

# Dr. Duke's Phytochemical and Ethnobotanical Databases

## List of Plants for DELTA-CADINENE

Plant	Part	Low PPM	High PPM	StdDev	Reference
Achillea millefolium	Leaf	0.2	8.0	-0.4292576505663304	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Acinos alpinus	Shoot		8.5	-0.37568032161580267	Velasco-Negueruela,A., Perez-Alonso,M.J., Jiminez,S.M. and Garcia,F.M. 1993. The Volatile Constituents of Acinus alpinus (L.) Moench ssp. meridionalis (Nyman). P.W. Ball Growing in Spain. Flav. & Frag. J. 8:127-130.)
Acinos suaveolens	Shoot		20.0	-0.25857385516089326	Tumen, G. 1991. The Volatile Constituents of Acinos suaveolens (Sibt. et Smith). G. Don fil. Growing in Turkey. J. Ess. Oil Res. 3:191-2.
Acinos alpinus	Shoot		8.5	-0.37568032161580267	Velasco-Negueruela,A., Perez-Alonso,M.J., Jiminez,S.M. and Garcia,F.M. 1993. The Volatile Constituents of Acinus alpinus (L.) Moench ssp. meridionalis (Nyman). P.W. Ball Growing in Spain. Flav. & Frag. J. 8:127-130.)
Acorus calamus	Rhizome	5.0	1050.0	1.4135121224933511	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Agastache nepetoides	Plant		11.0	-0.4873560576031378	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Agastache rugosa	Essential Oil				Jim Duke's personal files.
Aloysia citrodora	Plant	5.0	35.0	-0.315721967751598	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Alpinia officinarum	Rhizome				Wealth of India.
Anethum graveolens	Leaf	1.0	3.0	-0.4510248293697561	--
Angelica archangelica	Root	1.0	101.0	1.4139785716108804	--
Angelica archangelica	Root Essent. Oil				--
Aralia cordata	Root		7.0	-0.6846633083589523	--
Artemisia annua	Plant				--
Ballota nigra	Plant		10.0	-0.49450747801361866	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Boswellia sacra	Essential Oil				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Calamintha nepeta	Shoot		3.0	-0.4316877620942376	Kirimer, N., Baser, K.H.C., Ozek, T. and Kurkcuoglu, M. 1992. Composition of the Essential Oil of Calamintha nepeta subsp. glandulosa. J. Ess. Oil Res. 4:189-190
Callicarpa americana	Leaf	5.0	6.0	-0.4379645220877007	--
Camellia sinensis	Leaf				--
Cananga odorata	Flower				--
Cannabis sativa	Essential Oil				--
Cannabis sativa	Plant				Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234.
Carthamus tinctorius	Leaf		0.12	-0.4635627243605292	--
Carthamus tinctorius	Flower	0.63	0.84	-1.0807474918188316	--
Centella asiatica	Shoot				Jim Duke's personal files.
Chrysanthemum parthenium	Shoot				Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of Tanacetum parthenium (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.
Citrus aurantium	Plant				--
Citrus reticulata	Fruit		20.0	-0.4645992072439037	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Citrus sinensis	Pericarp Essent. Oil				Jim Duke's personal files.
Citrus paradisi	Pericarp		17.0		--
Citrus sinensis	Pericarp				--
Coleus barbatus	Stem Essent. Oil		63500.0		Jim Duke's personal files.
Collinsonia canadensis	Plant		13.0	-0.47305321678217616	--
Copaifera spp	Gum				--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Elsholtzia polystachya	Leaf		16.0	-0.3944301644808494	Mathela, C.S., Melkani, A.B., Bisht, J.C., Pant, A.K., Bestmann, H.J., Erler, J., Kobold, U., Rauscher, J. and Vostrowsky, O. 1992. Chemical Varieties of Essential Oils from Elsholtzia polystachya from Two Different Locations in India. Planta Medica 58: 376-379.
Elsholtzia polystachya	Leaf		8.8	-0.4257749019577823	Mathela, C.S., Melkani, A.B., Bisht, J.C., Pant, A.K., Bestmann, H.J., Erler, J., Kobold, U., Rauscher, J. and Vostrowsky, O. 1992. Chemical Varieties of Essential Oils from Elsholtzia polystachya from Two Different Locations in India. Planta Medica 58: 376-379.
Elsholtzia blanda	Shoot		0.4	-0.45816400668404317	Bestman, H.J., Rauscher, J., Vostrowsky O., Pant, A.K., Dev. V., Perihar, R. and Mathela, C.S. 1992. Constituents of the Essential Oil of Elsholtzia blanda Benth. (Labiatae). J. Ess. Oils Res. 4: 121-124
Ephedra sinica	Shoot		5.0	-0.41132142010207945	--
Eruca sativa	Hs				--
Eucalyptus nova-anglica	Leaf	40.0	75.0	-0.1375774546004268	Brophy, J. L., Lassak, E. V., & Boland, D. J. 1992. The Leaf Essential Oils of Eucalyptus nova-anglica. Deane & Maiden. Journal of Essential Oil Res. 4: 29-32.
Eucalyptus viridis	Leaf		3.0	-0.4510248293697561	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus porosa	Leaf		75.0	-0.1375774546004268	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364

Plant	Part	Low PPM	High PPM	StdDev	Reference
Eucalyptus behriana	Leaf		2.7	-0.45233086009796164	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus populnea	Leaf		8.0	-0.4292576505663304	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus globulus	Leaf Essent. Oil				--
Eucalyptus incrassata	Leaf		170.0	0.27599894266466024	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus dolichorhyncha	Leaf		115.0	0.03655997582697826	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus fasciculosa	Leaf		4.0	-0.44667139360907093	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364

Plant	Part	Low PPM	High PPM	StdDev	Reference
Eucalyptus desquamata	Leaf		43.0	-0.27688739894235087	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus angulosa	Leaf		10.0	-0.4205507790449602	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus lansdowneana	Leaf		14.0	-0.4031370360022197	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus sparsa	Leaf		175.0	0.29776612146808584	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus ochrophloia	Leaf		7.0	-0.43361108632701556	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus cuprea	Leaf		50.0	-0.24641334861755498	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364

Plant	Part	Low PPM	High PPM	StdDev	Reference
Eucalyptus tetraptera	Leaf		90.0	-0.0722759181901499	Bignell, C.M., Dunlop, P.J., Brophy, J. J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus forrestiana	Leaf		675.0	2.4744840018106493	Bignell, C.M., Dunlop, P.J., Brophy, J. J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus ceratocorys	Leaf		6.0	-0.4379645220877007	Bignell, C.M., Dunlop, P.J., Brophy, J. J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus melanophloia	Leaf		46.0	-0.2638270916602955	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus odorata	Leaf		41.0	-0.2855942704637211	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364

Plant	Part	Low PPM	High PPM	StdDev	Reference
Eucalyptus intertexta	Leaf		5.5	-0.4401412399680432	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus largisparsa	Leaf		50.0	-0.24641334861755498	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus stoatei	Leaf		215.0	0.47190355189549094	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Eucalyptus leucoxydon	Leaf		4.0	-0.44667139360907093	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1995. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part VI. Subgenus Symphyomyrtus, Section Adnataria. Flavour and Fragrance J. 10(6):359-364
Eucalyptus erythrandra	Leaf		29.0	-0.33783549959194265	Bignell, C.M., Dunlop, P.J., Brophy, J.J., and Jackson, J.F. 1994. Volatile Leaf Oils of Some South-western and Southern Australian Species of the Genus Eucalyptus. Part I. Subgenus Symphyomyrtus, Section Dumaria, Series Incrassatae. Flavour and Fragrance J. 9(3):113-7
Humulus lupulus	Fruit		60.0	-0.4584564235430147	--
Hypericum perforatum	Plant	0.5	9.0	-0.5016588984240995	--
Hyssopus officinalis	Plant	14.0	420.0	2.4375748902835204	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Illicium verum</i>	Fruit		1.0	-0.46751702950182594	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
<i>Juniperus communis</i>	Fruit				--
<i>Laurus nobilis</i>	Leaf				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Laurus nobilis</i>	Leaf Essent. Oil				--
<i>Lavandula angustifolia</i>	Flower				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Lavandula x intermedia</i>	Plant				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Leonotis leonurus</i>	Se		2.0		Pedro, L.G., Barroso, J.G., Marques, N.T., Ascensao, L., Pais, M.S.S. and Scheffer, J.J.C. 1991. Composition of the Essential Oil from Sepals of <i>Leonotis leonurus</i> R. Br. J. Ess. Oil Res. 3: 451-3
<i>Lepechinia calycina</i>	Plant		40.0	-0.2799648656991939	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Leptospermum scoparium</i>	Essential Oil				--
<i>Levisticum officinale</i>	Root	0.0	5.0	-0.7293152632519274	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Lindera benzoin</i>	Leaf		10.0	-0.4205507790449602	--
<i>Lycium chinense</i>	Fruit		540.0	-0.3847430191323468	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
<i>Lycopus uniflorus</i>	Plant		8.0	-0.5088103188345803	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Lycopus europeus</i>	Plant		10.0	-0.49450747801361866	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Lycopus virginicus</i>	Plant	16.0	40.0	-0.2799648656991939	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
<i>Magnolia denudata</i>	Twig				--



Plant	Part	Low PPM	High PPM	StdDev	Reference
Magnolia denudata	Bulb				--
Magnolia denudata	Leaf				--
Magnolia denudata	Bark				--
Magnolia denudata	Flower				--
Melaleuca alternifolia	Leaf				--
Melaleuca alternifolia	Essential Oil		18600.0	-1.0	--
Melaleuca alternifolia	Root Essent. Oil		1800.0	-1.0	--
Melissa officinalis	Shoot	1.0	145.0	1.0143225193489915	Deutsche Apot. Ziti. 129(4):155-163. W. Schulze et al. Die Melisse.
Mentha spicata	Leaf	2.0	38.0	-0.2986545777457765	--
Mentha spicata	Essential Oil				--
Mentha longifolia	Shoot	0.0	140.0	0.9634066643685961	--
Metrosideros sclerocarpa	Leaf	223.0	892.0	3.419179561879321	--
Micromeria myrtifolia	Shoot		20.0	-0.25857385516089326	Ozek, T., Kirimer, N., and Baser, K.H.C. 1992. Composition of the Essential Oil of Micromeria myrtifolia Boiss. et Hohen. J. Ess. Oil Res., 4: 79-80.
Micromeria varia	Shoot		21.0	-0.2483906841648142	--
Micromeria varia	Shoot		21.0	-0.2483906841648142	Pedro, L.G., et al. 1995. Composition of the Essential oil of Micromeria varia Benth. ssp. thymoides (Sol. ex Lowe) Perez var. thymoides, and endemic species of the Madeira Archipelago. flav. & Fragr. J. 10(3): 199-202.
Micromeria fruticosa	Leaf		1.0	-0.4597317008911263	Kirimer, N., Ozek, T., and Baser, K.H.C. 1991. Composition of the Essential Oil of Micromeria congesta. J. Ess. Oil Res., 3: 387-393.
Murraya koenigii	Leaf		14.0	-0.4031370360022197	--
Myristica fragrans	Essential Oil				--
Myroxylon balsamum	Plant				--
Myrtus communis	Plant	8.0	12.0	-0.480204637192657	--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Nepeta racemosa	Shoot		80.0	0.35241640460385143	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.
Nepeta racemosa	Shoot		80.0	0.35241640460385143	Baser, K.H.C., Ozek, T., Akgul, A. and Tumen, G. 1993. Composition of the Essential Oil of Nepeta racemosa Lam. J. Ess. Oil Res. 5: 215-7.
Ocimum basilicum	Plant		5.0	-0.5302645800660227	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum basilicum	Shoot Essent. Oil	2600.0	66600.0	1.0	--
Ocimum basilicum	Plant		5.0	-0.5302645800660227	Die Nahrung. Pino, J., Rosado, A., Goire, I., Roncal, E., and Garcia, I. 1993. Analysis of the Essential Oil from Cuban Basil. Die Nahrung 37:(5): 501-504.
Ocimum canum	Shoot				=ICMR(Indian Council of Medical Research).1976.Medicinal Plants of India.Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987.Medicinal Plants of India.Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp
Opopanax chironium	Essential Oil				--
Origanum sipyleum	Shoot		25.0	-0.20765800018049788	Baser, K.H.C., Ozek, T., Kurkcuoglu, M. and Tumen, G. 1992. Composition of the Essential Oil of Origanum sipyleum of Turkish Origin. J. Ess. Oil Res. 4: 139-142.
Origanum vulgare	Plant		25.0	-0.38723617185640624	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum sipyleum	Shoot		3.0	-0.4316877620942376	Baser, K.H.C., Ozek, T., Kurkcuoglu, M. and Tumen, G. 1992. Composition of the Essential Oil of Origanum sipyleum of Turkish Origin. J. Ess. Oil Res. 4: 139-142.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Origanum vulgare	Plant		7.0	-0.5159617392450612	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
Origanum vulgare	Plant	2.0	480.0	2.8666601149123703	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Origanum sipyleum	Shoot		50.0	0.04692127472147908	Baser, K.H.C., Ozek, T., Kurkcuoglu, M. and Tumen, G. 1992. Composition of the Essential Oil of Origanum sipyleum of Turkish Origin. J. Ess. Oil Res. 4: 139-142.
Origanum sipyleum	Shoot		25.0	-0.20765800018049788	Baser, K.H.C., Ozek, T., Kurkcuoglu, M. and Tumen, G. 1992. Composition of the Essential Oil of Origanum sipyleum of Turkish Origin. J. Ess. Oil Res. 4: 139-142.
Origanum vulgare	Plant	2.0	480.0	2.8666601149123703	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Panax ginseng	Root				--
Pelargonium graveolens	Essential Oil				--
Perilla frutescens	Shoot Essent. Oil		8000.0	-1.0	Nguyen, X. D., La, D. M., Lu'u, D. C., Leclercq, P. A. 1995. Essential Oil Constituents from the Aerial Parts of Perilla frutescens (L.) Britton. J. Essent. Oil Res., 7(4): 429-432.
Petroselinum crispum	Seed		109.0		--
Petroselinum crispum	Leaf		1.38	-0.458077395302066	--
Pilocarpus microphyllus	Leaf	115.0	165.0	0.2542317638612346	--
Pimenta dioica	Leaf		50.0	-0.24641334861755498	--
Pimenta racemosa	Leaf	0.0	145.0	0.16716304864753206	--
Pimenta dioica	Leaf Essent. Oil				--
Pimenta dioica	Fruit		51.0	-0.4598385498757147	--
Pinus sylvestris	Resin, Exudate, Sap				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Pinus sylvestris	Leaf Essent. Oil		22300.0		--
Pinus sylvestris	Essential Oil				--
Piper auritum	Leaf				Tramil
Piper nigrum	Fruit				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Piper nigrum	Fruit Essent. Oil		1200.0		--
Piper cubeba	Fruit	8800.0	17600.0	2.235154229296806	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Piper nigrum	Leaf Essent. Oil				--
Plectranthus incanus	Shoot		30.0	-0.1567421452001025	Shah, G.C., Bhandari, R. & Mathela, C.S. 1992. 1,2-Epoxy-p-Menthane Derivatives from some Labiatae Species. J. Ess. Oil Res. 4: 57-59.
Psidium guajava	Pericarp Essent. Oil				--
Psidium guajava	Fruit				--
Ptychopetalum olacoides	Root Essent. Oil		5000.0	1.0	Uber Bucek, E., Fournier, G., Dadoun, H. 1987. Volatile Constituents of Ptychopetalum olacoides Root Oil. Planta Med. 53, 2: 231.
Pycnanthemum tenuifolium	Shoot	1.0	620.0	5.851328742486554	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Rheum palmatum	Rhizome		28.5	-0.7453256045840846	--
Rosmarinus officinalis	Shoot		38.0	-0.07527677723146986	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus eriocalyx	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Rosmarinus tomentosus	Shoot		0.1	-0.461218957982867	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus officinalis	Leaf		9.0	-0.4249042148056453	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
Rosmarinus officinalis	Shoot	0.1	75.0	0.30150054962345607	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus eriocalyx	Shoot		0.1	-0.461218957982867	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus x mendizabali	Shoot	0.1	16.0	-0.2993065391452096	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus officinalis	Resin, Exudate, Sap				--
Rosmarinus officinalis	Shoot		75.0	0.30150054962345607	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus officinalis	Plant	0.1	75.0	-0.02966515133236494	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Plant	Part	Low PPM	High PPM	StdDev	Reference
Rosmarinus x lavandulaceus	Shoot	6.0	60.0	0.14875298468226986	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
Rosmarinus officinalis	Leaf		9.0	-0.4249042148056453	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
Salvia officinalis	Leaf Essent. Oil				--
Salvia dorisiana	Shoot	11.4	14.2	-0.3176362469381519	Tucker, A.O. & Maciarelo, M.J. 1994. The Essential Oil of Salvia dorisiana Standley. J. Ess. Oil Res. 6: 97-8.
Salvia officinalis	Plant	2.0	14.0	-0.4659017963716953	--
Salvia gilliesii	Shoot		40.0	-0.05491043523931171	Velasco-Negueruela, A. et al. 1993. The Essential Oil of Salvia gilliesii Benth. J. Ess. Oil Res. 5: 319-320.
Sassafras albidum	Leaf	0.2	12.0	-0.4118439075235899	--
Satureja douglasii	Plant		13.0	-0.47305321678217616	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Satureja cilicica	Shoot		18.0	-0.27894019715305146	Tumen, G. Baser, K.H.C. and Kirimer, N. 1993. The Essential Oil of Satureja cilicica P.H. Davis. J. Ess. Oil Res. 5: 547-548.
Satureja montana	Plant	6.0	135.0	0.39942007329648466	--
Scutellaria churchilliana	Plant		9.0	-0.5016588984240995	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Scutellaria lateriflora	Essential Oil		270000.0	1.0	--
Scutellaria parvula	Plant		36.0	-0.30857054734111716	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Sideritis germanicolpitana	Plant	2.0	18.0	-0.43729611472977203	J. Essential Oil, 4: 533.
Sideritis pauli	Shoot		220.0	1.7780603440549225	Burzaco, A., Velasco-Negueruela, A. and Perez-Alonso, M.J. 1992. Essential Oil Analysis of Sideritis pauli Pau. FFJ7: 47-8. 1992.

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Sideritis mugronensis</i>	Leaf	30.0	85.0	-0.09404309699357555	Manez, S., Jimenez, A., and Villar, A. 1991. Volatiles of <i>Sideritis mugronensis</i> Flower and Leaf. J. Ess. Oil Res., 3: 395-397.
<i>Sideritis mugronensis</i>	Flower	70.0	390.0	1.3303032644080464	Manez, S., Jimenez, A., and Villar, A. 1991. Volatiles of <i>Sideritis mugronensis</i> Flower and Leaf. J. Ess. Oil Res., 3: 395-397.
<i>Stevia rebaudiana</i>	Flower		135.0	-0.24955577258921416	Kinghorn, A. D. (Ed.) 2002. Medicinal and Aromatic Plants - Industrial Profiles. Stevia. The genus Stevia. Taylor & Francis. New York, NY. 211 pp.
<i>Stevia rebaudiana</i>	Leaf		12.0	-0.4118439075235899	Kinghorn, A. D. (Ed.) 2002. Medicinal and Aromatic Plants - Industrial Profiles. Stevia. The genus Stevia. Taylor & Francis. New York, NY. 211 pp.
<i>Syzygium aromaticum</i>	Fruit				--
<i>Syzygium aromaticum</i>	Leaf	25.0	160.0	0.23246458505780895	Charalambous, G. (Ed.). 1994. Spices, Herbs and Edible Fungi. Elsevier Science B. V. Amsterdam. 764 pp.
<i>Tagetes lucida</i>	Shoot		18.0	-0.27894019715305146	Bicchi, C., Fresia, M., Rubiolo, P., Monti, D., Franz, C., Goehler, I. 1997. Constituents of <i>Tagetes lucida</i> Cav. ssp. <i>lucida</i> essential oil. Flavor & Fragrance, 12(1): 47-52.
<i>Tanacetum parthenium</i>	Shoot				Hendriks, H., Bos, R., and Woerdenbag, H. J. 1996. The Essential Oil of <i>Tanacetum parthenium</i> (L.) Schultz-Bip. Flavor and Fragrance Journal 11(6): 367-71.
<i>Tanacetum parthenium</i>	Essential Oil				--
<i>Teucrium scorodonia</i>	Shoot		2.22	-0.4396306354711793	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six <i>Teucrium</i> Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.
<i>Teucrium oxylepis</i>	Shoot		0.5	-0.4571456895844353	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six <i>Teucrium</i> Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.

Plant	Part	Low PPM	High PPM	StdDev	Reference
<i>Teucrium micropodioides</i>	Leaf		65.0	-0.18111181220727807	Arnold, N., Bellomaria, B., Velentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some <i>Teucrium</i> Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium divaricatum</i>	Leaf		60.0	-0.20287899101070372	Arnold, N., Bellomaria, B., Velentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some <i>Teucrium</i> Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium polium</i>	Shoot		5.0	-0.41132142010207945	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian <i>Teucrium</i> Species. J. Ess. Oil Res. 5: 397-402.
<i>Teucrium arduini</i>	Shoot		8.0	-0.38077190711384223	Blazevic, N., Kalodera, Z., Petricic, J., and Plazibat, M. 1992. Essential Oil Content and Composition of <i>Teucrium arduini</i> L. J. Ess. Oil Res. 4: 223-225.
<i>Teucrium salviastrum</i>	Shoot		1.73	-0.444620389259258	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six <i>Teucrium</i> Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.
<i>Teucrium kotschyanum</i>	Leaf		290.0	0.7984112339468754	Arnold, N., Bellomaria, B., Velentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some <i>Teucrium</i> Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium cyprium</i>	Leaf		1250.0	4.977709564204596	Arnold, N., Bellomaria, B., Velentini G. and Rafaiani, S.M. 1991. Comparative Study on Essential Oil of Some <i>Teucrium</i> Species from Cyprus. J. Ethnopharm. 35: 105-113.
<i>Teucrium oxylepis</i>	Shoot		7.18	-0.389122107330627	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six <i>Teucrium</i> Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.
<i>Teucrium arduini</i>	Shoot		8.0	-0.38077190711384223	Blazevic, N., Kalodera, Z., Petricic, J., and Plazibat, M. 1992. Essential Oil Content and Composition of <i>Teucrium arduini</i> L. J. Ess. Oil Res. 4: 223-225.



Plant	Part	Low PPM	High PPM	StdDev	Reference
Teucrium pseudoscorodonia	Shoot		0.56	-0.45653469932467056	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six Teucrium Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.
Teucrium gnaphalodes	Shoot		2.0	-0.4418709330903167	Perez-Alonso, M.J. Velasco-Negueruela, A. and Lopez-Saez, J.A. 1993. The Essential Oils of Two Iberian Teucrium Species. J. Ess. Oil Res. 5: 397-402.
Teucrium asiaticum	Shoot		0.27	-0.4594878189135335	Velasco-Negueruela, A. and Perez-Alonso, M.J. 1990. The Volatiles of Six Teucrium Species from the Iberian Peninsula and the Balearic Islands. Phytochemistry 29(4): 1165-9.
Thymus funkii	Shoot		16.0	-0.2993065391452096	Vila, R., et al. 1995. Composition and study of the variability of the essential oil of Thymus funkii Cousson. Flav. & Fragr. J. 10(6): 379-383.
Thymus riatarum	Shoot		50.0	0.04692127472147908	Iglesias, J., Vila, R., Canigueral, S., Bellakdhar, and Il Idrissi, A. 1991. Analysis of the Essential Oil of Thymus riatarum. J. Ess. Oil Res. 3: 43-4.
Thymus vulgaris	Essential Oil				--
Thymus mastichina	Plant		5.0	-0.5302645800660227	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Thymus serpyllum	Plant	8.0	152.0	0.5209942202746587	--
Thymus capitatus	Plant	10.0	70.0	-0.06542225338476906	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Thymus funkii	Shoot		16.0	-0.2993065391452096	Vila, R., et al. 1995. Composition and study of the variability of the essential oil of Thymus funkii Cousson. Flav. & Fragr. J. 10(6): 379-383.
Thymus orospedanus	Plant				--
Turnera diffusa	Leaf				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Valeriana officinalis	Root				--
Zea mays	Leaf				--

Plant	Part	Low PPM	High PPM	StdDev	Reference
Zingiber officinale	Rhizome Essent. Oil		1300.0		--
Zingiber officinale	Rhizome	1.0	65.0	-0.6681865179092669	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.