

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Malus domestica*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ZIRCONIUM	Fruit	0.22	0.86	-0.546541741871023	--
77	ZINC	Fruit	0.0	35.0	0.1413570623516533	--
3	XYLOSE	Plant				--
0	WATER	Fruit	809000.0	896000.0	0.5453564376102144	--
0	VOMIFOLIOL-1-O-BETA-D-XYLOPYRANOSYL-6-O-BETA-D-GLUCOPYRANOSIDE	Plant				--
0	VOMIFOLIOL-1-O-BETA-D-XYLOPYRANOSYL-6-O-BETA-D-GLUCOPYRANOSIDE	Fruit				--
0	VIT-B-6	Fruit	1.0	3.0	-0.8751338727185397	--
3	VALINE	Fruit	40.0	560.0	-0.8032333881374735	--
0	VALERALDEHYDE	Fruit				--
89	URSOLIC-ACID	Pericarp				--
89	URSOLIC-ACID	Wax				--
89	URSOLIC-ACID	Fruit Epidermis				--
0	URONIC-ACID	Fruit	7.0	1440.0		--
8	TYROSINE	Fruit	40.0	249.0	-0.8990776765345502	--
29	TRYPTOPHAN	Fruit	20.0	124.0	-1.0195295627538696	--
0	TRIGLYCERIDE	Plant	45.0	50.0		--
3	TRIACONTANOL	Plant				--
0	TRANS-N-HEX-3-EN-1-OL	Plant				--
0	TRANS-N-HEX-2-EN-1-OL	Plant				--
0	TRANS-ABSCISIC-ACID	Fruit Juice				--
0	TRANS-ABSCISIC-ACID	Fruit				--
0	TRANS-2-HEXENOIC-ACID	Plant				--
0	TITANIUM	Fruit	0.055	3.0	-0.6858409400678522	--
4	TIN	Fruit		0.0	-0.3771396188984718	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
4	THREONINE	Fruit	30.0	435.0	-1.0736073129874002	--
31	THIAMIN	Fruit	1.0	2.0	-0.4266044741562528	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	TETRADECYL-ACETATE	Leaf				--
0	TETRADECENYL-ACETATE	Leaf				--
14	SULFUR	Fruit	1.65	23.0	-0.9685087927350676	--
0	SUGAR	Fruit	60100.0	166000.0	-0.15008461399428302	--
14	SUCROSE	Fruit	24000.0	36200.0	-0.49014841841433165	--
7	SUCCINIC-ACID	Plant				--
0	STRONTIUM	Fruit	0.165	8.6	-0.9690625512009637	--
8	STEARIC-ACID	Fruit	70.0	435.0	-0.25037310927026857	--
8	STEARIC-ACID	Seed				Fathy, M. M., Abd El Megid, R. M. 1995. A Comparative Study of the Lipid Contents and the Antimicrobial Activity of Certain Rosaceous Seeds. Zagazig J Pharm Sci, 4(2): 121-127.
1	SPERMINE	Bud				Wang, S. Y., Faust, M. 1994. Changes in Polyamine Content During Dormancy in Flower Buds of 'Anna' Apple. J. Amer. Soc. Hort. Sci., 119(1): 70-73.
1	SPERMIDINE	Bud				Wang, S. Y., Faust, M. 1994. Changes in Polyamine Content During Dormancy in Flower Buds of 'Anna' Apple. J. Amer. Soc. Hort. Sci., 119(1): 70-73.
11	SORBITOL	Leaf				--
1	SODIUM	Fruit	0.0	133.0	-0.1713385458263085	--
9	SINAPIC-ACID	Fruit				--
3	SILVER	Fruit	0.011	0.086	-0.4995614833070808	--
4	SILICON	Fruit	0.0	70.0	-0.3810148443665756	--
14	SHIKIMIC-ACID	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SFA	Fruit	580.0	3610.0	-0.29989489934752117	USDA's Ag Handbook 8 and sequelae)
1	SERINE	Fruit	80.0	497.0	-1.1107007920496865	USDA's Ag Handbook 8 and sequelae)
60	SELENIUM	Fruit		0.0	-0.38618723699673646	--
7	SALICYLATES	Fruit	0.8	60.0	-0.16469419114376535	--
87	RUTIN	Fruit				--
87	RUTIN	Fruit Juice				--
87	RUTIN	Fruit Epidermis				--
87	RUTIN	Leaf	0.0	8885.0	-0.45294433702030634	--
87	RUTIN	Pericarp				--
0	RUBIDIUM	Fruit	0.27	10.0	-0.6798204139542442	ACTA AGRIC SCAND SUPPL 22: 1980
0	ROSEOSIDE	Leaf				Winterhalter, P., Guldner, A., Guldner, A., Jakob, U., Schreier, P. 1994. 3-hydroxy-5,6-epoxy-beta-ionyl-beta-d-glucopyranoside from Malus domestica leaves. Nat. Prod. Lett., 4(1): 57-60.
15	RIBOFLAVIN	Fruit		1.3	-0.7944081953947483	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
2	REYNOUTRIN	Fruit Juice				--
2	REYNOUTRIN	Pericarp				--
2	REYNOUTRIN	Fruit				--
44	QUERCITRIN	Leaf	600.0	9015.0	1.7298124819748746	--
44	QUERCITRIN	Pericarp				--
44	QUERCITRIN	Fruit Juice				--
44	QUERCITRIN	Fruit				--
0	QUERCETIN-XYLOSIDE	Pericarp	9.0	19.0		--
0	QUERCETIN-GLUCOSIDE	Pericarp	9.0	20.0		--
0	QUERCETIN-GALACTOSIDE	Pericarp	28.0	60.0		--
0	QUERCETIN-ARABINOSIDE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	QUERCETIN-ARABINOSIDE	Pericarp	18.0	37.0		--
0	QUERCETIN-3-RHAMNOSIDE	Pericarp	19.0	39.0		--
4	QUERCETIN-3-RHAMNOGLUCOSIDE	Plant				--
0	QUERCETIN-3-O-XYLOSIDE	Fruit Epidermis				--
0	QUERCETIN-3-O-RUTINOSIDE	Plant				--
1	QUERCETIN-3-O-RHAMNOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	QUERCETIN-3-O-BETA-D-GLUCOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	QUERCETIN-3-O-ALPHA-GALACTOSIDE	Fruit Epidermis				--
0	QUERCETIN-3-O-ALPHA-ARABINOFURANOSIDE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	QUERCETIN-3-O-RUTINOSIDE	Plant				--
176	QUERCETIN	Fruit	2.5	41.0	-0.582618968173555	--
176	QUERCETIN	Pericarp	58.0	263.0	1.0	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
176	QUERCETIN	Heart Wood				--
1	PYRUVIC-ACID	Plant				--
1	PYRROLIDINE	Pericarp		1.5		--
1	PYRROLIDINE	Fruit Epidermis		1.5		--
0	PYROXIDINE	Plant				--
0	PUTRESCINE	Bud				Wang, S. Y., Faust, M. 1994. Changes in Polyamine Content During Dormancy in Flower Buds of 'Anna' Apple. J. Amer. Soc. Hort. Sci., 119(1): 70-73.
4	PUFA	Fruit	1050.0	6535.0	-0.3716987814442892	USDA's Ag Handbook 8 and sequelae)
43	PROTocatechuic-Acid	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROTEIN	Fruit	1870.0	12800.0	-1.2962859772396575	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	PROPYL-PROPIONATE	Plant				--
0	PROPYL-N-PENTANOATE	Plant				--
0	PROPYL-FORMATE	Plant				--
0	PROPYL-BUTYRATE	Fruit				--
0	PROPYL-BUTYRATE	Plant				--
0	PROPYL-ACETATE	Fruit				--
0	PROPYL-ACETATE	Plant				--
0	PROPYL-2-METHYLBUTYRATE	Plant				--
2	PROPIONALDEHYDE	Fruit				--
0	PROPANOL	Plant				--
0	PROLINE	Plant	20.0	435.0	-1.0472597877182985	--
27	PROCYANIDINS	Leaf				--
0	PROCYANIDIN-OLIGOMERS	Fruit				--
0	PROCYANIDIN-G	Leaf				--
0	PROCYANIDIN-E	Leaf				--
0	PROCYANIDIN-D-1	Leaf				--
0	PROCYANIDIN-C-1	Pericarp				--
0	PROCYANIDIN-C-1	Fruit Juice				--
0	PROCYANIDIN-C-1	Leaf				--
0	PROCYANIDIN-C-1	Fruit				--
0	PROCYANIDIN-B-5	Leaf				--
4	PROCYANIDIN-B-4	Leaf				--
1	PROCYANIDIN-B-2	Pericarp	15.0	100.0		--
1	PROCYANIDIN-B-2	Fruit	2.0	10.0		--
1	PROCYANIDIN-B-2	Leaf	150.0	900.0	0.9999999999999998	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	PROCYANIDIN-B-2	Fruit Juice				--
1	PROCYANIDIN-B-1	Fruit Juice				--
1	PROCYANIDIN-B-1	Fruit				--
1	PROCYANIDIN-B-1	Pericarp				--
1	PROCYANIDIN-B-1	Leaf				--
17	PROCYANIDIN-A-2	Leaf				--
14	POTASSIUM	Fruit	1110.0	12140.0	-0.5110685274797335	--
0	POMONIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	POMOLIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	POLYPHENOLASE	Plant				--
0	POLYGALACTURONASE	Plant				--
0	POLYGALACTOSYL-DIGLYCERIDE	Plant				--
0	PIPECOLINIC-ACID	Plant				--
2	PHYTOSTEROLS	Fruit	120.0	745.0	-0.2581394518581099	USDA's Ag Handbook 8 and sequelae)
0	PHYTATE	Fruit	630.0	4040.0	-0.2108482779177121	--
5	PHYLLOQUINONE	Fruit		0.06	-0.22359887323159108	--
4	PHOSPHORUS	Fruit	68.0	925.0	-0.6958662309301713	--
0	PHOSPHATIDYLIC-ACID	Fruit	3.0	6.0		--
0	PHOSPHATIDYL-SERINE	Fruit		4.0		--
0	PHOSPHATIDYL-INOSITOL	Fruit	53.0	59.0		--
0	PHOSPHATIDYL-GLYCEROL	Fruit	8.0	27.0		--
0	PHOSPHATIDYL-ETHANOLAMINE	Fruit	101.0	124.0		--
2	PHOSPHATIDYL-CHOLINE	Fruit	189.0	214.0		--
8	PHLORIZIN	Pericarp				--
8	PHLORIZIN	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	PHLORIZIN	Leaf				--
8	PHLORIDZIN	Fruit Juice				--
8	PHLORIDZIN	Leaf	54000.0	140000.0	1.0	--
0	PHLORETIN-XYLOSIDE	Fruit Juice				--
0	PHLORETIN-XYLOGLUCOSIDE	Pericarp	7.0	27.0		--
0	PHLORETIN-XYLOGLUCOSIDE	Fruit	1.0	3.0		--
1	PHLORETIN-GLUCOSIDE	Pericarp	10.0	15.0		--
1	PHLORETIN-GLUCOSIDE	Fruit		1.0		--
0	PHLORETIN-4'-O-BETA-D-GLUCOPYRANOSIDE	Leaf		6486.0		--
0	PHLORETIN-4'-O-BETA-D-GLUCOPYRANOSIDE	Fruit		6486.0		--
0	PHLORETIN-2'-XYLOGLUCOSIDE	Fruit Juice				--
9	PHLORETIN	Leaf	300.0	11000.0		--
0	PHLORETAMIDE	Fruit				--
0	PHENYLBENZOATE	Fruit				--
7	PHENYLALANINE	Fruit	50.0	311.0	-1.0455516744717288	--
0	PHENOLICS	Plant	1100.0	3400.0	-1.0	--
0	PEROXIDASE	Plant				--
0	PENTYL-HEXANOATE	Plant				--
0	PENTYL-BUTYRATE	Plant				--
0	PENTANOL	Plant				--
0	PENTAN-2-ONE	Fruit				--
0	PECTIN-DEMETHOXYXYLASE	Plant				--
24	PECTIN	Fruit	1400.0	66585.0	0.16029071562128944	--
0	PECTASE	Plant				--
11	PANTOTHENIC-ACID	Fruit	1.0	4.0	-0.8996713902808875	USDA's Ag Handbook 8 and sequelae)
2	PALMITOLEIC-ACID	Fruit	10.0	62.0	-0.3340992517515945	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	PALMITIC-ACID	Fruit	480.0	2986.0	-0.31904990505316816	--
13	PALMITIC-ACID	Seed				Fathy, M. M., Abd El Megid, R. M. 1995. A Comparative Study of the Lipid Contents and the Antimicrobial Activity of Certain Rosaceous Seeds. Zagazig J Pharm Sci, 4(2): 121-127.
13	P-HYDROXY-BENZOIC-ACID	Fruit				--
0	P-COUMARYL-QUINIC-ACID	Fruit				--
0	P-COUMARIC-ACID-2	Leaf	0.0	185.0		--
0	P-COUMARIC-ACID-1	Leaf	0.0	320.0		--
25	P-COUMARIC-ACID	Fruit	15.0	460.0	1.836295249622603	--
25	P-COUMARIC-ACID	Leaf				--
0	OXALOACETIC-ACID	Plant				--
9	OXALIC-ACID	Plant				--
18	OLEIC-ACID	Fruit	140.0	871.0	-0.4740320725940964	--
0	OCTENOIC-ACID	Plant				--
0	OCTANE-1,3-DIOL-GLYCOSIDE	Fruit Juice				--
0	OCTANE-1,3-DIOL	Fruit Juice				--
6	OCTACOSANOL	Plant				--
0	OCTA-TRANS-3-CIS-5-DIEN-1-OL-ACETATE	Essential Oil				--
0	OCTA-TRANS-3-CIS-5-DIEN-1-OL	Essential Oil				--
0	OCTA-CIS-3-CIS-5-DIEN-1-OL-ACETATE	Essential Oil				--
0	OCTA-CIS-3-CIS-5-DIEN-1-OL	Essential Oil				--
0	OCT-CIS-5-ENE-1,3-DIOL-GLYCOSIDE	Fruit Juice				--
0	OCT-CIS-5-ENE-1,3-DIOL	Fruit Juice				--
0	NONENOIC-ACID	Plant				--
2	NONACOSANE	Plant				--



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	NITROGEN	Fruit	280.0	4000.0	-0.7448119387296798	ACTA AGRIC SCAND SUPPL 22: 1980
3	NICKEL	Fruit	0.004	0.645	-0.5833033975627046	--
39	NIACIN	Fruit	1.0	7.0	-0.7178505836876389	--
2	NEOXANTHIN	Fruit Epidermis				--
2	NEO-CHLOROGENIC-ACID	Plant				--
0	N-PROPIONIC-ACID	Plant				--
0	N-PROPANOL	Plant				--
0	N-PENTYL-OCTANOATE	Plant				--
0	N-PENTYL-FORMATE	Plant				--
0	N-PENTYL-DECANOATE	Plant				--
0	N-PENTYL-AMINE	Fruit		0.3	-0.9999999999999999	--
0	N-PENTYL-2-METHYLBUTYRATE	Plant				--
0	N-PENTENOIC-ACID	Plant				--
0	N-PENTANOIC-ACID	Plant				--
0	N-OCTANONE	Plant				--
0	N-OCTANOL-2-OCTANOL	Plant				--
0	N-OCTACOSANE	Seed				Fathy, M. M., Abd El Megid, R. M. 1995. A Comparative Study of the Lipid Contents and the Antimicrobial Activity of Certain Rosaceous Seeds. Zagazig J Pharm Sci, 4(2): 121-127.
0	N-NONANOL-2-NONANOL	Plant				--
0	N-NONANOIC-ACID	Plant				--
0	N-NONADECANE	Seed				Fathy, M. M., Abd El Megid, R. M. 1995. A Comparative Study of the Lipid Contents and the Antimicrobial Activity of Certain Rosaceous Seeds. Zagazig J Pharm Sci, 4(2): 121-127.
0	N-METHYL-PHENETHYLAMINE	Fruit		1.2		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	N-METHYL-PHENETHYLAMINE	Exocarp		1.3		--
0	N-METHYL-PHENETHYLAMINE	Pericarp		1.3		--
0	N-METHYL-BETA-PHENETHYLAMINE	Fruit		1.2		--
1	N-HEXYL-PROPIONATE	Plant				--
1	N-HEXYL-PROPIONATE	Fruit				--
0	N-HEXYL-OCTANOATE	Plant				--
0	N-HEXYL-N-HEXANOATE	Plant				--
0	N-HEXANOL	Plant				--
0	N-HEX-1-EN-3-OL	Plant				--
0	N-HEPTANOL	Plant				--
0	N-HEPTANOIC-ACID	Plant				--
0	N-HEHYL-N-HEXANOATE	Plant				--
0	N-DECANOL	Plant				--
0	N-COUMARYL-QUINIC-ACID	Plant				--
1	N-BUTYL-PROPIONATE	Plant				--
1	N-BUTYL-PROPIONATE	Fruit				--
0	N-BUTYL-OCTANOATE	Plant				--
0	N-BUTYL-N-HEXANOATE	Plant				--
1	N-BUTYL-FORMATE	Plant				--
0	N-BUTYL-DECANOATE	Plant				--
0	N-BUTANOL	Plant				--
0	N-ALPHA-ACETYL-L-ARGININE	Stem				--
0	N-ALPHA-ACETYL-L-ARGININE	Shoot				--
0	N-ALPHA-ACETYL-ARGININE	Shoot				--
0	N-ALPHA-ACETYL-AGGININE	Shoot				--
0	N-1-N-5-N-10-TRI-TRANS-4-COUMAROYL-SPERMIDINE	Flower				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MYRISTIC-ACID	Fruit	20.0	124.0	-0.26329389964394695	--
34	MYRICETIN	Fruit		0.5	-0.7536633445071549	--
0	MYO-INOSITOL	Pollen Or Spore		4500.0		--
13	MUFA	Fruit	150.0	935.0	-0.24039423421132997	USDA's Ag Handbook 8 and sequelae)
0	MONOGALACTOSYL-DIGLYCERIDE	Plant	12.0	42.0		--
2	MOLYBDENUM	Fruit	0.077	0.43	-0.3990584824882058	--
0	MEVALONIC-ACID	Fruit	30.0	36.0	1.9898059802462824	--
0	METHYL-VINYL-KETONE	Fruit				--
0	METHYL-VALERATE	Fruit				--
0	METHYL-PROPIONATE	Plant				--
0	METHYL-NONAN-3-ONE	Fruit				--
0	METHYL-N-PENTANOATE	Plant				--
0	METHYL-I-PENTANOATE	Plant				--
0	METHYL-HEXANOATE	Plant				--
0	METHYL-GUANIDINE	Stem				--
0	METHYL-GUANIDINE	Shoot				--
0	METHYL-FORMATE	Plant				--
2	METHYL-CAPROATE	Plant				--
2	METHYL-BUTYRATE	Plant				--
2	METHYL-BUTYRATE	Fruit				--
4	METHYL-BENZOATE	Fruit				--
1	METHYL-AMINE	Fruit Epidermis		4.5		--
1	METHYL-AMINE	Pericarp		4.5		--
1	METHYL-AMINE	Fruit		5.6		--
3	METHYL-ACETATE	Plant				--
0	METHYL-2-XI-ACETOXY-20-BETA-HYDROXY-URSONATE	Pericarp				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-2-XI-ACETOXY-20-BETA-HYDROXY-URSONATE	Fruit Epidermis				--
2	METHYL-2-METHYL-BUTYRATE	Plant				--
15	METHIONINE	Plant	20.0	124.0	-0.9578509469925256	--
2	METHANOL	Plant				--
1	MERCURY	Fruit	0.0	0.02	0.10095423065636192	--
23	MELATONIN	Fruit				Hattori, A., et. al. 1995. Identification of Melatonin in Plants and its Effects on Plasma Melatonin Levels and Binding to Melatonin Receptors in Vertebrates. Biochem. Mol. Biol. Int., 35(3): 627-634.
3	MANNOSE	Plant				--
14	MANGANESE	Fruit	0.0	29.0	-0.2123152729972876	--
0	MALVIDIN-MONOGLYCOSIDE	Plant				--
65	MAGNESIUM	Fruit	48.0	478.0	-0.7648501234386748	--
4	LYSINE	Fruit	20.0	746.0	-0.8724121045963826	--
0	LUTEOXANTHIN	Fruit				--
78	LUTEOLIN	Heart Wood				--
15	LUTEIN	Fruit	0.4	5.0	-0.4027761600563295	--
11	LITHIUM	Fruit	0.044	0.172	-0.8448748858580687	--
0	LINOLENIC-ACID	Fruit	870.0	5411.0	-0.1866295815550338	--
2	LEUCINE	Fruit	120.0	746.0	-0.9258535515942413	--
20	LECITHIN	Plant				--
0	LEAD	Fruit	0.002	64.0	3.294104898397132	--
7	LAURIC-ACID	Fruit	10.0	63.0	-0.44474745342800637	--
8	LACTIC-ACID	Plant				--
0	L-QUINIC-ACID	Plant				--
0	L-MALIC-ACID	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	L-EPICATECHIN	Fruit				--
1	L-ARGININE	Stem				--
1	L-ARGININE	Shoot				--
0	KILOCALORIES	Fruit		3419.0	-0.36687576531452953	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
75	KAEMPFEROL	Fruit		2.0	-0.5794291374991353	--
0	JASMONIC-ACID	Fruit				--
1	ISOVALERALDEHYDE	Fruit				--
22	ISOQUERCITRIN	Pericarp				--
22	ISOQUERCITRIN	Fruit Juice				--
22	ISOQUERCITRIN	Fruit				--
3	ISOQUERCETIN	Fruit Juice				--
0	ISOPROPYL-BUTYRATE	Plant				--
4	ISOPROPYL-ACETATE	Fruit				--
3	ISOLEUCINE	Fruit	50.0	497.0	-0.9433250929721118	--
0	ISOCITRIC-ACID	Plant				--
4	ISOCHLOROGENIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
0	ISOBUTYL-FORMATE	Plant				--
0	ISOBUTYL-BUTYRATE	Plant				--
3	ISOBUTYL-ACETATE	Plant				--
0	ISOAMYL-PROPIONATE	Plant				--
0	ISOAMYL-BUTYRATE	Plant				--
0	ISOAMYL-BUTYRATE	Fruit				--
2	ISOAMYL-ACETATE	Fruit				--
6	IRON	Fruit	1.1	123.0	-0.039580333705947705	--
12	IODINE	Plant				--
8	INOSITOL	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	INDOLE-3-ACETIC-ACID	Stem Bark				--
7	INDOLE-3-ACETIC-ACID	Leaf				--
7	INDOLE-3-ACETIC-ACID	Plant				Stitt, Paul. Why George should eat broccoli.
0	IDAEIN	Plant				--
0	I-PROPANOL	Plant				--
0	I-PENTYL-I-PENTANOATE	Plant				--
0	I-PENTYL-FORMATE	Plant				--
0	I-PENTANOL	Plant				--
0	I-PENTANOIC-ACID	Plant				--
0	I-HEXANOIC-ACID	Plant				--
0	I-DECANOIC-ACID	Plant				--
0	I-BUTYL-PROPIOANTE	Plant				--
0	I-BUTYL-OCTANOATE	Plant				--
30	HYPEROSIDE	Heart Wood				--
30	HYPEROSIDE	Fruit Juice				--
30	HYPEROSIDE	Pericarp				--
30	HYPEROSIDE	Fruit				--
14	HYPERIN	Plant				--
0	HYDROXYCINNAMIC-ACID	Fruit		1340.0		--
7	HISTIDINE	Fruit	30.0	187.0	-1.0696353953245137	--
1	HEXYL-FORMATE	Plant				--
1	HEXYL-BUTYRATE	Plant				--
1	HEXYL-BUTYRATE	Fruit				--
1	HEXYL-ACETATE	Plant				--
1	HEXYL-ACETATE	Fruit				--
3	HEXANOL	Plant				--
5	HEXANAL	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HEXACOSANOL	Plant				--
0	HEPTENOIC-ACID	Plant				--
0	HEPTACOSANE	Plant				--
0	HEMICELLULOSE	Plant				--
0	GUANIDINOSUCCINIC-ACID	Shoot				--
0	GUANIDINOACETIC-ACID	Stem				--
0	GUANIDINOACETIC-ACID	Shoot				--
6	GUANIDINE	Stem				--
6	GUANIDINE	Shoot				--
1	GLYOXYLIC-ACID	Plant				--
4	GLYCOLIC-ACID	Plant				--
12	GLYCINE	Plant	80.0	497.0	-0.8208359653564842	--
3	GLYCERIC-ACID	Plant				--
5	GLUTAMINE	Plant		20.0		--
8	GLUTAMIC-ACID	Fruit	156.0	1244.0	-0.9333642189445454	--
7	GLUCOSE	Fruit	17200.0	18200.0	-0.7019443383136035	--
0	GLUCOCEREBROSIDE	Plant	34.0	49.0		--
0	GIBBERELLIN-A-62	Seed				--
35	GERANIOL	Plant				--
0	GAMMA-METHYL-PROLINE	Plant				--
0	GAMMA-GUANIDINOPROPIONIC-ACID	Stem				--
0	GAMMA-GUANIDINOPROPIONIC-ACID	Shoot				--
0	GAMMA-GUANIDINOBTYRIC-ACID	Shoot				--
0	GAMMA-GUANIDINOBTYRIC-ACID	Stem				--
0	GAMMA-GUANIDINOBTYRIC-ACID	Shoot				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-GUANIDINOBUTRAMIDE	Stem				--
62	GALLIC-ACID	Fruit				--
62	GALLIC-ACID	Pericarp				--
0	GALACTARIC-ACID	Plant				--
0	GALACTANASE	Plant				--
7	FUMARIC-ACID	Plant				--
8	FRUCTOSE	Fruit	50100.0	60800.0	0.04916971831634761	--
2	FRIEDELIN	Heart Wood				--
0	FR	Plant				--
13	FORMIC-ACID	Plant				--
15	FOLACIN	Fruit	0.02	0.2	-0.7547576455042277	USDA's Ag Handbook 8 and sequelae)
0	FLUORINE	Fruit	0.1	2.1	0.7378739376517985	ACTA AGRIC SCAND SUPPL 22: 1980
15	FIBER	Fruit	5200.0	49636.0	-0.8685372806832163	USDA's Ag Handbook 8 and sequelae)
61	FERULIC-ACID	Fruit	4.0	95.0	1.7162326606420661	--
0	FAT	Seed	180000.0	230000.0	-0.1863991011784708	--
0	FAT	Fruit	3210.0	34200.0	-0.3800352407430785	--
2	FARNESENE	Fruit Epidermis				--
2	FARNESENE	Pericarp				--
0	ETHYL-VALERIANATE	Plant				--
1	ETHYL-VALERATE	Fruit				--
1	ETHYL-PROPIONATE	Plant				--
1	ETHYL-PROPIONATE	Fruit				--
0	ETHYL-PHENACETATE	Plant				--
0	ETHYL-PENTANOATE	Plant				--
0	ETHYL-OCTANOATE	Plant				--
1	ETHYL-NONANOATE	Plant				--



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ETHYL-METHYLBUTYRATE	Plant				--
2	ETHYL-ISOBUTYRATE	Fruit				--
2	ETHYL-ISOBUTYRATE	Plant				--
0	ETHYL-HEXANOATE	Plant				--
1	ETHYL-FORMATE	Fruit				--
0	ETHYL-DODECANOATE	Plant				--
0	ETHYL-DECENOATE	Plant				--
0	ETHYL-CROTONATE	Plant				--
0	ETHYL-CAPROATE	Plant				--
1	ETHYL-BUTYRATE	Plant				--
0	ETHYL-AMINE	Fruit		3.0		--
6	ETHYL-ACETATE	Fruit				--
6	ETHYL-ACETATE	Plant				--
24	ETHANOL	Plant				--
8	ESTRONE	Seed	0.1	0.13	-1.0000000000000002	--
12	ESTRAGOLE	Essential Oil				--
1	EPSILON-CAROTENE	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
40	EPICATECHIN	Pericarp	20.0	80.0		--
40	EPICATECHIN	Fruit	4.0	11.0		--
0	EO	Fruit	25.0	35.0	-0.8192816022307305	--
0	DIPHOSPHATIDYL-GLYCEROL	Fruit	4.0	6.0		--
0	DIHYDROXYTRICARBALLYLIC-ACID	Fruit		1.0		--
0	DIGALACTOSYL-DIGLYCERIDE	Fruit	49.0	107.0		--
2	DIETHYL-AMINE	Fruit		3.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	DIASTASE	Plant				--
0	DEHYDROASCORBIC-ACID	Plant				--
0	DECENOIC-ACID	Plant				--
0	D-L-NONACOSANOL	Plant				--
0	D-GLUCONIC-ACID	Plant				--
0	D-GALACTURONIC-ACID	Plant	13.0	54.0		--
4	D-CATECHIN	Fruit				--
0	D-2-METHYLBUTAN-1-OL	Plant				--
2	CYSTINE	Plant	30.0	187.0	-1.078139109591067	--
0	CYANIDIN-7-ARABINOSIDE	Plant				--
0	CYANIDIN-3-GALACTOSIDE	Plant				--
0	CYANIDIN-3-ARABINOSIDE	Plant				--
0	CYANIDIN-3,5-DIGLUCOSIDE	Cotyledon				--
7	CYANIDIN	Leaf				--
0	CUTIN	Fruit Epidermis				--
0	CREATINE	Stem				--
0	CREATINE	Shoot				--
0	COUMARIC-ACID	Plant				--
4	COSMOSIIN	Heart Wood				--
12	COPPER	Fruit	0.24	4.0	-0.6863742487163819	--
2	COBALT	Fruit	0.005	0.043	-0.5299096696083117	--
23	CITRIC-ACID	Plant				--
0	CITRAMALIC-ACID	Plant				--
0	CIS-N-HEX-3-EN-1-OL	Plant				--
0	CIS-2,TRANS-4-ABSCISIC-ACID	Stem Bark				--
0	CIS-2,TRANS-4-ABSCISIC-ACID	Bark				--
60	CINNAMALDEHYDE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	CHROMIUM	Fruit	0.005	0.3	-0.4654957769727276	--
21	CHLOROPHYLL	Fruit	0.0	1.0	-0.9710352631864654	--
77	CHLOROGENIC-ACID	Leaf	100.0	1200.0	-1.3240006985895736	--
77	CHLOROGENIC-ACID	Pt				--
77	CHLOROGENIC-ACID	Seed				--
77	CHLOROGENIC-ACID	Fruit Juice				--
77	CHLOROGENIC-ACID	Fruit	5.0	15.0	-1.0935971883111022	--
77	CHLOROGENIC-ACID	Pericarp	8.0	18.0		--
1	CATALASE	Plant				--
0	CAROTENOIDS	Plant	0.0	126.0		--
0	CARBOHYDRATES	Fruit	152250.0	948550.0	0.8859136568099041	--
0	CAPRYLIC-ESTER	Plant				--
0	CAPROIC-ACID-AMYL-ESTER	Plant				--
0	CAPROALDEHYDE	Plant				--
2	CAMPESTEROL	Fruit	10.0	60.0	-0.14986892201478846	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
4	CALCIUM-OXALATE	Plant				--
28	CALCIUM	Fruit	43.0	570.0	-0.75834467805693	--
102	CAFFEIC-ACID	Fruit Juice				--
102	CAFFEIC-ACID	Fruit	85.0	1270.0	-0.10378621224302456	--
0	CAFFEETANNIN	Plant				--
3	CADMIUM	Fruit	0.002	0.026	-0.5672128851607269	--
0	BUTYL-VALERIANATE	Plant				--
0	BUTYL-PROPIONATE	Plant				--
0	BUTYL-CAPROATE	Plant				--
0	BUTYL-BUTYRATE	Plant				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BUTYL-ACETATE	Fruit				--
0	BUTYL-ACETATE	Plant				--
0	BUTANOL	Plant				--
0	BUTANAL	Fruit				--
0	BUTAN-2-ONE	Fruit				--
0	BROMINE	Fruit		1.0	-0.42563543443835	ACTA AGRIC SCAND SUPPL 22: 1980
4	BORON	Fruit	1.0	110.0	1.410811087811246	--
4	BIOTIN	Plant				--
47	BETA-SITOSTEROL	Fruit	110.0	660.0	0.07292039240169416	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
47	BETA-SITOSTEROL	Seed				Fathy, M. M., Abd El Megid, R. M. 1995. A Comparative Study of the Lipid Contents and the Antimicrobial Activity of Certain Rosaceous Seeds. Zagazig J Pharm Sci, 4(2): 121-127.
47	BETA-SITOSTEROL	Heart Wood				--
0	BETA-CAROTENE-5,6-EPOXIDE	Fruit				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
53	BETA-CAROTENE	Fruit	0.0	76.0	-0.0038939984397263717	--
2	BETA-ALANINE	Fruit				--
0	BENZYL-AMINE	Fruit Epidermis		0.6		--
0	BENZYL-AMINE	Fruit	0.3	3.0		--
0	BENZYL-AMINE	Pericarp		0.6		--
9	BENZYL-ACETATE	Plant				--
20	BENZOIC-ACID	Plant				--
20	BENZOIC-ACID	Leaf	98.0	710.0	1.3479809099758226	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BARIUM	Fruit	0.22	8.6	-0.8622422515184034	--
7	AVICULARIN	Fruit				--
7	AVICULARIN	Fruit Juice				--
7	AVICULARIN	Leaf	0.0	1425.0		--
7	AVICULARIN	Pericarp				--
3	ASPARTIC-ACID	Fruit	210.0	2115.0	-1.056731649443471	USDA's Ag Handbook 8 and sequelae)
2	ASPARAGINE	Fruit		171.0	-0.825458790451801	--
0	ASH	Fruit	2300.0	43000.0	-0.3538278176314037	--
0	ASCORBIDASE	Plant				--
112	ASCORBIC-ACID	Fruit	20.0	402.0	-0.2594938543964892	--
2	ARSENIC	Fruit	0.001	0.43	0.014133429185321438	--
0	AROMADENDRIN-3-O-BETA-D-GLUCOSIDE	Heart Wood				--
14	ARGININE	Fruit	60.0	373.0	-1.0500818434124615	USDA's Ag Handbook 8 and sequelae)
0	ARABINOSE	Plant				--
101	APIGENIN	Heart Wood				--
0	ANILINE	Fruit Epidermis		1.7		--
0	ANILINE	Fruit		1.5		--
0	ANILINE	Pericarp		1.7		--
0	AMYL-PROPIONATE	Plant				--
1	AMYL-FORMATE	Fruit				--
3	AMYL-BUTYRATE	Plant				--
3	AMYL-BUTYRATE	Fruit				--
0	AMYL-ACETATE	Plant				--
0	AMYL-ACETATE	Fruit				--
8	AMYGDALIN	Seed	6000.0	13800.0	-0.8422024808761887	--
0	AMMONIA(NH3)	Fruit Epidermis	235.0	1029.0		--
0	AMMONIA	Fruit		235.0	-1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	AMMONIA	Pericarp		1029.0		--
5	ALUMINUM	Fruit	0.4	129.0	-0.18599251654737567	--
32	ALPHA-TOCOPHEROL	Fruit	2.0	37.0	-0.5521025162177928	--
0	ALPHA-OXOGLUTARIC-ACID	Plant				--
15	ALPHA-LINOLENIC-ACID	Fruit	180.0	1120.0	-0.6452626880371877	--
0	ALPHA-FARNESENE	Fruit Epidermis				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	ALPHA-AMINO-BUTYRIC-ACID	Plant				--
0	ALPHA-ALANINE	Fruit				--
3	ALANINE	Fruit	70.0	435.0	-1.2861845168681025	USDA's Ag Handbook 8 and sequelae)
11	ADENINE	Root				--
3	ACETONE	Plant				--
0	ACETIC-ACID-AMYL-ESTER	Plant				--
16	ACETIC-ACID	Plant				--
6	ACETALDEHYDE	Fruit				--
6	ACETALDEHYDE	Fruit Juice				Miyake, T., Shibamoto, T. 1993. Quantitative Analysis of Acetaldehyde in Foods and Beverages. J. Agr. Food Chem, 41(11): 1968-1970.
6	ACETALDEHYDE	Plant				--
0	ABSCISIC-ACID	Fruit				--
0	ABSCISIC-ACID	Fruit Juice				--
0	7-HEXANOIC-ACID	Plant				--
0	6-METHYL-HEPTEN-5-EN-2-ONE	Fruit				--
0	5,6-EPOXY-10'-APO-5,6-DIHYDRO-BETA-CAROTENE-3,10'-DIOL	Plant		20000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	4-P-COUMAROYLQUINIC-ACID	Fruit				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	4-HYDROXYMETHYLPROLINE	Plant				--
0	3-PENTANOL	Plant				--
0	3-HYDROXYPHLORIDZIN	Fruit Juice				--
0	3-HYDROXY-OCTYL-BETA-D-GLUCOSIDE	Fruit				--
0	3-BETA-19-ALPHA-DIHYDROXY-2-OXO-URS-12-EN-28-OIC-ACID	Wood		1000.0		--
0	3,4-BENZOPYRENE	Fruit				--
0	20-HYDROXYURSOLIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	2-PROPANOL	Plant				--
0	2-PHENETHYLACETATE	Plant				--
0	2-PENTANOL	Plant				--
0	2-METHYL-PROPEN-1-AL	Fruit				--
0	2-METHYL-PENTAN-2-OL	Plant				--
0	2-METHYL-BUTAN-2-OL	Plant				--
0	2-METHYL-BUT-3-EN-1-OL	Fruit				--
0	2-METHYL-BUT-2-EN-1-AL	Fruit				--
0	2-METHYL-2,3-EPOXY-PENTANE	Fruit				--
0	2-HEXENAL	Plant				--
0	2-HEPTANOL	Plant				--
0	2-BUTANOL	Plant				--
0	2-(1,1-DIMETHYLETHYL)-CYCLOHECYLACETATE	Fruit				--
0	2,4-METHYLENE-CHOLESTEROL	Pollen Or Spore				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	19-HYDROXYURSONIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	19-HYDROXYURSOLIC-ACID	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	1-OCTYL-ACETATE	Plant				--
0	1-NONYL-ACETATE	Plant				--
0	1-MONOOLEIN	Seed				--
0	1-MONO-LINOLEIN	Seed				--
0	1-DECYL-ACETATE	Plant				--
0	1-BUTANOL	Plant				--
0	1,3,3,-TRIMETHYL-DIOXA-2,7-BICYCLO(2,2,1)HEPTANE	Fruit				--
0	-D-GLUCITOL	Plant				--
0	(Z)-HEX-2-ENAL	Fruit				--
38	(-)-EPICATECHIN	Leaf	150.0	900.0	-0.6820874109972213	--
38	(-)-EPICATECHIN	Pericarp				--
38	(-)-EPICATECHIN	Fruit				--
38	(-)-EPICATECHIN	Fruit Juice				--
0	(+)-EPICATECHIN	Fruit				--
30	(+)-CATECHIN	Bark				--
30	(+)-CATECHIN	Seed				--
30	(+)-CATECHIN	Pt				--
30	(+)-CATECHIN	Pericarp				--
30	(+)-CATECHIN	Fruit				--
30	(+)-CATECHIN	Leaf				--