	--
Anemarrhena asphodeloides	Rhizome	10.0	40.0	-0.5708889046758836	--
Allium schoenoprasum	Leaf	3.0	40.0	-0.3933875459480371	Revised USDA data received 1993.
Solanum melongena	Fruit	1.4	40.0	-0.1397827079442096	--
Atractylodes lancea	Rhizome		39.0	-0.5775629656118426	--
Drynaria fortunei	Rhizome		39.0	-0.5775629656118426	--
Lablab purpureus	Seed		39.0	-0.18088864016606035	--
Notopterygium incisum	Rhizome		39.0	-0.5775629656118426	--
Tephrosia candida	Plant		38.0	-0.4225518633115063	--
Allium cepa	Bulb	1.0	38.0	1.4045726642160135	--
Chondrus crispus	Plant		38.0	-0.4225518633115063	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Nepeta cataria	Plant	5.0	37.4	-0.42685217500006484	--
Artemisia capillaris	Plant		37.0	-0.4297190494591039	--
Morus alba	Root Bark	15.0	37.0	-0.6808788386911311	--
Ephedra spp	Plant		37.0	-0.4297190494591039	--
Rhodymenia palmata	Plant		37.0	-0.4297190494591039	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Erythroxylum novogranatense	Leaf	35.0	36.0	-0.40003737979747356	--
Castanea mollissima	Seed	12.0	36.0	-0.21825889453881178	--
Rheum rhabarbarum	Pt	2.0	35.0	1.0	--
Carum carvi	Seed	13.0	34.0	-0.24317239745397942	--
Carum carvi	Fruit	13.0	34.0	-0.17934592524588852	--
Paeonia moutan	Root Bark	10.0	34.0	-0.7266095069614309	--
Paeonia suffruticosa	Root Bark	10.0	34.0	-0.7266095069614309	--
Zea mays	Silk Stigma Style		34.0	-1.0	--
Elaeagnus umbellatus	Fruit	6.0	34.0	-0.17934592524588852	--
Zingiber officinale	Root	2.4	33.8	-0.14226990626562633	--
Trachyspermum ammi	Fruit		33.1	-0.1852804078411404	--
Apium graveolens	Pt	1.0	33.0	-1.0	USDA's Ag Handbook 8 and sequelae)
Cuminum cyminum	Fruit	24.0	33.0	-0.18593979479616832	--
Aristolochia debilis	Fruit		33.0	-0.18593979479616832	--
Pastinaca sativa	Root	2.0	33.0	-0.15182265093812775	--
Cuminum cyminum	Seed	24.0	33.0	-0.25562914891156324	--
Albizia julibrissin	Bark		33.0	-0.45579593526577156	--
Quisqualis indica	Fruit		33.0	-0.18593979479616832	--
Prunus dulcis	Seed	14.0	32.0	-0.26808590036914703	--
Juglans regia	Seed	27.0	32.0	-0.26808590036914703	USDA's Ag Handbook 8 and sequelae)
Ocimum basilicum	Leaf		32.0	-0.40668721364691	USDA's Ag Handbook 8 and sequelae)
Secale cereale	Seed	25.0	30.0	-0.2929994032843147	USDA's Ag Handbook 8 and sequelae)
Cnidium officinale	Rhizome		30.0	-0.6376295140354743	--
Platycodon grandiflorum	Root	24.0	30.0	-0.18764544346000825	--
Arachis hypogaea	Seed	11.0	30.0	-0.2929994032843147	--
Carya illinoensis	Seed		30.0	-0.2929994032843147	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Rosmarinus officinalis	Leaf	10.0	30.0	-0.4100121305716282	USDA's Ag Handbook 8 and sequelae)
Myristica fragrans	Seed	23.0	29.0	-0.30545615474189847	--
Scutellaria baicalensis	Root	18.0	29.0	-0.19958637430063508	--
Malus domestica	Fruit	0.0	29.0	-0.2123152729972876	--
Valerianella radicata	Plant	27.1	28.6	-0.4899234130989235	--
Blechnum orientale	Rhizome		28.0	-0.6509776359073924	--
Cyperus rotundus	Rhizome		28.0	-0.6509776359073924	--
Centella asiatica	Leaf	3.0	27.7	-0.41383578503505414	--
Ophiopogon japonicus	Tuber	5.0	27.0	-0.41123801763163437	--
Ribes nigrum	Fruit	0.5	27.0	-0.22550301209784723	--
Cucurbita spp	Fruit	1.0	27.0	-0.22550301209784723	--
Polygonum multiflorum	Rhizome		26.0	-0.6643257577793106	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Ligustrum japonicum	Fruit		26.0	-0.23209688164812706	--
Hordeum vulgare	Sprout Seedling		26.0	0.8429272304235246	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Ligustrum lucidum	Fruit		26.0	-0.23209688164812706	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Cicer arietinum	Seed	21.0	26.0	-0.3428264091146499	USDA's Ag Handbook 8 and sequelae)
Coix lacryma-jobi	Seed		26.0	-0.3428264091146499	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
Gastrodia elata	Rhizome		26.0	-0.6643257577793106	--
Glycyrrhiza uralensis	Root	13.0	26.0	-0.23540916682251556	--
Prunus domestica	Fruit	0.22	25.5	-0.23539381642326695	--
Quercus alba	Bark	6.0	25.3	-0.5073113202676763	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Vigna radiata	Sprout Seedling	1.4	25.0	0.5619514869490164	USDA's Ag Handbook 8 and sequelae)
Tussilago farfara	Flower		25.0	-0.30432787354135576	--
Phaseolus vulgaris	Seed	2.0	24.0	-0.36773991202981754	--
Cassia tora	Seed		24.0	-0.36773991202981754	--
Rehmannia glutinosa	Root		24.0	-0.2592910285037692	--
Juglans nigra	Fruit	23.0	24.0	-0.2452846207486867	--
Polygala tenuifolia	Root		24.0	-0.2592910285037692	--
Brassica oleracea var. gemmifera	Leaf	3.0	24.0	-0.41998688134578294	USDA's Ag Handbook 8 and sequelae)
Caulophyllum thalictroides	Root	3.0	23.7	-0.26287330775595724	--
Apium graveolens	Root	0.74	23.0	-0.27123195934439603	ACTA AGRIC SCAND SUPPL 22: 1980
Pimpinella anisum	Fruit		23.0	-0.25187849029896653	--
Firmiana simplex	Seed		23.0	-0.38019666348740133	--
Salvia miltiorrhiza	Root		23.0	-0.27123195934439603	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Pimpinella anisum	Seed		23.0	-0.38019666348740133	USDA's Ag Handbook 8 and sequelae)
Prunus persica	Fruit	0.0	22.5	-0.2551754250741064	--
Solanum tuberosum	Tuber	1.3	22.0	-0.4765138934461795	--
Polygonum multiflorum	Root		21.0	-0.2951138210256497	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Helianthus annuus	Seed	20.0	21.0	-0.40511016640256897	USDA's Ag Handbook 8 and sequelae)
Lycium chinense	Fruit		21.0	-0.2650662293995261	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Pisum sativum	Seed	3.0	21.0	-0.40511016640256897	--
Anthriscus cerefolium	Leaf		21.0	-0.42497425673286027	--
Sinomenium acutum	Rhizome		21.0	-0.697696062459106	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Chenopodium album	Seed		21.0	-0.40511016640256897	--
Cajanus cajan	Seed	17.0	21.0	-0.40511016640256897	--
Alocasia macrorrhiza	Root	6.0	21.0	-0.2951138210256497	--
Simmondsia chinensis	Seed		21.0	-0.40511016640256897	--
Brassica rapa	Seed		20.0	-0.41756691786015276	--
Vaccinium corymbosum	Fruit	3.0	20.0	-0.271660098949806	--
Paeonia lactiflora	Root	14.0	20.0	-0.3070547518662765	--
Vigna aconitifolia	Seed	18.0	20.0	-0.41756691786015276	--
Capsicum frutescens	Fruit	2.0	20.0	-0.271660098949806	USDA's Ag Handbook 8 and sequelae)
Raphanus sativus	Root	0.5	20.0	-0.3070547518662765	--
Vigna angularis	Seed	17.0	20.0	-0.41756691786015276	--
Cistanche salsa	Plant		20.0	-0.5515612139682625	--
Phellodendron amurense	Bark		20.0	-0.5427699618923642	--
Allium cepa	Seed		19.4	-0.425040968734703	--
Stachys officinalis	Plant	3.2	19.0	-0.5587284001158601	--
Coriandrum sativum	Fruit	18.0	19.0	-0.27825396850008577	--
Gardenia jasminoides	Fruit	16.0	19.0	-0.27825396850008577	--
Rosmarinus officinalis	Plant	18.0	19.0	-0.5587284001158601	USDA's Ag Handbook 8 and sequelae)
Hydrangea arborescens	Root	7.0	18.7	-0.3225779619590914	--
Polygonum multiflorum	Plant		18.5	-0.5623119931896589	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anethum graveolens	Fruit		18.0	-0.2848478380503656	--
Anethum graveolens	Seed		18.0	-0.4424804207753204	USDA's Ag Handbook 8 and sequelae)
Scrophularia buergeriana	Root		18.0	-0.3309366135475302	--
Aconitum carmichaelii	Tuber		18.0	-0.5287345940978156	--
Lens culinaris	Sprout Seedling	5.0	18.0	-1.404878717372541	USDA's Ag Handbook 8 and sequelae)

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Prunus persica</i>	Seed		17.0	-0.4549371722329042	--
<i>Cynara cardunculus</i>	Flower	2.0	17.0	-0.33261072245829	USDA's Ag Handbook 8 and sequelae)
<i>Brassica napus</i> var. <i>napobrassica</i>	Root	1.3	17.0	-0.342877544388157	ACTA AGRIC SCAND SUPPL 22: 1980
<i>Vigna unguiculata</i>	Seed	16.0	17.0	-0.4549371722329042	USDA's Ag Handbook 8 and sequelae)
<i>Arctostaphylos uva-ursi</i>	Leaf	2.0	16.5	-0.4324553198134763	--
<i>Spirulina</i> spp.	Plant		16.0	-0.5802299585586528	--
<i>Phoenix dactylifera</i>	Seed		16.0	-0.467393923690488	Abstract (See species file)
<i>Ribes uva-crispa</i>	Fruit	1.0	16.0	-0.2980355771509252	--
<i>Allium sativum</i> var. <i>sativum</i>	Bulb	1.6	15.3	-0.55952175946182	--
<i>Hibiscus sabdariffa</i>	Flower	2.0	15.1	-0.3393278990760618	--
<i>Ribes rubrum</i>	Fruit	1.0	15.0	-0.30462944670120506	--
<i>Chaenomeles lagenaria</i>	Fruit		15.0	-0.30462944670120506	--
<i>Ipomoea batatas</i>	Root	1.0	15.0	-0.36675940606941065	--
<i>Silybum marianum</i>	Plant		14.7	-0.5895473005505297	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
<i>Silybum marianum</i>	Leaf	3.2	14.7	-0.4354477450457226	--
<i>Rumex crispus</i>	Root	4.0	14.5	-0.3727298714897241	--
<i>Myristica fragrans</i>	Aril		14.0		--
<i>Catalpa ovata</i>	Fruit		14.0	-0.31122331625148486	--
<i>Sesamum indicum</i>	Seed		14.0	-0.49230742660565563	USDA's Ag Handbook 8 and sequelae)
<i>Senna obtusifolia</i>	Seed	10.0	14.0	-0.49230742660565563	--
<i>Amorphophallus campanulatus</i>	Root	3.0	14.0	-0.3787003369100375	--
<i>Sophora subprostrata</i>	Root		14.0	-0.3787003369100375	--
<i>Crataegus rhipidophylla</i>	Fruit		14.0	-0.31122331625148486	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
<i>Belamcanda chinensis</i>	Rhizome		13.0	-0.7510885499467785	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Castanea sativa	Seed	5.0	13.0	-0.5047641780632395	--
Euphrasia officinalis	Plant	2.0	12.6	-0.6045983914604846	--
Vigna radiata	Seed	9.6	12.2	-0.5147295792293065	USDA's Ag Handbook 8 and sequelae)
Mangifera indica	Fruit	0.2	12.2	-0.32309228144198865	--
Fritillaria thunbergii	Bulb		12.0	-0.8450509047541928	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Cyrtosperma chamissonis	Root	2.2	12.0	-0.40258219859129113	--
Urtica dioica	Seed		12.0	-0.5172209295208232	--
Tragopogon porrifolius	Root		12.0	-0.40258219859129113	--
Psidium guajava	Fruit	1.0	12.0	-0.3244110553520445	USDA's Ag Handbook 8 and sequelae)
Phaseolus acutifolius	Seed	6.0	12.0	-0.5172209295208232	--
Crataegus cuneata	Fruit		12.0	-0.3244110553520445	--
Verbascum thapsus	Leaf	5.3	12.0	-0.43993638289409226	--
Equisetum hyemale	Plant		12.0	-0.608898703149043	--
Xanthosoma sagittifolium	Root	1.7	11.3	-0.41094085017973	--
Averrhoa carambola	Fruit	1.0	11.0	-0.3310049249023243	USDA's Ag Handbook 8 and sequelae)
Canavalia ensiformis	Seed		11.0	-0.5296776809784071	--
Cornus officinalis	Fruit		11.0	-0.3310049249023243	--
Prunus armeniaca	Seed	1.0	11.0	-0.5296776809784071	--
Sambucus nigra	Fruit	2.0	11.0	-0.3310049249023243	--
Brassica pekinensis	Leaf	9.5	10.5	-0.44243007058763095	--
Echinacea purpurea	Root	3.0	10.1	-0.4252699671884822	--
Persea americana	Fruit	2.0	10.0	-0.33759879445260416	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Momordica charantia	Fruit		10.0	-0.33759879445260416	=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
Bletilla striata	Tuber		10.0	-0.6331759954010878	Chen, H.C. and Lin, S.M. 1988. Determination of Mineral Elements in Certain Crude Drugs (Part 1), Kaohsiung J. Med. Sci., 4: 259-272.
Asparagus lucidus	Root		10.0	-0.4264640602725448	--
Zizyphus jujuba	Fruit		10.0	-0.33759879445260416	--
Citrus medica	Fruit		9.0	-0.34419266400288395	--
Serenoa repens	Fruit	1.2	8.9	-0.3448520509579119	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Hydrastis canadensis	Root	2.4	8.5	-0.44437545653348504	--
Anacardium occidentale	Seed		8.4	-0.5620652347681249	--
Armoracia rusticana	Root	1.5	8.2	-0.44795773578567305	--
Curcuma longa	Plant	2.5	8.2	-0.6361340105099139	--
Linum usitatissimum	Hay		8.1	-1.0000000000000002	--
Chrysanthemum parthenium	Leaf	1.5	8.1	-0.4464199708972928	--
Humulus lupulus	Fruit		8.1	-0.3501271465981358	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Humulus lupulus	Flower	1.5	8.1	-0.36407539187837923	--
Tanacetum parthenium	Plant		8.1	-0.6368507291246737	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Bertholletia excelsa	Seed		8.0	-0.5670479353511585	USDA's Ag Handbook 8 and sequelae)
Citrus aurantium	Fruit		8.0	-0.3507865335531638	Suzuki, A., Morimoto, I., and Okitsu, T., Elution of Metals from Crude Drugs, Shoykugaku Zasshi 36(3):190-195.
Lepidium meyenii	Root		8.0	-0.45034592195379847	Taylor, Leslie. 2005. The Healing Power of Rainforest Herbs. SquareOne Publisher, Garden City Park, NY. 519 pp.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Senna alexandrina	Leaf	2.0	8.0	-0.4465862167435287	--
Prunus cerasus	Fruit	1.0	8.0	-0.3507865335531638	--
Citrus sinensis	Fruit	0.0	8.0	-0.3507865335531638	--
Lobelia inflata	Leaf	0.9	8.0	-0.4465862167435287	--
Urtica dioica	Leaf	2.0	7.8	-0.4469187084360006	--
Cucumis melo	Fruit	0.4	7.7	-0.3527646944182478	--
Citrus paradisi	Fruit	0.0	7.7	-0.3527646944182478	--
Harpagophytum procumbens	Root	2.0	7.7	-0.4539282012059865	--
Fucus vesiculosus	Plant	0.9	7.6	-0.6404343221984724	--
Colocasia esculenta	Root	1.3	7.6	-0.45512229429004925	--
Ficus carica	Fruit	1.0	7.0	-0.3573804031034436	USDA's Ag Handbook 8 and sequelae)
Brassica rapa	Root	0.6	7.0	-0.4622868527944253	--
Urtica dioica	Root		7.0	-0.4622868527944253	--
Artocarpus heterophyllus	Fruit	2.0	7.0	-0.3573804031034436	--
Ruscus aculeatus	Root	2.0	7.0	-0.4622868527944253	--
Equisetum arvense	Plant	1.5	6.9	-0.6454513525017906	--
Taraxacum officinale	Root	1.0	6.8	-0.4646750389625507	--
Salix alba	Bark	1.0	6.6	-0.6324201124151596	--
Thymus vulgaris	Leaf	1.0	6.4	-0.44924615028330334	--
Myrica cerifera	Bark	1.4	6.4	-0.633758174363261	--
Dioscorea villosa	Root	1.5	6.4	-0.4694514112988013	--
Juniperus communis	Fruit	2.0	6.3	-0.3619961117886394	--
Apium graveolens	Fruit	1.3	6.3	-0.3619961117886394	--
Mentha x piperita	Leaf	0.9	6.1	-0.449744887822011	--
Genipa americana	Seed		6.0	-0.5919614382663261	--
Berberis vulgaris	Bark		6.0	-0.6364342982594638	--
Petroselinum crispum	Plant	0.5	6.0	-0.6519018200346285	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Arctium lappa	Root	1.4	6.0	-0.47422778363505214	--
Berberis vulgaris	Root		6.0	-0.47422778363505214	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Trifolium pratense	Flower	1.0	5.9	-0.37185317533053636	--
Symphytum officinale	Leaf	0.6	5.8	-0.4502436253607189	--
Smilax spp	Root	1.2	5.7	-0.47781006288724015	--
Smilax officinalis	Root	1.2	5.7	-0.47781006288724015	--
Valeriana officinalis	Root	0.7	5.6	-0.4790041559713029	--
Pyrus communis	Fruit	0.3	5.55	-0.3669415139513493	--
Ephedra sinica	Plant	1.0	5.4	-0.656202131723187	--
Turnera diffusa	Leaf	1.1	5.4	-0.45090860874566246	--
Stellaria media	Plant	0.4	5.3	-0.6569188503379467	--
Larrea tridentata	Plant	2.0	5.2	-0.6576355689527066	--
Achillea millefolium	Plant	1.0	5.0	-0.6590690061822261	--
Pueraria pseudohirsuta	Root	3.0	5.0	-0.48616871447567894	--
Eupatorium perfoliatum	Plant	0.5	5.0	-0.6590690061822261	--
Vaccinium macrocarpon	Fruit	0.6	5.0	-0.37056814220400325	--
Bupleurum chinense	Root	0.6	5.0	-0.48616871447567894	--
Annona cherimola	Fruit	1.0	5.0	-0.37056814220400325	--
Glycyrrhiza glabra	Root	0.7	4.7	-0.48975099372786696	--
Scutellaria lateriflora	Plant	0.6	4.7	-0.6612191620265054	--
Citrus reticulata	Fruit	0.0	4.6	-0.3732056900241152	--
Althaea officinalis	Root	0.5	4.4	-0.49333327298005497	--
Foeniculum vulgare	Seed	0.5	4.3	-0.6131379157442186	--
Citrullus lanatus	Fruit		4.0	-0.37716201175428304	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Arisaema consanguineum	Rhizome		4.0	-0.8111550983704102	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Dioscorea bulbifera	Rhizome		4.0	-0.8111550983704102	--
Rosa canina	Fruit	0.8	4.0	-0.37716201175428304	--
Quercus rubra	Seed		3.9	-0.618120616327252	--
Schisandra chinensis	Fruit	0.6	3.7	-0.37914017261936706	--
Artocarpus altilis	Fruit	0.6	3.5	-0.38045894652942297	--
Pistacia vera	Seed	3.2	3.4	-0.624348992056044	--
Phaseolus coccineus	Seed		3.2	-0.6268403423475608	--
Carthamus tinctorius	Flower	0.4	3.1	-0.38175217245146315	--
Salvia officinalis	Leaf	0.5	3.0	-0.4548985090553243	--
Ginkgo biloba	Seed	1.0	3.0	-0.6293316926390775	USDA's Ag Handbook 8 and sequelae)
Eleutherococcus senticosus	Root	0.6	3.0	-0.5100505761569326	--
Ginkgo biloba	Leaf	0.7	3.0	-0.4548985090553243	--
Annona muricata	Fruit		2.7	-0.3857340421696469	--
Tabebuia heptaphylla	Bark	0.5	2.7	-0.6585123204031375	--
Angelica sinensis	Root	0.6	2.6	-0.5148269484931834	--
Manihot esculenta	Root	0.5	2.5	-0.516021041577246	--
Medicago sativa	Plant	0.5	2.5	-0.6769869715512199	--
Juglans nigra	Pericarp	0.3	2.4		--
Gentiana lutea	Root	0.5	2.3	-0.5184092277453715	--
Cnicus benedictus	Plant	0.3	2.1	-0.679853846010259	--
Passiflora incarnata	Flower	0.2	2.1	-0.38528752856607995	--
Trigonella foenum-graecum	Seed	0.3	2.1	-0.640542768950903	--
Gymnema sylvestre	Leaf	0.4	2.0	-0.45656096751768344	--
Asparagus officinalis	Root	0.2	2.0	-0.5219915069975595	--
Ulmus rubra	Bark	0.3	1.9	-0.6638645681955431	--
Panax ginseng	Root	0.4	1.9	-0.5231856000816221	--
Musa x paradisiaca	Fruit	0.6	1.8	-0.3916685247648986	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Murraya sp	Fruit	0.6	1.8	-0.3916685247648986	--
Plantago psyllium	Seed	0.4	1.6	-0.646771144679695	--
Plantago major	Seed	0.5	1.6	-0.646771144679695	--
Allium sativum var. sativum	Root	0.5	1.4	-0.5291560655019355	--
Capsicum annuum	Fruit	0.4	1.4	-0.39430607258501055	--
Frangula purshiana	Bark	0.4	1.4	-0.6672097230657966	--
Cimicifuga racemosa	Root	0.3	1.4	-0.5291560655019355	--
Actaea racemosa	Root		1.4	-0.5291560655019355	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Crataegus laevigata	Fruit	0.4	1.4	-0.39430607258501055	--
Spondias dulcis	Fruit		1.2	-0.39562484649506663	--
Carica papaya	Fruit	0.1	1.0	-0.3969436204051225	--
Genipa americana	Fruit		1.0	-0.3969436204051225	--
Parthenium integrifolium	Root	0.2	1.0	-0.5339324378381862	--
Spondias tuberosa	Fruit		0.95	-0.3972733138826366	--
Inula helenium	Root	0.2	0.8	-0.5363206240063116	--
Yucca baccata	Root	0.1	0.6	-0.5387088101744371	--
Aloe vera	Leaf		0.6	-0.45888840936498615	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
Aloe spp.	Leaf		0.6	-0.45888840936498615	--
Avena sativa	Plant	0.1	0.5	-0.6913213438464151	--
Acacia catechu	Plant				--
Alpinia officinarum	Plant				--
Panax ginseng	Fruit				--
Portulaca oleracea	Plant				--
Panax ginseng	Stem				--
Acacia nilotica	Plant				--
Astragalus membranaceus	Root				--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Nasturtium officinale	Plant				--
Dioscorea alata	Plant				--
Amorphophallus konjac	Root				--
Crataegus laevigata	Flower				--
Inula helenium	Plant				--
Panax ginseng	Leaf				--
Panax ginseng	Pt				--