

Dr. Duke's Phytochemical and Ethnobotanical Databases
Chemicals found in *Carthamus tinctorius*

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
15	FIBER	Seed	251000.0	582000.0	3.5313347977031055	--
27	LINOLEIC-ACID	Seed	122000.0	481394.0	3.2067979683786954	--
15	FIBER	Plant	109000.0	582000.0	2.6556495468581263	--
0	FAT	Seed	200000.0	626000.0	1.8994745477013804	--
12	COPPER	Flower	20.0	26.0	1.8649677339170079	--
0	CARBOHYDRATES	Plant	692000.0	892000.0	1.413974870716482	--
3	HEXANOL	Leaf		1.06	1.4091405923182305	--
0	KILOCALORIES	Seed	4820.0	6470.0	1.2609998714062267	--
2	PHENYL-ACETALDEHYDE	Flower		1.22	0.9999999999999999	--
0	FIBER(CRUDE)	Flower		93000.0	0.8337716352232641	--
53	BETA-CAROTENE	Flower	13.0	90.0	0.770394138576049	--
1	SODIUM	Flower	325.0	2320.0	0.7443077617414459	--
18	OLEIC-ACID	Seed	11000.0	206580.0	0.7191086813826397	--
2	ARSENIC	Flower		0.48	0.6445840747173526	--
28	CALCIUM	Plant		17000.0	0.3648211099783701	--
0	WATER	Flower		860000.0	0.31204457974706823	--
0	FAT	Flower	8820.0	63000.0	0.08325606823768805	--
24	CHROMIUM	Flower	0.4	3.1	0.07742646188569892	--
0	PROTEIN	Flower	20720.0	148000.0	0.060142035750731584	--
0	CARBOHYDRATES	Seed	124000.0	530000.0	0.02622064507550898	--
0	ASH	Plant	15000.0	122000.0	0.01783870103962789	--
0	FAT	Plant	16000.0	51000.0	-0.010900590094613647	--
14	POTASSIUM	Flower	2674.0	19100.0	-0.017465611124368237	--
0	PROTEIN	Plant	122000.0	170000.0	-0.028396655033997305	--
32	ALPHA-TOCOPHEROL	Oil		449.0	-0.0369380787245654	--
0	ASH	Seed	40000.0	45000.0	-0.08662699220958558	--
4	PHOSPHORUS	Plant		3400.0	-0.09065654884395533	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
31	THIAMIN	Seed	5.9	6.2	-0.09165085828262295	--
6	MYRISTIC-ACID	Seed	3000.0	9390.0	-0.1730799967535169	--
0	FIBER(DIETARY)	Flower		290000.0	-0.21521861253312108	--
6	IRON	Seed	97.0	102.0	-0.22670770717721234	--
5	ALUMINUM	Flower	12.0	84.0	-0.24989404157549264	--
0	PROTEIN	Seed	126000.0	201000.0	-0.29173800499018654	--
0	LINOLENIC-ACID	Seed	5200.0	16276.0	-0.29572352589995704	--
13	PALMITIC-ACID	Seed	6000.0	18780.0	-0.3121087137263382	--
11	ALPHA-PHELLANDRENE	Leaf		0.01	-0.3143142988548442	--
112	ASCORBIC-ACID	Seed		0.0	-0.33845664486186666	--
0	ARACHIDIC-ACID	Seed	1000.0	3130.0	-0.34939367755991074	--
0	ALPHA-COPAENE	Leaf		0.05	-0.3560123650887585	--
28	CALCIUM	Flower	620.0	4430.0	-0.3708630185678622	--
14	MANGANESE	Flower	0.4	3.1	-0.38175217245146315	--
16	P-CYMENE	Leaf		0.03	-0.4000885643823194	--
2	COBALT	Flower	0.4	2.6	-0.4076076948646282	--
8	STEARIC-ACID	Seed	2000.0	6260.0	-0.42956929735990995	--
60	LIMONENE	Leaf		0.01	-0.44777369951183704	--
9	DELTA-CADINENE	Leaf		0.12	-0.4635627243605292	--
2	HUMULENE	Leaf		1.13	-0.46575930703125656	--
24	BENZALDEHYDE	Leaf		0.04	-0.4691395911467352	--
15	FIBER	Flower		93000.0	-0.4719304151098302	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
4	PHOSPHORUS	Seed	3100.0	3526.0	-0.4828946265642366	--
60	SELENIUM	Flower	0.3	2.0	-0.4856005150965234	--
28	CALCIUM	Seed	1260.0	1324.0	-0.5183596092485815	--
3	BETA-SELINENE	Leaf		0.11	-0.5235476750267929	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
2	GERMACRENE-D	Leaf		0.04	-0.525020905500319	--
4	SILICON	Flower	0.7	4.7	-0.5588401013097406	--
4	PHOSPHORUS	Flower	332.0	2370.0	-0.5632081846851916	--
15	RIBOFLAVIN	Seed	1.0	2.0	-0.5841625019907875	--
13	BETA-IONONE	Flower	0.07	0.88	-0.5939949516750141	--
15	RIBOFLAVIN	Flower	0.5	3.6	-0.6124279137361128	--
31	CARYOPHYLLENE	Leaf	27.0	28.0	-0.6518220503422282	--
0	WATER	Seed	48000.0	50000.0	-0.6815525254932836	--
65	MAGNESIUM	Flower	260.0	1860.0	-0.6881879935904329	--
0	ASH	Flower	5320.0	38000.0	-0.6963303382958294	--
0	DECANAL	Leaf		0.03	-0.7081307801782422	--
31	CARYOPHYLLENE	Flower	43.0	50.0	-0.7466837902953343	--
112	ASCORBIC-ACID	Flower	14.0	100.0	-0.8040063541862045	--
4	TIN	Flower	1.4	10.0	-0.8082238591204874	--
0	ALPHA-COPAENE	Flower	0.17	0.22	-0.8722153075099439	--
0	(E)-BETA-FARNESENE	Leaf		0.04	-0.9320832719315618	--
13	BETA-IONONE	Leaf		0.09	-0.970249789050833	--
1	MERCURY	Flower		0.02	-0.9956069335307655	--
0	NONANAL	Flower	0.03	0.07	-0.9999999999999999	--
6	ETHYL-ACETATE	Flower	0.04	0.14	-0.9999999999999999	--
3	BETA-SELINENE	Flower	0.14	0.29	-1.0	--
2	(E)-2-HEXENAL	Leaf		1.67	-1.0	--
5	METHYL-CINNAMATE	Flower		0.08	-1.0	--
2	(E)-2-HEXENAL	Flower	0.5	0.6	-1.0000000000000002	--
6	CARYOPHYLLENE-EPOXIDE	Leaf		1.14	-1.0000000000000004	--
6	IRON	Flower	1.0	8.0	-1.050072826643537	--
9	DELTA-CADINENE	Flower	0.63	0.84	-1.0807474918188316	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
39	NIACIN	Seed	5.0	5.3	-1.1251050059916683	--
0	(Z)-3-HEXENOL	Leaf		1.41	-1.2021074521179302	--
14	GAMMA-TOCOPHEROL	Oil		26.0	-1.245244060310563	--
23	TERPINEN-4-OL	Flower	0.01	0.1	-1.2822283694095995	--
0	SUGARS	Flower	12600.0	90000.0	-1.632993161855452	--
0	11Z-TRIDECA-1,11-DIENE-3,5,7,9-TETRAYNE	Sprout Seedling				--
60	LIMONENE	Bud		0.01		--
0	(E)-BETA-FARNESENE	Flower	0.05	0.19		--
1	BEHENIC-ACID	Seed				--
16	P-CYMENE	Bud		0.01		--
0	ALPHA-GURJUNENE	Bud		0.04		--
0	MATAIRESINOL-4-O-BETA-GLUCOPYRANOSIDE	Seed				--
0	1,2,3-TRIMETHOXY-5-METHYL-BENZENE	Flower		1.12		--
0	(E)-11-TRIDECENE-3,5,7,9-TETRAYNE-1,2-DIOL	Sprout Seedling	5.9	6.2		--
0	3E,11E-TRIDECA-1,3,11-TRIENE-5,7,9-TRIYNE	Sprout Seedling				--
0	ISOCARTHAMIN	Flower				--
0	THIAMINE	Flower				--
0	(Z)-3-HEXENOL	Bud		0.57		--
0	SD	Plant				--
0	11E-TRIDECA-1,11-DIENE-3,5,7,9-TETRAYNE	Sprout Seedling				--
0	GAMMA-MUUROLENE	Bud		0.06		--
0	(E)-2-PENTENOL	Leaf		0.1		--
2	PHENYL-ACETALDEHYDE	Leaf		0.07		--
0	(Z,Z,Z)-1,8,11,14-HEPTADECATETRAENE	Flower	1.54	7.8		--
0	3E,11E-TRIDECA-1,3,11-TRIENE-5,7,9-TRIYNE	Flower				--
0	(Z)-2-PENTENOL	Bud		0.23		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	SAFYNOL	Plant				--
0	1-TRIDECENE-3,5,7,9,11-PENTAYNE	Flower	0.39	0.79		--
0	(E)-2-PENTENOL	Bud		0.01		--
0	O-XYLENE	Flower	0.5	0.11		--
0	(Z,Z)-3,11-TRIDECATRIENE-5,7,9-TRIYNE	Flower		0.82		--
0	DECANE	Bud		0.01		--
0	TETRADECENE	Leaf		3.66		--
0	3-METHYL-BUTYRIC-ACID	Flower		1.2		--
5	STARCH	Flower	14000.0	100000.0		--
0	(Z)-2-HEPTENAL	Bud		0.03		--
6	CARYOPHYLENE-EPOXIDE	Flower	2.4	4.5		--
0	SAFFLOWER-YELLOW	Flower	200000.0	300000.0		--
0	1-TRIDECENE	Leaf		0.19		--
77	ZINC	Flower				--
0	(E)-2-PENTENAL	Plant				--
26	PHENOL	Bud		0.04		--
0	NONANAL	Leaf		0.13		--
3	ALPHA-CEDRENE	Flower	0.24	1.4		--
0	M-XYLENE	Bud		0.12		--
0	(Z,Z)-1,8,11-HEPTADECATRIENE	Leaf		1.74		--
0	TETRADECENE	Bud	0.08	3.1		--
0	3-HEXANOL	Flower		0.1		--
0	(FUNGICIDE)	Plant				--
0	CARTHAMONE	Flower				--
0	1-TRIDECENE	Bud		0.16		--
0	(E)-2-METHYL-2-BUTENAL	Bud		0.05		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-CYCLOCITRAL	Leaf		0.05		--
0	PENTANOL	Bud		0.13		--
0	ALLO-AROMADENDRENE	Bud		0.01		--
0	LUTEOLIN-7-BETA-D-GLUCOSIDE	Leaf				--
0	(Z,Z)-1,8,11-HEPTADECATRIENE	Flower	0.69	1.42		--
0	DECANAL	Flower		0.03		--
0	TETRACHELOSIDE	Flower				--
0	3,5,11E-TRIDECA-1,3,5,11-TETRAENE-7,9-DIYNE	Sprout Seedling				--
2	HUMULENE	Flower	1.6	2.0		--
39	NIACIN	Flower				--
0	(E,Z,E)-1,3,5,11-TRIDECATETRAENE-7,9-DIYNE	Leaf		3.0		--
1	CARTHAMIN	Flower	3000.0	6000.0		--
1	1-PENTADECENE	Leaf		138.0		--
0	(E)-2-HEXENOL	Leaf		0.73		--
0	BETA-CYCLOCITRAL	Flower		0.03		--
0	PENTANAL	Leaf		0.04		--
0	3Z,11Z-TRIDECA-1,3,11-TRIENE-5,7,9-TRIYNR	Sprout Seedling				--
0	(Z)-8-DECENE-4,6-DIYNE-1-YL-3-METHYLBUTYRATE	Leaf		0.07		--
0	DECA-4,6-DIYN-1-YL-3-METHYLBUTYRATE	Leaf		0.59		--
0	2-METHYLPENT-2-ENAL	Bud		0.2		--
0	HEXYL-3-METHYLBUTYRATE	Bud		0.01		--
0	(E,Z,E)-1,3,5,11-TRIDECATETRAENE-7,9-DIYNE	Flower	2.0	28.0		--
5	VERBENONE	Flower		0.16		--
0	(E)-2-HEXENOL	Bud		0.22		--
0	BENZOTHIAZOLE	Leaf		0.03		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PENT-3-EN-2-ONE	Bud		0.28		--
1	1-PENTADECENE	Flower	9.0	110.0		--
0	3Z,11Z-TRIDECA-1,3,11-TRIENE-5,7,9-TRIYNE	Sprout Seedling				--
0	(Z)-8-DECENE-4,6-DIYNE-1-YL-3-METHYLBUTYRATE	Flower	0.9	19.7		--
0	DECA-4,6-DIYN-1-YL-3-METHYLBUTYRATE	Flower	0.7	12.2		--
0	NEOCARTHAMIN	Flower				--
0	2-METHYL-PROPANOL	Bud		0.07		--
0	(E,Z)-2,8-DECADIENE-4,6-DIYNE-1-YL-3-METHYLBUTYRATE	Flower		1.09		--
0	UBIQUINONE-9	Plant				--
0	BENZOTHAZOLE	Flower		0.01		--
0	PENT-1-EN-3-OL	Flower	0.07	0.31		--
0	1-HEXADECENE	Leaf		0.22		--
0	3Z,11E-TRIDECA-1,3,11-TRIENE-5,7,9-TRIYNE	Flower				--
1	LIGNOCERIC-ACID	Seed				--
0	(Z)-3-HEXENYL-BUTYRATE	Leaf		0.01		--
0	DECA-4,6-DIYN-1-OL	Plant				--
0	2-METHYL-BUTYRIC-ACID	Flower		0.11		--
3	HEXANOL	Bud		0.27		--
0	(E,E)-3,11-TRIDECADIENE-5,7,9-TRIYNE-1,2-DIOL	Sprout Seedling				--
0	TRIDECANE	Bud		0.02		--
3	BENZENE	Flower	0.13	0.25		--
0	1-HEXADECENE	Flower	0.05	0.11		--
0	ETHYLBENZENE	Flower	0.4	0.5		--
0	3E-TRIDECA-1,3-DIENE-5,7,9,11-TETRAYNE	Sprout Seedling				--
7	LAURIC-ACID	Seed				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(Z)-3-HEXENYL-BENZOATE	Leaf		0.05		--
0	CYCLOSATIVENE	Bud		0.09		--
3	MUCILAGE	Flower				--
0	2-HYDROXYARCTIIN	Flower				--
5	HEXANAL	Bud		0.06		--
0	(E,E)-2,4-DECADIENAL	Flower		0.15		--
0	TRIDECA-1,3,5-TRIENE-7,9,11-TRIYNE	Seed				--
0	(E)-2-HEPTENAL	Leaf		0.04		--
0	P-XYLENE	Flower	0.5	0.24		--
11	ALPHA-PHELLANDRENE	Bud		0.01		--
0	1-HEPTADECENE	Sprout Seedling				--
0	3E,5Z,11E-TRIDECA-1,3,5,11-TETRAENE-7,9-DIYNE	Sprout Seedling				--
0	(Z)-3-HEXENYL-BENZOATE	Bud		0.04		--
0	SEROTOBENINE	Plant				--
0	2-HEXANOL	Flower		0.12		--
0	(E)-2-HEPTENAL	Bud		0.02		--
24	BENZALDEHYDE	Bud		0.1		--
0	ALPHA-MUUROLENE	Bud		0.09		--
0	MATAIRESINOSIDE	Seed				--
0	1-HEPTADECENE	Flower		0.51		--
0	DIHYDROACTINIDIOLIDE	Flower	0.02	0.1		--
6	TRACHELOSIDE	Seed				--
0	3E,5E,11E-TRIDECA-1,3,5,11-TETRAENE-7,9-DIYNE	Sprout Seedling				--
0	KAEMPFEROL-GLYCOSIDE	Flower				--