

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Oenothera biennis*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	2-HYDROXY-4-METHOXYBENZOIC-ACID	Plant	--	--		
3	ALANINE	Seed	5500	5870	-0.9111653402746318	
10	ALPHA-AMYRIN	Inflorescence	--	--		
10	ALPHA-AMYRIN	Seed	125	266		
0	ALPHA-LINOLEIC-ACID	Seed	2000	58000	1.2682644549683153	
15	ALPHA-LINOLENIC-ACID	Seed	--	--		
15	ALPHA-LINOLENIC-ACID	Leaf	--	--		
32	ALPHA-TOCOPHEROL	Seed	11	100	-0.41334192628374605	
0	AMINO-ACIDS	Seed	--	--		
0	AMMONIA	Seed	2300	2455	-1.2854677571761999	
14	ARGININE	Seed	14100	15048	-0.40617714791759757	
0	ASH	Seed	47800	78000	0.9059347966112347	
3	ASPARTIC-ACID	Seed	11800	12593	-0.8873978605966162	
9	BETA-AMYRIN	Seed	47	100		
9	BETA-AMYRIN	Inflorescence	--	--		
9	BETA-AMYRIN	Fruit	--	--		
0	BETA-LINOLEIC-ACID	Seed	42000	66000	1	
47	BETA-SITOSTEROL	Seed	1186	2528	0.3390953743581826	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
47	BETA-SITOSTEROL	Inflorescence	--	--		
47	BETA-SITOSTEROL	Fruit	--	--		
4	BORON	Seed	38	41	0.8011086754520209	
102	CAFFEIC-ACID	Leaf	--	--		
28	CALCIUM	Plant	12100	23400	1.0494074625143026	
28	CALCIUM	Seed	12700	18000	2.5443203311345783	
2	CAMPESTEROL	Fruit	--	--		
2	CAMPESTEROL	Inflorescence	--	--		
2	CAMPESTEROL	Seed	103	220	-0.16771024103568802	
0	CARBOHYDRATES	Plant	460000	671000	-0.00899460548785233	
1	CELLULOSE	Seed	270000	270000	1.6470502589214908	
0	CIS-6,9,12-OCTADECATRIENOIC-ACID	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	CIS-GAMMA-LINOLEIC-ACID	Seed	9800	14000		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CIS-GAMMA-LINOLENIC-ACID	Oil	--	90000		
0	CIS-LINOLEIC-ACID	Seed	70000	98000		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CIS-LINOLEIC-ACID	Oil	--	700000		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CITROSTADIENIOL	Seed	115	246		
12	COPPER	Seed	11	13	-0.1645816165812568	
7	CYCLOARTENOL	Seed	62	133	1	
2	CYSTINE	Seed	3400	3629	0.3332591122362739	
9	DELPHINIDIN	Leaf	--	--		
2	DIGALLIC-ACID	Leaf	--	--		
0	DIHOMO-LINOLENIC-ACID	Seed Oil	1000	3000		
51	ELLAGIC-ACID	Leaf	--	--		
2	ERUCIC-ACID	Seed	--	--		
0	FAT	Plant	23000	43000	-0.12766435472464482	
0	FAT	Seed	140000	320000	0.28766309174876803	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	FATTY-ACIDS	Seed	--	--		
61	FERULIC-ACID	Plant	--	--		
15	FIBER	Plant	156000	234000	0.08275837533773212	
15	FIBER	Seed	429000	429000	2.3232206665600197	
0	FIXED-OIL	Seed	--	140000	-0.8071451166889622	
62	GALLIC-ACID	Leaf	--	--		
62	GALLIC-ACID	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
20	GAMMA-LINOLENIC-ACID	Seed Essent. Oil	--	80000	-1.3934660285832352	
20	GAMMA-LINOLENIC-ACID	Seed	4860	48600	0.014450187219169939	
20	GAMMA-LINOLENIC-ACID	Seed Oil	19000	403000	1	
0	GAMMA-RESORCYLIC-ACID	Plant	--	--		
14	GAMMA-TOCOPHEROL	Seed	28	200	-0.5678069938930681	
8	GENTISIC-ACID	Plant	--	--		
8	GLUTAMIC-ACID	Seed	26300	28068	-0.5757036221626196	
12	GLYCINE	Seed	10500	11206	0.03669673170359155	
0	GRAMISTEROL	Seed	36	77		
7	HISTIDINE	Seed	3700	3949	-0.5782408006035382	
6	IRON	Seed	94	390	1.1114285262814996	
3	ISOLEUCINE	Seed	4100	5870	-0.5897174494201396	
75	KAEMPFEROL	Leaf	--	--		
2	LEUCINE	Seed	8700	10780	-0.6031673733578486	
13	LIGNIN	Seed	160000	160000	2.0364308751166993	
27	LINOLEIC-ACID	Seed Oil	177000	747000	1.3995386909817178	
27	LINOLEIC-ACID	Seed Essent. Oil	--	710000	1.3701812176212669	
27	LINOLEIC-ACID	Seed	121500	227798	1.033962263778994	
0	LINOLENIC-ACID	Seed Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
21	LUPEOL	Fruit	--	--		
21	LUPEOL	Inflorescence	--	--		
4	LYSINE	Seed	3100	3842	-1.1184020033617263	
65	MAGNESIUM	Herb	2700	3900	-0.7287122016415516	
65	MAGNESIUM	Seed	4300	5300	0.9300089168542945	
14	MANGANESE	Seed	5	168	1.4260322978622513	
15	METHIONINE	Seed	5400	5763	0.3739533200121928	
0	METHYLENE-CYCLOARTENOL	Seed	20	42		
3	MUCILAGE	Plant	--	--		
6	MYRISTIC-ACID	Seed	--	--		
2	NEO-CHLOROGENIC-ACID	Leaf	--	--		
4	O-COUMARIC-ACID	Plant	--	--		
0	O-VANILLIC-ACID	Plant	--	--		
0	OBTUSIFOLIOL	Seed	26	56		
1	OENOTHEIN-A	Leaf	--	1250		
0	OENOTHERIN	Plant	--	--		
18	OLEIC-ACID	Seed Oil	22000	119000	-1.0563882952435122	
18	OLEIC-ACID	Seed Essent. Oil	--	120000	-0.7071067811865472	
18	OLEIC-ACID	Seed	15000	50000	-0.5680708540773698	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
25	P-COUMARIC-ACID	Leaf	--	--		
13	P-HYDROXY-BENZOIC-ACID	Plant	--	--		
0	P-HYDROXYPHENYLACETIC-ACID	Plant	--	--		
13	PALMITIC-ACID	Seed	7500	31590	-0.047796848868014136	
13	PALMITIC-ACID	Seed Oil	17000	86000	-0.6373307859084272	
2	PALMITOLEIC-ACID	Seed Oil	--	--		
7	PHENYLALANINE	Seed	6900	7364	-0.49873991542959556	
0	PHLOBAPHENE	Plant	--	--		
4	PHOSPHORUS	Seed	4100	7257	0.5030557671108792	
4	PHOSPHORUS	Plant	1700	3700	0.05350457708670144	
0	PHYTOSTEROL	Plant	--	--		
2	PHYTOSTEROLS	Plant	--	--		
14	POTASSIUM	Herb	12700	35100	-1.338157399199988	
14	POTASSIUM	Seed	4600	7577	-0.43910673764444386	
0	PROLINE	Seed	5900	6297	-0.9899306603474678	
0	PROTEIN	Plant	150000	176054	0.021215692220184674	
0	PROTEIN	Cf	150000	176054		
43	PROTocatechuic-ACID	Plant	--	--		
0	PYROcatechuic-ACID	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
176	QUERCETIN	Herb	--	--		
176	QUERCETIN	Leaf	91000	207000	2.9965603257230544	
0	RESIN	Plant	--	--		
34	SALICYLIC-ACID	Plant	--	--		
1	SERINE	Seed	8300	8858	-0.3289312266750426	
1	SODIUM	Seed	180	180	-0.4299811461795394	
5	STARCH	Seed	--	--		
8	STEARIC-ACID	Seed	1875	12150	-0.30177629804017425	
8	STEARIC-ACID	Seed Oil	5000	19000	-0.7851892549060089	
12	STIGMASTEROL	Fruit	--	--		
12	STIGMASTEROL	Inflorescence	--	--		
6	SYRINGIC-ACID	Plant	--	--		
35	TANNIN	Herb	110000	110000		
2	TARAXASTEROL	Inflorescence	--	--		
2	TARAXASTEROL	Leaf	--	--		
4	THREONINE	Seed	3500	4600	-0.7913084970371281	
29	TRYPTOPHAN	Seed	2400	16000	4.322570870133962	
8	TYROSINE	Seed	3400	3629	-0.9525980773834556	
3	VALINE	Seed	5200	8645	-0.4146219429330241	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	WATER	Seed	63000	83000	-0.5549177601154011	
77	ZINC	Seed	70	90	1.273809963462215	