

P Levisticum officinale

Common Name(s)

Lovage

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-FALCARINDIOL	Root	--	600	
67	1,8-CINEOLE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-METHYL-BUTANAL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	2-OCTANONE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	3-BUTYL-4,5-DIHYDROPHthalIDE	Root	--	--	
0	3-BUTYLPHthalIDE	Root	600	5440	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	4-OCTANONE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	5-METHOXY-PSORALEN	Fruit	6	6	-0.5570860145311556 Abstract (See species file)

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
21	8-METHOXY-PSORALEN	Fruit	--	1	-0.7071067811865476 Abstract (See species file)
16	ACETIC-ACID	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	ALKYL-PHTHALIDES	Root	1400	11900	
0	ALPHA-FENCHYL-ALCOHOL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-P-DIMETHYL-STYRENE	Root	3	30	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Root	1	10	
28	ALPHA-PINENE	Root	20	200	-0.691320833774299
3	ALPHA-SELINENE	Root	10	100	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Root	1	10	-0.621095587088787 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	ALPHA-TERPINEOL	Root	8	80	-0.48963525535860764 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-TERPINYL-ACETATE	Leaf	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	ANGELIC-ACID	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ANGEOLIDE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
20	APIOLE	Seed	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	APTERIN	Root	--	--		
3	AR-CURCUMENE	Root	1	13	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	BENZENE	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
20	BENZOIC-ACID	Root	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
9	BENZYL-ALCOHOL	Root	3	30		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
26	BERGAPTEN	Root	--	--		
0	BETA-CHAMIGRENE	Root	1	13		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	BETA-ELEMENE	Root	12	125	1	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
3	BETA-PHELLANDRENE	Root	24	240	-1	
13	BETA-PINENE	Root	21	210	-0.4535265537017665	
3	BETA-SELINENE	Root	10	100		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
47	BETA-SITOSTEROL	Root	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
4	BETA-SITOSTEROL-BETA-D-GLUCOSIDE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
35	BORNEOL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BUTYL-DIHYDROPHthalIDE	Root	--	--	
0	BUTYL-HEXAHYDROPHthalIDE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	BUTYL-PHthalIDE	Root	153	1535	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
10	BUTYLIDENE-PHthalIDE	Root	153	1535	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BUTYLIDENE-PHthalIDES	Root	700	7000	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
102	CAFFEIC-ACID	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	CALAMENENE	Root	--	5	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	CAMPHENE	Root	7	70	-0.6207659127814102 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
41	CAMPHOR	Root	1	10	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
37	CARVACROL	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
19	CARVONE	Root 10	100	-0.6407782732096975	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CARVOTANACETONE	Root --	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-3-HEXENYL	Root --	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	CIS-LIGUSTILIDE	Root 240	2040		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	CIS-OCIMENEN	Root --	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
20	CITRONELLAL	Plant --	--		
1	COPAENE	Root 29	290		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
57	COUMARIN	Root --	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	COUMARINS	Root 1000	43000		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	CUPARENE	Root --	5	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CUPARENENE	Root 1	13		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	D-ALPHA-TERPINEOL	Root --	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
8	DELTA-3-CARENE	Root	1	10	-0.6900357033009535	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	DELTA-CADINENE	Root	--	5	-0.7293152632519274	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DELTA-SELINENE	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DIHYDROBUTYLIDENE-PHTHALIDE	Root	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
5	DIPHENYL	Root	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	E-LIGUSTILIDE	Root	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	EO	Root	1000	18000	0.19305478891253464	
0	EO	Seed	8000	11000	-0.41143918923758516	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	EO	Plant	500	2450	-0.553932933543244	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
76	EUGENOL	Root	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	FAT	Fruit	147000	147000	0.48152208598971263	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
61	FERULIC-ACID	Fruit	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
6	FURFURAL	Root 2	20	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	FURFUROL	Root 1	10		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-CADINENE	Root --	5	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	GAMMA-TERPINENE	Root 3	30	-0.6072624134245684	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
35	GERANIOL	Root --	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	HEPTANAL	Root --	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
3	HEXANOL	Root 61	610	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	HYDROPHthalide-ACIDS	Root --	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
25	IMPERATORIN	Fruit 13	13	-0.3654800233022117	Abstract (See species file)
0	ISOSENKYUNOLIDE	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.
5	ISOVALERIC-ACID	Root --	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LEVISTOLIDE-A	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	LEVISTOLIDE-B	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	LIGUSTICIDE	Root	215	2150	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LIGUSTICUMLACTONE-E-BUTYLIDENE-PHTHALIDE	Root	--	--	
0	LIGUSTICUMLACTONE-Z-BUTYLIDENE-PHTHALIDE	Root	--	--	
60	LIMONENE	Root	8	80	-0.5781714696190392 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LIMONENE-10-OL	Root	1	10	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
53	LINALOOL	Root	3	30	1.543024243243428 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LINALOOL	Root	3	30	
0	MALEIC-ACID	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
63	MENTHOL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Root	6	60	-0.5854605389086612 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	MYRISTIC-ACID	Root	--	--	

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31	MYRISTICIN	Seed	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	MYRTENOL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	N-BUTYRIC-ACID	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	N-PENTYL-BENZENE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	OCTYL-ALDEHYDE	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
16	P-CYMENE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	PALMITIC-ACID	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	PENTACYCLOHEXADIENE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	PHTHALIDES	Root	700	12600	
5	PRETAZETTINE	Stem	--	--	
0	PROTEIN	Fruit	200000	200000	1.2132114250920008 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	PSORALEN	Fruit	3	3	-0.46474431282748374 Abstract (See species file)
31	PSORALEN	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

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0	RESIN	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	SEDANENOLIDE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	SEDANOIC-ACID	Root	--	--	Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	SEDANOIC-ANHYDRIDE	Root	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	SENKYUNOLIDE	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.
5	STARCH	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SUGAR	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
23	TERPINEN-4-OL	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	THUJOPSENE	Root	8	80	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-2-NONENAL	Root	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

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0	TRANS-ALPHA-BERGAMOTENE	Root	12	125	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	TRANS-ANETHOLE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-LIGUSTILIDE	Root	240	2040	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	TRANS-OCIMENE	Root	--	--	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	UMBELLIFERONE	Root	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	VALIDENE-4,5-DIHYDROPHthalIDE	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.
2	Z-LIGUSTILIDE	Root	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.