

List of Plants

BENZALDEHYDE

Chemid

BENZALDEHYDE

Dosage

LD50=1,300 (orl rat)

LD50=1,000 (orl gpg)

Borchard, R. E., Barnes, C. D., and Eltherton, L. G. 1991. Drug Dosage in Laboratory Animals: A Handbook. (3rd Ed.) The Telford Press, Inc., P. O. Box 287, Caldwell NJ 07006.

Merck 11th Edition

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	Part	Low PPM	High PPM	StdDev	*Reference
Acacia farnesiana	Plant	--	--		Pakistan Encyclopedia Planta Medica. 1986.
Acacia farnesiana	Flower	--	--		Pakistan Encyclopedia Planta Medica. 1986.
Acinos suaveolens	Shoot	--	200.0	0.27	Jim Duke's personal files.
Aesculus hippocastanum	Flower Essent. Oil	--	11000.0		Jim Duke's personal files.
Agastache foeniculum	Plant	1.0	135.0	0.05	Mazza, G. and Kiehn, F.A. 1992. Essential Oil of Agastache foeniculum, A Potential Source of Methyl Chavicol. J. Ess. Oil Res., 4: 295-299.
Anacardium occidentale	Fruit	--	--		*
Aniba rosaeodora	Essential Oil	--	300.0	-0.72	*
Arctium lappa	Root	--	--		*
Aspalathus linearis	Leaf Essent. Oil	--	15900.0	0.7	*
Avena sativa	Seed	--	--		*
Brassica oleracea	Stem	--	0.02		*
Callicarpa americana	Leaf	--	0.55	-0.47	*
Camellia sinensis	Leaf	--	--		*
Camellia sinensis	Shoot	2100.0	2300.0	5.51	*
Cananga odorata	Flower	--	--		*
Capsicum frutescens	Fruit	--	--		*
Capsicum annuum	Fruit	--	--		*
Carica papaya	Fruit	--	300.0	-0.06	*
Carthamus tinctorius	Leaf	--	0.04	-0.47	*
Carthamus tinctorius	Bud	--	0.1		*

Chrysanthemum x morifolium	Flower	--	--		Wealth of India.
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.
Cinnamomum verum	Leaf Essent. Oil	--	7000.0	-1.41	*
Cinnamomum aromaticum	Bark	--	--		*
Cinnamomum verum	Essential Oil	--	--		*
Cinnamomum verum	Bark Essent. Oil	--	--		*
Cinnamomum verum	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Cinnamomum verum	Bark	26.0	104.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Cinnamomum verum	Stem Bark	--	--		*
Cinnamomum verum	Plant	26.0	104.0	-0.26	*
Cistus ladaniferus	Leaf	28.0	1960.0	2.57	*
Citrullus lanatus	Fruit Juice	--	--		*
Cnicus benedictus	Shoot	--	--		Jim Duke's personal files.
Cucumis melo	Petiole	--	--		*
Cymbopogon winterianus	Plant	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
Elsholtzia polystachya	Leaf	--	--	-0.47	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	--	13.0	-0.19	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
Elsholtzia polystachya	Leaf	--	--	-0.47	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.
Ephedra sinica	Shoot	--	15.0	-0.19	*
Eriobotrya japonica	Leaf	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
Eruca sativa	Hs	--	--		*
Eucalyptus siderophloia	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
Eucalyptus camaldulensis	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
Eucalyptus polyanthemos	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
Eucalyptus moluccana	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
Eucalyptus blakelyi	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
Eucalyptus maculata	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.

<i>Eucalyptus dealbata</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus tereticornis</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus saligna</i>	Shoot	--	280.0	0.47	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus botryoides</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus oviformis</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus melliodora</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus astringens</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus globulus</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus cladocalyx</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus sideroxylon</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus citriodora</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus punctata</i>	Shoot	--	80.0	-0.03	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus occidentalis</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus bosistoana</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus albens</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus maidenii</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Eucalyptus diversicolor</i>	Shoot	--	0.1	-0.22	Zrira, S. S., Benjilali, B. B., Fechtal, M. M., & Richard, H. H. 1991. Essential Oils of Twenty-seven Eucalyptus Species Grown in Morocco. Journal of Essential Oil Res. 4: 259-264.
<i>Ficus carica</i>	Fruit	--	1.0	-0.8	*
<i>Glycyrrhiza glabra</i>	Rhizome Essent. Oil	--	--	--	*
<i>Glycyrrhiza glabra</i>	Root Essent. Oil	--	--	--	*
<i>Glycyrrhiza glabra</i>	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.
<i>Hibiscus sabdariffa</i>	Fruit	--	--	--	Chemical Constituents of Oriental Herbs (3 diff. books)
<i>Hyacinthus orientalis</i>	Flower	0.16	2.3	-1.0	*
<i>Hyssopus officinalis</i>	Shoot	--	--	--	Indian Perfumer, 35: 51.
<i>Iris x germanica</i>	Rhizome	--	--	--	*

Jasminum officinale	Flower	--	--		*
Juglans nigra	Essential Oil	--	28000.0	1.41	*
Juglans nigra	Fruit	--	--		*
Laurus nobilis	Leaf	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Leonurus cardiaca	Plant	--	1.0	-1.29	*
Ligustrum japonicum	Flower	--	--		*
Lycopersicon esculentum	Fruit	--	--		*
Melaleuca viridiflora	Leaf	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
Melaleuca leucadendra	Essential Oil	--	--		*
Melissa officinalis	Tissue Culture	--	--		Gbolade, A.A. and Lockwood, G.B. 1991. The Constituents of Melissa officinalis L. Cultures. J. Ess. Oil Res., 3: 111-114.
Mentha spicata	Essential Oil	--	--		*
Mentha spicata	Leaf	--	--		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
Micromeria fruticosa	Shoot	--	--	-0.23	Fleisher, Z. and Fleisher, A. 1991. The Essential Oil of Micromeria fruticosa (L.) Druce subsp. barbata (Boiss et. Ky.), P.H. Davis. Aromatic Plants of the Holy Land and the Sinai. Part VII. J. Ess. Oil Res 3: 477-479.
Micromeria fruticosa	Shoot	--	--	-0.23	Fleisher, Z. and Fleisher, A. 1991. The Essential Oil of Micromeria fruticosa (L.) Druce subsp. barbata (Boiss et. Ky.), P.H. Davis. Aromatic Plants of the Holy Land and the Sinai. Part VII. J. Ess. Oil Res 3: 477-479.
Morus alba	Plant	--	--		*
Murraya koenigii	Leaf	--	0.1	-0.47	*
Myroxylon balsamum	Plant	--	--		*
Narcissus tazetta	Flower	--	--		*
Ocimum basilicum	Essential Oil	--	700.0	-0.69	*
Ocimum gratissimum	Shoot	--	0.1	-0.22	Vostrowsky, O., Garbe, W., Bestmann, H.J. and Maia, J.G.S. 1990. Essential Oil of Alfavaca, Ocimum gratissimum, from Brazilian Amazon. Zeitschr. Naturforschung 45(C): 1073-6.
Origanum onites	Shoot	--	--	-0.23	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Panax ginseng	Shoot	--	--		*
Perilla frutescens	Shoot Essent. Oil	--	--		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.
Perilla frutescens	Leaf Essent. Oil	--	16000.0	0.72	Kang, R., Helms, R., Stout, M.J., Jaber, H., Chen, Z., and Nakatsu, T. 1992. Antimicrobial Activity of the Volatile Constituents of Perilla frutescens and Its Synergistic Effects with Polygodial. J. Agric. Food Chem., 40: 2328-2330.
Petiveria alliacea	Root	--	--		Tramil
Petroselinum crispum	Leaf	--	--		*
Peumus boldus	Leaf	--	1.0	-0.47	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
Phaseolus vulgaris	Stem Essent. Oil	--	--		*
Pogostemon cablin	Plant	--	--		*
Prunus persica	Fruit	--	--		*
Prunus cerasus	Fruit	--	3.0	-0.79	*

Prunus serotina	Bark	--	--		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.
Prunus laurocerasus	Leaf	413.0	456.0	0.24	*
Prunus persica	Seed	--	--		*
Prunus dulcis	Seed	--	8200.0		*
Psidium guajava	Fruit	--	1000.0	1.65	*
Rheum palmatum	Rhizome	--	1.5		*
Ribes nigrum	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Robinia pseudoacacia	Flower	--	--		*
Rosa damascena	Essential Oil	--	--		*
Rubus idaeus	Plant	--	--		*
Salvia sclarea	Plant	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
Sambucus nigra	Leaf Essent. Oil	--	--		*
Sambucus nigra	Flower Essent. Oil	--	--		*
Sambucus nigra	Plant	--	--		*
Styrax benzoin	Plant	--	--		*
Syringa vulgaris	Flower	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
Syzygium aromaticum	Flower	--	--		*
Syzygium aromaticum	Fruit	--	--		*
Tanacetum 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.
Thymus capitatus	Shoot	--	--	-0.23	Biondi, D., Cianci, P., Geraci, C. and Ruberto, G. 1993. Antimicrobial Activity and Chemical Composition of Essential Oils from Sicilian Aromatic Plants. Flav. & Frag. J. 8: 331-7.
Trifolium pratense	Flower	--	12.0	1.0	Buchnauer, G., Jirovetz, L., Nikiforov, A. 1996. Comparative Investigation of Essential Clover Flower Oils from Austria Using Gas Chromatography-Flame Ionization Detection, Gas Chromatography-Mass Spectrometry, and Gas Chrom.-Olfactometry. J. Agr. Food Chem. 44: 1827-8
Triticum aestivum	Shoot	--	--		*
Umbellularia californica	Plant	70.0	280.0	1.5	*
Vaccinium macrocarpon	Fruit	--	--		*
Vaccinium myrtillus	Fruit Juice	--	--		*
Vaccinium corymbosum	Fruit Juice	--	--		*
Vanilla planifolia	Fruit	--	--		*
Zea mays	Shoot	--	--		*
Zea mays	Silk Essent. Oil	--	1000.0		*
Zea mays	Husk Essent. Oil	--	--		*
Zingiber officinale	Rhizome	--	--		*