

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Echinacea spp

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	(+)-TARTARIC-ACID	Plant				Economic & Medicinal Plant Research, 5: 253.
0	(E)-10-HYDROXY-4,10-DIMETHYL-4,11-DODECADIEN-2-ONE	Plant				Economic & Medicinal Plant Research, 5: 253.
0	13-HYDROXYOCTADECA-(9Z,11E,15Z)-TRIENOIC-ACID	Shoot				Economic & Medicinal Plant Research, 5: 253.
0	2,3-O-DIFERULOYLTARTARIC-ACID	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	2-METHYLTETRADECA-5,12-DIENE	Plant				Economic & Medicinal Plant Research, 5: 253.
0	2-METHYLTETRADECA-6,12-DIENE	Plant				Economic & Medicinal Plant Research, 5: 253.
0	2-O-CAFFEYOYL-3-(5-(ALPHA-CARBOXY-BETA-(3,4-DIHYDROXYPHENYL...	Plant				--
0	2-O-CAFFEYOYL-3-O-CUMAROYLTARTARIC-ACID	Shoot				Economic & Medicinal Plant Research, 5: 253.
0	2-O-CAFFEYOYL-3-O-FERULOYLTARTARIC-ACID	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	2-O-CAFFEYOYLTARTARIC-ACID	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	2-O-FERULOYLTARTARIC-ACID	Leaf				Economic & Medicinal Plant Research, 5: 253.
3	3,5-DICAFFEOYL-QUINIC-ACID	Plant				Economic & Medicinal Plant Research, 5: 253.
0	4,5-O-DICAFFEOYLQUINIC-ACID	Plant				Economic & Medicinal Plant Research, 5: 253.
0	6-O-CAFFEYOYLECHINACOSIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	ALKYLAMIDES	Root	40.0	1510.0		Economic & Medicinal Plant Research, 5: 253.
28	ALPHA-PINENE	Fruit				Economic & Medicinal Plant Research, 5: 253.
5	ALUMINUM	Root	786.0	12900.0	6.609103108636193	Economic & Medicinal Plant Research, 5: 253.
101	APIGENIN	Leaf				Economic & Medicinal Plant Research, 5: 253.
6	ARABINOGALACTAN	Root				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
112	ASCORBIC-ACID	Root		843.0	-0.16407727962118843	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
112	ASCORBIC-ACID	Leaf		2140.0	-0.24535536616295778	Economic & Medicinal Plant Research, 5: 253.
0	ASH	Root		80000.0	0.35526479427075014	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	BEHENIC-ACID-ETHYL-ESTER	Root				Economic & Medicinal Plant Research, 5: 253.
53	BETA-CAROTENE	Root		2.2	-0.4223548942066434	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	BETA-FARNESENE	Fruit				Economic & Medicinal Plant Research, 5: 253.
13	BETA-PINENE	Fruit				Economic & Medicinal Plant Research, 5: 253.
47	BETA-SITOSTEROL	Shoot				Economic & Medicinal Plant Research, 5: 253.
14	BETAINE	Root				Economic & Medicinal Plant Research, 5: 253.
35	BORNEOL	Plant				Economic & Medicinal Plant Research, 5: 253.
12	BORNYL-ACETATE	Plant				Economic & Medicinal Plant Research, 5: 253.
102	CAFFEIC-ACID	Plant				--
28	CALCIUM	Root	3290.0	7760.0	0.03911936916970287	Economic & Medicinal Plant Research, 5: 253.
0	CARBONATE	Root		7100.0		Economic & Medicinal Plant Research, 5: 253.
31	CARYOPHYLLENE	Root		42.0	-0.6463900093826075	Economic & Medicinal Plant Research, 5: 253.
6	CARYOPHYLLENE-EPOXIDE	Root		26.0		Economic & Medicinal Plant Research, 5: 253.
0	CHLORIDE	Root		760.0		Economic & Medicinal Plant Research, 5: 253.
77	CHLOROGENIC-ACID	Shoot				Economic & Medicinal Plant Research, 5: 253.
24	CHROMIUM	Root		19.0	3.226984382736168	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
14	CICHORIC-ACID	Root	6000.0	21000.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	CICHORIC-ACID	Flower	12000.0	31000.0		Economic & Medicinal Plant Research, 5: 253.
0	CICHORIC-ACID-METHYL-ESTER	Root	6000.0	21000.0		Economic & Medicinal Plant Research, 5: 253.
2	COBALT	Root		148.0	2.6671392852066766	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	CYANADIN-3-O-(6-O-MALONYL-BETA-D-GLYCOPYRANOSIDE)	Flower				Economic & Medicinal Plant Research, 5: 253.
0	CYANADIN-3-O-(BETA-D-GLYCOPYRANOSIDE)	Flower				Economic & Medicinal Plant Research, 5: 253.
23	CYNARIN	Root				Economic & Medicinal Plant Research, 5: 253.
0	DECA-(2E,4E,6E)-TRIENOIC-ACID-ISOBUTYLAMIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	DES-RHAMNOSYLVERBASCOSIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	DODECA-(2E,4E)-DIENOIC-ACID-ISOBUTYLAMIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	DODECA-(2E,6Z,8E,10E)-TETRAENOIC-ACID-ISOBUTYLAMIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	DODECA-2,4-DIEN-1-YL-ISOVALERATE	Root				Economic & Medicinal Plant Research, 5: 253.
0	DODECA-2E,4E,8Z,10E/Z-TETRAENOIC-ACID-ISOBUTYLAMIDES	Shoot				Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
3	ECHINACEIN	Root	10.0	100.0	0.7071067811865475	Economic & Medicinal Plant Research, 5: 253.
2	ECHINACIN	Root				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
10	ECHINACOSIDE	Root	3000.0	17000.0	0.7071067811865469	--
2	ECHINOLONE	Root				Economic & Medicinal Plant Research, 5: 253.
0	EO	Leaf	100.0	6000.0	-0.4868602567711417	Economic & Medicinal Plant Research, 5: 253.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EO	Flower	600.0	6000.0	-0.22356926401953045	Economic & Medicinal Plant Research, 5: 253.
0	EO	Root	50.0	40000.0	1.2293123783517959	--
0	EPISHIOBUNOL	Fruit				Economic & Medicinal Plant Research, 5: 253.
0	FAT	Root		13000.0	-0.3294780368795451	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
61	FERULIC-ACID	Plant				--
15	FIBER	Root		111000.0	0.5083064852727784	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	FLAVANOIDS	Leaf	3800.0	4800.0		Economic & Medicinal Plant Research, 5: 253.
0	GERMACRENE-ALCOHOL	Root				Economic & Medicinal Plant Research, 5: 253.
2	GERMACRENE-D	Root				Economic & Medicinal Plant Research, 5: 253.
0	HEPTADECA-(8Z,11Z)-DIEN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.
1	HETEROXYLAN	Root		800.0		--
2	HUMULENE	Root	8.0	12.0		Economic & Medicinal Plant Research, 5: 253.
19	INULIN	Root	59000.0	200000.0	-0.39833681982829794	--
6	IRON	Root	700.0	4800.0	6.531741131693913	--
4	ISOCHLOROGENIC-ACID	Shoot				Economic & Medicinal Plant Research, 5: 253.
2	ISORHAMNETIN-3-RUTINOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	ISOTUSSILAGINE	Plant		15.0		--
75	KAEMPFEROL	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	KAEMPFEROL-3-O-GLUCOSIDE	Leaf				--
0	KAEMPFEROL-3-O-RUTINOSIDE	Leaf				--
4	KAEMPFEROL-3-O-GLUCOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	KAEMPFEROL-3-O-RUTINOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	KILOCALORIES	Root		2800.0	-1.2475625360231575	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	L-PENTADECENE	Root		400.0		Economic & Medicinal Plant Research, 5: 253.
60	LIMONENE	Fruit				Economic & Medicinal Plant Research, 5: 253.
78	LUTEOLIN	Leaf				Economic & Medicinal Plant Research, 5: 253.
7	LUTEOLIN-7-GLUCOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
65	MAGNESIUM	Root	1170.0	1860.0	-0.3732958440640499	--
14	MANGANESE	Root		101.0	0.6601606462244966	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	METHYL-P-HYDROXYCINNAMATE	Essential Oil				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
22	MYRCENE	Fruit				Economic & Medicinal Plant Research, 5: 253.
0	N-TRIACONTANOL	Shoot				Economic & Medicinal Plant Research, 5: 253.
39	NIACIN	Root		17.0	-0.9633392827635444	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
13	PALMITIC-ACID	Root				Economic & Medicinal Plant Research, 5: 253.
0	PENTA-(1,8Z)-DIENE	Root		400.0		Economic & Medicinal Plant Research, 5: 253.
0	PENTADECA-(8Z)-EN-11,13-DIYN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.
0	PENTADECA-(8Z)-EN-2-ONE	Root		4000.0		Economic & Medicinal Plant Research, 5: 253.
0	PENTADECA-(8Z,11Z)-DIEN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.
0	PENTADECA-(8Z,13Z)-DIEN-11-YN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.
0	PENTADECA-8-EN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	PHOSPHORUS	Root		790.0	-0.47928982526561387	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	POLYACETYLENES	Root		20.0		Economic & Medicinal Plant Research, 5: 253.
0	POLYSACCHARIDES	Root				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
3	PONTICAEPOXIDE	Root				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	POTASSIUM	Root	3140.0	8090.0	-0.5629990790704673	--
0	PROTEIN	Root		92000.0	-0.2966070707869874	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	QUERCETAGETIN-7-GLUCOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
176	QUERCETIN	Leaf				Economic & Medicinal Plant Research, 5: 253.
2	QUERCETIN-3'-GLUCOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	QUERCETIN-3-0-GALACTOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	QUERCETIN-3-0-XYLOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	QUERCETIN-3-ROBINOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	QUERCETIN-3-XYLOSYL GALACTOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.
0	RHAMNOARABINOGALACTAN	Root				Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
15	RIBOFLAVIN	Bark		3.0	-0.04398526740271707	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
87	RUTIN	Leaf				Economic & Medicinal Plant Research, 5: 253.
4	RUTOSIDE	Leaf				Economic & Medicinal Plant Research, 5: 253.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	SELENIUM	Root		0.5	-0.3268846586034691	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	SILICATE	Root		15340.0		Economic & Medicinal Plant Research, 5: 253.
4	SILICON	Root		8.0	-0.30615522402124107	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	SITOSTEROL-3-BETA-O-GLUCOSIDE	Shoot				Economic & Medicinal Plant Research, 5: 253.
1	SODIUM	Root		90.0	-0.4708671369343761	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
12	STIGMASTEROL	Shoot				Economic & Medicinal Plant Research, 5: 253.
0	SULFATE	Root		2450.0		Economic & Medicinal Plant Research, 5: 253.
0	TETRADECA-(8Z)-EN-11,13-DIYN-2-ONE	Root				Economic & Medicinal Plant Research, 5: 253.
31	THIAMIN	Root		2.6	-0.3624549785956239	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	TIN	Root		1.7	-1.5030133891091328	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	TRIDECA-1-EN-3,5,7,9,10-PENTAYNE	Root				Economic & Medicinal Plant Research, 5: 253.
1	TUSSILAGINE	Root	15.0	60.0		--
28	VANILLIN	Plant				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
20	VERBASCOSIDE	Root				Economic & Medicinal Plant Research, 5: 253.
0	WATER	Root		749000.0	-0.13250827284057254	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
77	ZINC	Root		5.1	-0.8355779101426338	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.