

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in Citrus reticulata

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
67	1,8-CINEOLE	Fruit	--	76	-0.41910464878819126	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	4'-HYDROXY-5,6,7,8-TETRAMETHOXY-FLAVONE	Pericarp	--	1.4		
2	8-METHOXY-CIRSILINEOL	Pericarp	--	12.1		
6	ACETALDEHYDE	Fruit	--	2	-0.7067882885418681	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	ALANINE	Fruit	70	2740	-0.3802547043758256	
7	ALPHA-CAROTENE	Fruit	0.2	2	-0.25314632170375756	
2	ALPHA-HUMULENE	Fruit	0.7	1	-0.598173569962584	
15	ALPHA-LINOLENIC-ACID	Fruit	100	806	-0.7874611428502755	USDA's Ag Handbook 8 and sequelae)
11	ALPHA-PHELLANDRENE	Fruit	5	6	-0.5736201696885931	
28	ALPHA-PINENE	Fruit	50	55	-0.7044240563995721	
3	ALPHA-SELINENE	Fruit	2	2	-1.0145652291233325	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Fruit	0.7	1	-0.4549438642997257	
23	ALPHA-TERPINEOL	Fruit	1	2	-0.40686466721857434	
32	ALPHA-TOCOPHEROL	Fruit	3	31	-0.6444565233542005	

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5	ALUMINUM	Fruit	1	15	-0.21915758507532193	ACTA AGRIC SCAND SUPPL 22: 1980
14	ARGININE	Fruit	440	3546	-0.20372390514917343	USDA's Ag Handbook 8 and sequelae)
2	ARSENIC	Fruit	0.04	0.3	-0.15246528271419005	ACTA AGRIC SCAND SUPPL 22: 1980
112	ASCORBIC-ACID	Fruit	280	3684	-0.05542896425867096	
2	ASPARAGINE	Fruit	180	850	-0.3407885457306878	
3	ASPARTIC-ACID	Fruit	240	6206	-0.5192722442905813	
1	BEHENIC-ACID	Seed Oil	--	--		
9	BENZYL-ALCOHOL	Fruit	1	2	1.4141599980735915	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
53	BETA-CAROTENE	Fruit	1	44	-0.0657494218885312	
5	BETA-ELEMENE	Fruit	0.7	1	-0.565275335737646	
13	BETA-PINENE	Fruit	20	23	-0.2971064953564389	
5	BETA-SESQUIPELLANDRENE	Fruit	20	20		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
47	BETA-SITOSTEROL	Pericarp	--	--		
47	BETA-SITOSTEROL	Root	--	--		
3	BETA-TERPINEOL	Fruit	40	40	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
4	BORON	Fruit	1	14	-0.5220324995843817	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	CADMIUM	Fruit	--	0.02	-0.5848464463574334	ACTA AGRIC SCAND SUPPL 22: 1980
28	CALCIUM	Fruit	140	3077	-0.17982842232359114	
2	CAMPESTEROL	Root	--	--		
2	CAMPESTEROL	Pericarp	--	--		
9	CAMPHENE	Fruit	1	40	-0.3352175138149692	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
19	CARVONE	Fruit	--	3	-0.5003949723462134	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
31	CARYOPHYLLENE	Fruit	2	9	-0.395772877445224	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	CHLORINE	Fruit	24	24	-0.6858111593916871	
1	CHOLESTEROL	Pericarp	--	--		
1	CHOLESTEROL	Root	--	--		
24	CHROMIUM	Fruit	0.01	0.08	-0.4963965640383935	ACTA AGRIC SCAND SUPPL 22: 1980
9	CIRSIMARITIN	Pericarp	--	1.4		
1	CIS-3-HEXENOL	Fruit	1	1		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	CITRIC-ACID	Fruit	8600	12200	-0.4519563898290651	
20	CITRONELLAL	Fruit	4	5	-0.9952774234291415	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
15	CITRONELLOL	Fruit	0.4	0.8	-0.5199467377830584	
2	CITRONELLYL-ACETATE	Fruit	0.7	1	1.0000000000000002	
2	COBALT	Fruit	--	0.005	-0.5345099214648011	ACTA AGRIC SCAND SUPPL 22: 1980
12	COPPER	Fruit	--	4.8	-0.6241106933300086	
2	CYSTINE	Fruit	70	564	-0.48744653821722156	USDA's Ag Handbook 8 and sequelae)
3	DECANOIC-ACID	Fruit	3	3	1.4142131746286055	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	DECANOL	Fruit	4	4	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	DECYL-ACETATE	Fruit	1	5	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	DELTA-3-CARENE	Fruit	--	5	-0.6048308539868422	
9	DELTA-CADINENE	Fruit	20	20	-0.4645992072439037	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
34	DIOSMIN	Leaf	--	--		
2	DODECANAL	Fruit	1	15	0.3730620025303552	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	DODECANOIC-ACID	Fruit	1	1	1.0000000000000002	

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1	DODECANOL	Fruit	1	1		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
24	ETHANOL	Fruit	--	183	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	EUPATILIN	Fruit	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
8	EUPATORIN	Pericarp	--	3.5		
2	FARNESENE	Fruit	1	2	1.000000000000000002	
61	FERULIC-ACID	Pericarp	--	--		
15	FIBER	Fruit	1890	43000	-0.9311577665884301	
15	FOLACIN	Fruit	--	2	-0.019192793995839758	USDA's Ag Handbook 8 and sequelae)
22	GAMMA-AMINOBUTYRIC-ACID	Fruit	180	180	-0.6918375369704655	
11	GAMMA-TERPINENE	Fruit	23	25	-0.6467237641924287	
11	GAMMA-TERPINENE	Leaf Essent. Oil	--	201500	1.9087625075774095	
13	GERANIAL	Fruit	5	6	-1.0012482240392633	
35	GERANIOL	Essential Oil	--	--		
35	GERANIOL	Fruit	--	0.1	-0.611319076444153	
5	GERANYL-ACETATE	Fruit	0.7	1	-0.9431637487853173	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	GLUTAMIC-ACID	Fruit	160	5158	-0.6287716109665302	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
12	GLYCINE	Fruit	20	5158	0.6009206138414905	
31	HESPERIDIN	Fruit Juice	--	--		
31	HESPERIDIN	Leaf	--	--		
31	HESPERIDIN	Plant	--	--		
31	HESPERIDIN	Seed	--	--		
31	HESPERIDIN	Fruit	--	--		
31	HESPERIDIN	Pericarp	--	47800	-1.3719458405761777	
7	HISTIDINE	Fruit	440	3546	1.2854264273564884	USDA's Ag Handbook 8 and sequelae)
2	HUMULENE	Fruit	5	5	-0.7947139016786847	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	IRON	Fruit	1	79	-0.2141164748349134	
3	ISOLEUCINE	Fruit	170	1370	-0.681123893553361	USDA's Ag Handbook 8 and sequelae)
3	ISOPULEGOL	Fruit	1	5		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	LAURIC-ACID	Seed Oil	--	--		
2	LEUCINE	Fruit	50	1290	-0.8102055642534455	
60	LIMONENE	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	LIMONENE	Fruit	6500	9400	0.5979144802317528	
5	LIMONIN	Pericarp	--	73	1	
5	LIMONIN	Seed	--	--		
53	LINALOOL	Fruit	3	610	-0.41515861877017357	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
53	LINALOOL	Leaf Essent. Oil	--	95500	-0.09113638161798661	
27	LINOLEIC-ACID	Fruit	270	2176	-0.32469981100559747	USDA's Ag Handbook 8 and sequelae)
27	LINOLEIC-ACID	Seed Oil	--	--		
15	LUTEIN	Fruit	0.2	2	-0.6619982620916077	
4	LYSINE	Fruit	40	2579	-0.3976767860750818	
65	MAGNESIUM	Fruit	111	1416	-0.33050162584685566	USDA's Ag Handbook 8 and sequelae)
15	MALIC-ACID	Fruit	1800	2100	-0.8150680933283987	
1	MALONIC-ACID	Fruit	--	--		
14	MANGANESE	Fruit	--	4.6	-0.3732056900241152	
1	MERCURY	Fruit	--	0.001	-0.7865389313824043	ACTA AGRIC SCAND SUPPL 22: 1980
15	METHIONINE	Fruit	130	1048	0.11018842391001216	USDA's Ag Handbook 8 and sequelae)
2	MOLYBDENUM	Fruit	--	0.1	-0.46519775248328327	ACTA AGRIC SCAND SUPPL 22: 1980
22	MYRCENE	Fruit	160	180	-0.3564743999203521	
6	MYRISTIC-ACID	Seed Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MYRISTIC-ACID	Fruit	10	80	-0.2653696344954155	USDA's Ag Handbook 8 and sequelae)
1	N-METHYL-TYRAMINE	Pericarp	--	--		
1	N-METHYL-TYRAMINE	Fruit	--	58	1	
12	NARINGIN	Pericarp	--	--		
12	NARINGIN	Fruit Juice	--	--		
1	NARIRUTIN	Fruit Juice	--	--		
1	NARIRUTIN	Pericarp	--	2100	-1	
6	NEOHESPERIDIN	Pericarp	--	--		
6	NEOHESPERIDIN	Fruit Juice	--	--		
4	NERAL	Fruit	3	4	-0.8844537428871607	
10	NEROL	Fruit	0.4	0.8	-0.5635185349637161	
5	NERYL-ACETATE	Fruit	1	2	-0.7162496373600711	
39	NIACIN	Fruit	1	35	-0.3435391760304161	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	NICKEL	Fruit	0.01	0.3	-0.6882250201691348	ACTA AGRIC SCAND SUPPL 22: 1980
8	NOBILETIN	Pericarp	1441	3571.4		
2	NOMILIN	Seed	--	--		
2	NONANOIC-ACID	Fruit	1	1	-0.6724074507021538	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	NOOTKATONE	Fruit	1	1		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	OBACUNONE	Seed	--	--		
2	OCIMENE	Fruit	8	8		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	OCTANOIC-ACID	Fruit	4	4	-0.3728250649100773	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
18	OLEIC-ACID	Seed Oil	--	--		
18	OLEIC-ACID	Fruit	300	2418	-0.4621088253743955	USDA's Ag Handbook 8 and sequelae)
15	OSTHOL	Root	--	--		
9	OXALIC-ACID	Fruit	--	--		
16	P-CYMENE	Leaf Essent. Oil	--	162900	1.64248251066809	
16	P-CYMENE	Fruit	--	0.1	-0.5797537532122179	
13	PALMITIC-ACID	Fruit	200	1612	-0.3404401792460306	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Seed Oil	--	--		
2	PALMITOLEIC-ACID	Seed Oil	--	--		
2	PALMITOLEIC-ACID	Fruit	40	320	-0.28694433994508195	USDA's Ag Handbook 8 and sequelae)
11	PANTOTHENIC-ACID	Fruit	2	16	-0.13423488366094238	USDA's Ag Handbook 8 and sequelae)
11	PERILLALDEHYDE	Fruit	--	10	-0.6812436875156582	

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7	PHENYLALANINE	Fruit	50	1693	-0.5662627709383539	
4	PHOSPHORUS	Fruit	90	1385	-0.5561459282696419	
14	POTASSIUM	Fruit	1200	13127	-0.4237450594829465	
1	QUINIC-ACID	Fruit	--	--		
2	RETUSIN	Fruit	--	--		
15	RIBOFLAVIN	Fruit	--	4	-0.21615825716438572	
1	RUBIXANTHIN	Fruit	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
5	SABINENE	Fruit	32	35	-0.5246096791708357	
7	SALICYLATES	Fruit	5	50	-0.19336883267960767	
22	SCOPARONE	Pericarp	--	4		
60	SELENIUM	Fruit	--	--	-0.38618723699673646	ACTA AGRIC SCAND SUPPL 22: 1980
1	SERINE	Fruit	120	1773	-0.6602067645050584	
3	SESELIN	Root	--	--		
4	SILICON	Fruit	3	23	-0.5337165506418682	ACTA AGRIC SCAND SUPPL 22: 1980
2	SINENSETIN	Pericarp	--	35.7		
1	SODIUM	Fruit	8	154	-0.16934713941094268	
8	STEARIC-ACID	Seed Oil	--	--		
8	STEARIC-ACID	Fruit	10	80	-0.27391600706826585	USDA's Ag Handbook 8 and sequelae)

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12	STIGMASTEROL	Pericarp	--	--		
12	STIGMASTEROL	Root	--	--		
14	SULFUR	Fruit	130	1000	-0.28853428975640755	ACTA AGRIC SCAND SUPPL 22: 1980
5	SYNEPHRINE	Pericarp	--	--		
5	SYNEPHRINE	Fruit	--	--		
15	TANGERETIN	Pericarp	203	1214.2		
23	TERPINEN-4-OL	Fruit	--	0.1	-0.358333842321623	
23	TERPINEN-4-OL	Leaf Essent. Oil	--	71300	0.05582026899192498	
9	TERPINOLENE	Fruit	2	3	-0.7430510373433167	
31	THIAMIN	Fruit	1	8	0.3414272755878574	
4	THREONINE	Fruit	100	806	-0.9193855017922554	USDA's Ag Handbook 8 and sequelae)
71	THYMOL	Fruit	--	0.1	-0.7071067811865474	
1	TRANS-CARVEOL	Fruit	--	4	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
29	TRYPTOPHAN	Fruit	60	484	-0.5142886582699204	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	TYRAMINE	Fruit	1	1	0.7071067811865478	
8	TYROSINE	Fruit	110	887	-0.634707050013197	USDA's Ag Handbook 8 and sequelae)
2	UNDECANAL	Fruit	--	0.1	-0.8307063685526169	

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3	VALINE	Fruit	20	2176	-0.4698079693781215	
1	XANTHOXYLETIN	Root	--	--		
1	XANTHYLETIN	Root	--	--		
5	ZEAXANTHIN	Fruit	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
77	ZINC	Fruit	0.8	8	-0.6709616277275268	ACTA AGRIC SCAND SUPPL 22: 1980