

P Achillea millefolium

Common Name(s)

Milfoil, Yarrow

How Used

G

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------|---------------------------------|---------|----------|--------|--|
| 2 | (-)-BETONICINE | Plant | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 0 | (-)-VIBURNITOL | Plant | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 0 | (E)-NEROLIDOL | Leaf | -- | -- | |
| 67 | 1,8-CINEOLE | Leaf | 24 | 960 | -0.31413337784745815 |
| 0 | 2,3-DEHYDROXYDESACETOXYMATRICIN | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | 2,3-DIHYDROACETOXYMATRICIN | Plant | -- | -- | |
| 0 | 2-PENTYL-5-PROPYLRESORCINOL | Plant | -- | 70 | |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------|---|---------|----------|--------|--|
| 0 | 3-OXAGUAIANOLIDE | Plant | -- | -- | |
| 0 | 4-OXO-3,4-DIHYDRO-2,3-DIAZAPHENOXANTHIN | Plant | -- | 36 | |
| 0 | 5-HYDROXY-3,6,7,4'-TETRAMETHOXYFLAVONE | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| 0 | 6,10,14-TRIMETHYL-PENTADECAN-2-ONE | Plant | -- | 32 | |
| 0 | 8-ACETOCYARTABSIN | Plant | -- | -- | |
| 0 | 8-ACETYLAGELOLIDE | Leaf | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | 8-ANELOOXYARTABSIN | Plant | -- | -- | |
| 0 | ACETYLBALCHANOLIDE | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| 0 | ACHICEINE | Plant | -- | -- | 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. |
| 1 | ACHILLEINE | Plant | -- | -- | |
| 0 | ACHILLETINE | Plant | -- | -- | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991. |
| 0 | ACHILLICIN | Plant | -- | -- | 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 | ACHILLIN | Plant | -- | -- | |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation | |
|----------|------------------------|---------|----------|--------|---|---|
| 1 | ACONITIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. | |
| 11 | ADENINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. | |
| 1 | ALLO-OCIMENE | Leaf | 4 | 140 | 1 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 20 | ALPHA-BISABOLOL | Leaf | 1 | 915 | 1.264865272094972 | |
| 3 | ALPHA-CADINOL | Leaf | 1 | 15 | 0.03356316627597684 | |
| 0 | ALPHA-COPAENE | Leaf | -- | -- | | |
| 3 | ALPHA-CURCUMENE | Leaf | -- | -- | | |
| 2 | ALPHA-HUMULENE | Leaf | -- | -- | | |
| 0 | ALPHA-MUUROLENE | Leaf | -- | -- | | |
| 0 | ALPHA-PATCHOULENE | Plant | -- | 90 | | |
| 4 | ALPHA-PEROXYACHIFOLIDE | Plant | -- | -- | | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 11 | ALPHA-PHELLANDRENE | Leaf | -- | -- | | |
| 28 | ALPHA-PINENE | Leaf | 1 | 1000 | -0.15961997585151536 | |
| 13 | ALPHA-TERPINENE | Leaf | 2 | 130 | 0.2663807470003411 | |
| 23 | ALPHA-TERPINEOL | Leaf | 1 | 80 | -0.4498172854768475 | |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|------------------------|---------|----------|--------|--|
| 0 | ALPHA-THUJENE | Leaf | -- | -- | |
| 6 | ALPHA-THUJONE | Leaf | 3 | 240 | -0.5168544216563907 |
| 6 | ALPHA-THUJONE | Plant | -- | -- | |
| 5 | ALUMINUM | Plant | 6 | 34 | -0.6894552686751528 |
| 2 | ANACYCLIN | Root | -- | -- | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 101 | APIGENIN | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 2 | APIGENIN-7-O-GLUCOSIDE | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | APIGENIN-GLUCOSIDE | Plant | -- | -- | |
| 0 | ARABINOSE | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 0 | ARTEMISIA-ALCOHOL | Leaf | 1 | 80 | |
| 0 | ARTEMISIA-KETONE | Leaf | -- | -- | |
| 0 | ARTEMISIATRIENE | Leaf | 1 | 65 | -1.414213562373094 |
| 0 | ARTEMITIN | Plant | -- | -- | 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. |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|---------------------------------|---------|----------|--------|--|
| 15 | ASCARIDOLE | Leaf | 120 | 6600 | -0.3837260705884196 |
| 0 | ASCARIDOLE-ISOMER | Leaf | 5 | 335 | |
| 112 | ASCORBIC-ACID | Plant | 119 | 672 | -0.4359276103428388 |
| 112 | ASCORBIC-ACID | Leaf | 580 | 3100 | -0.15627959906914124 List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | ASH | Plant | 17700 | 100000 | -0.3796129196407384 |
| 2 | ASPARAGINE | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | AUSTRICIN | Plant | -- | -- | Wealth of India. |
| 10 | AZULENE | Leaf | -- | 7140 | |
| 0 | BALCHANOLIDE | Plant | -- | -- | 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. |
| 0 | BALCHANOLIDE-ACETATE | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | BENZALDEHYDECYANHYDRINGLYCOSIDE | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 53 | BETA-CAROTENE | Plant | -- | -- | |
| 0 | BETA-CARYOPHYLLENE | Leaf | 1 | 65 | -0.303004238741691 |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|--------------------------|---------|----------|--------|--|
| 0 | BETA-CARYOPHYLLENE-OXIDE | Leaf | 1 | 30 | -1 |
| 0 | BETA-CUBEBENE | Leaf | 1 | 15 | -0.27140166674948796 |
| 5 | BETA-ELEMENE | Leaf | -- | -- | |
| 0 | BETA-FARNESENE | Leaf | -- | -- | |
| 0 | BETA-HIMACHALENE | Plant | -- | 50 | |
| 13 | BETA-PINENE | Leaf | 1 | 720 | 0.6328642794210592 |
| 47 | BETA-SITOSTEROL | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 0 | BETA-SITOSTEROL-ACETATE | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 5 | BETA-THUJONE | Leaf | 1 | 30 | -0.5791445507936085 |
| 14 | BETAINE | Plant | -- | -- | Wealth of India. |
| 2 | BETONICINE | Plant | -- | -- | Wealth of India. |
| 35 | BORNEOL | Leaf | 6 | 275 | -0.1351054728581718 |
| 12 | BORNYL-ACETATE | Plant | -- | 50 | -0.43702890811674244 |
| 6 | BUTYRIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 102 | CAFFEIC-ACID | Plant | -- | -- | |
| 28 | CALCIUM | Plant | 1535 | 8670 | -0.5262108144941796 |
| 9 | CAMPHENE | Leaf | 2 | 600 | 0.03409920562522311 |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|-----------------------------|---------|----------|--------|---|
| 0 | CAMPHERENONE | Plant | -- | 70 | |
| 41 | CAMPHOR | Leaf | 20 | 1780 | -0.18433975802654748 |
| 0 | CAPRIC-ACID-METHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 2 | CAPRYLIC-ACID-METHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 0 | CARBOHYDRATES | Plant | 133104 | 752000 | 0.5125462432567227 |
| 37 | CARVACROL | Leaf | -- | -- | |
| 31 | CARYOPHYLLENE | Leaf | 4 | 160 | -0.5782062507598946 Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i> |
| 6 | CASTICIN | Plant | -- | -- | Williamson, E. M. and Evans, F. J., <i>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> |
| 0 | CEROTINIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.</i> |
| 10 | CHAMAZULENE | Plant | 50 | 2800 | |
| 0 | CHAMAZULENE-CARBOXYLIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.</i> |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference | Citation |
|----------|-----------------------------|---------|----------|--------|----------------------|---|
| 77 | CHLOROGENIC-ACID | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 20 | CHOLINE | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 24 | CHROMIUM | Plant | 0.4 | 2.5 | -0.6300345087929166 | |
| 0 | CHRSANTHENYL-ACETATE | Leaf | -- | -- | | |
| 0 | CINEOLE | Plant | -- | -- | | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 0 | CIS-BETA-FARNESENE | Plant | -- | 110 | | |
| 0 | CIS-CARVEOL | Plant | -- | 200 | 1 | |
| 0 | CIS-CHRSANTHENOL | Leaf | 1 | 30 | | |
| 3 | CIS-DEHYDROMATRICARIA-ESTER | Leaf | -- | -- | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | CIS-JASMONE | Leaf | 2 | 125 | 1.7044539014540394 | |
| 0 | CIS-NEROLIDOL | Plant | -- | 230 | 1 | |
| 0 | CIS-SABINENE-HYDRATE | Leaf | 1 | 80 | -0.2862032724587523 | |
| 0 | CIS-SABINOL | Plant | -- | 100 | 1 | |
| 2 | COBALT | Plant | 0.6 | 3.1 | -0.37614265145342984 | |

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|---------------------|---------------------|---------|----------|--------|---------------------|--|
| 1 | COPAENE | Leaf | 1.5 | 60 | 1.1888404716143406 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 4 | COSMOSIIN | Plant | -- | -- | | Wealth of India. |
| 0 | COUMARINS | Plant | -- | 3500 | -1 | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 10 | CUMINALDEHYDE | Leaf | 0.3 | 11 | -0.8843635097531161 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | DEACETYLMATRICAIN | Leaf | -- | -- | | |
| 0 | DEACETYLMATRICARIN | Plant | -- | -- | | |
| 0 | DELTA-4-CARENE | Leaf | -- | -- | | |
| 9 | DELTA-CADINENE | Leaf | 0.2 | 8 | -0.4292576505663304 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | DESACETYLMATRICIN | Leaf | -- | -- | | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 1 | DEXTROSE | Plant | -- | -- | | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 0 | DIHYDROPARTHENOLIDE | Leaf | -- | -- | | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 2 | DULCITOL | Plant | -- | -- | | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference | Citation |
|---------------------|----------------|---------|----------|--------|----------------------|---|
| 0 | EO | Flower | 700 | 5000 | -0.256861435811866 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | EO | Plant | 177 | 14000 | 0.3238465858545322 | |
| 0 | EO | Leaf | 250 | 14000 | 0.3927378316881657 | |
| 13 | EUCALYPTOL | Plant | -- | -- | | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 76 | EUGENOL | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 2 | FARNESENE | Plant | -- | -- | | |
| 0 | FAT | Plant | 7080 | 40000 | -0.1714507664609065 | |
| 0 | FAT | Seed | 223000 | 334000 | 0.3614060995374496 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 61 | FERULIC-ACID | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 15 | FIBER | Plant | 69000 | 201000 | -0.16122268403058113 | |
| 0 | FIBER(CRUDE) | Plant | -- | 69000 | -0.6486558303247424 | |
| 0 | FIBER(DIETARY) | Plant | -- | 412000 | 0.5188999674765548 | |
| 15 | FOLACIN | Plant | -- | -- | | |

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|---------------------|------------------|---------|----------|--------|---|
| 23 | FOLIC-ACID | Leaf | -- | -- | Wealth of India. |
| 13 | FORMIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 6 | FURFURAL | Plant | -- | -- | |
| 1 | FURFURYL-ALCOHOL | Plant | -- | -- | |
| 1 | GALACTOSE | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 62 | GALLIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | GAMMA-CADINENE | Leaf | -- | -- | |
| 11 | GAMMA-TERPINENE | Leaf | 9 | 370 | 0.34147926512769305 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 13 | GERANIAL | Leaf | 1 | 50 | -0.3978078018016716 |
| 5 | GERANYL-ACETATE | Plant | -- | 36 | -0.5241410325713916 |
| 2 | GERMACRENE-D | Leaf | -- | -- | |
| 7 | GLUCOSE | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 8 | GLUTAMIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |

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|---------------------|-----------------|---------|----------|--------|--|
| 12 | GLYCINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 6 | GUAIAZULENE | Plant | -- | -- | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 0 | HEPTADECANE | Plant | -- | -- | |
| 7 | HISTIDINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 0 | HOMOSTACHYDRINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 2 | HUMULENE | Leaf | 0.5 | 22 | -0.3745832187878271 |
| 32 | HYDROQUINONE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in <i>Achillea millefolium</i> L. (Asteraceae). <i>Economic Botany</i> 48(2): 111-120, 1994. |
| 0 | HYDROXYACHILLIN | Plant | -- | -- | Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989. |
| 8 | INOSITOL | Plant | -- | -- | Pedersen, M. 1987. <i>Nutritional Herbology</i> . Pederson Publishing. Bountiful, Utah. 377 pp. |

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|---------------------|---------------------|---------|----------|--------|---|
| 19 | INULIN | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 6 | IRON | Plant | -- | -- | |
| 0 | ISOARTEMISIA-KETONE | Leaf | 20 | 16000 | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | ISOARTEMISIA-KETONE | Plant | -- | -- | |
| 7 | ISOBORNEOL | Leaf | 5 | 320 | -0.49513094589241385 |
| 3 | ISOBUTYL-ACETATE | Plant | -- | -- | |
| 11 | ISORHAMNETIN | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | ISOSCHAFTOSIDE | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 5 | ISOVALERIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | KILOCALORIES | Plant | 2900 | 2900 | -0.36931512722389037 Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 0 | LAVANDULOL | Leaf | 1 | 15 | 1.7320504652833757 |

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|---------------------|-----------------------------|---------|----------|--------|--|
| 0 | LEUCODIN | Plant | -- | -- | 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. |
| 60 | LIMONENE | Leaf | 1 | 170 | -0.268944101986277 |
| 53 | LINALOOL | Leaf | 1 | 4000 | 2.122508536493081 |
| 27 | LINOLEIC-ACID | Leaf | -- | -- | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 0 | LINOLEIC-ACID-ETHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | LINOLEIC-ACID-METHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 2 | LINOLENIC-ACID-METHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 78 | LUTEOLIN | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 7 | LUTEOLIN-7-GLUCOSIDE | Plant | -- | -- | |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------|-------------------------------------|---------|----------|--------|---|
| 0 | LUTEOLIN-7-O-BETA-D-GLUCOPYRANOSIDE | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 2 | LUTEOLIN-7-O-GLUCOSIDE | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 4 | LYSINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 65 | MAGNESIUM | Plant | 340 | 1920 | -0.6662824225194472 |
| 2 | MALTOSE | Plant | -- | -- | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 4 | MANDELIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | MANDELONITRILE-GLUCOSIDE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 14 | MANGANESE | Plant | 1 | 5 | -0.6590690061822261 |
| 18 | MANNITOL | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|---------------|---------|----------|--------|--|
| 0 | MATRICIN | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 63 | MENTHOL | Plant | -- | -- | |
| 0 | MILLEFIN | Plant | -- | -- | 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. |
| 0 | MILLEFOLIDE | Plant | -- | -- | 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. |
| 0 | MOSCHATINE | Plant | -- | -- | 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. |
| 22 | MYRCENE | Leaf | 0.5 | 20 | -0.1654584943659963 |
| 6 | MYRISTIC-ACID | Plant | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 5 | NERYL-ACETATE | Plant | -- | 28 | -0.5370290118452437 |
| 39 | NIACIN | Plant | -- | -- | |
| 0 | OCTEN-3-OL | Leaf | -- | -- | |
| 18 | OLEIC-ACID | Plant | -- | -- | 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 |
|---------------------|----------------------------|---------|----------|--------|---------------------|---|
| 16 | P-CYMENE | Leaf | 9 | 370 | 0.584380733883737 | |
| 13 | PALMITIC-ACID | Plant | -- | -- | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 1 | PALMITIC-ACID-ETHYL-ESTER | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | PALMITIC-ACID-METHYL-ESTER | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | PENTACOSANE | Plant | -- | -- | | |
| 26 | PHENOL | Plant | -- | 155 | -1 | |
| 8 | PHLOROGLUCINOL | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 4 | PHOSPHORUS | Plant | 522 | 2950 | -0.3068982377399405 | |
| 3 | PONTICAEPOXIDE | Plant | -- | -- | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 14 | POTASSIUM | Plant | 3151 | 17800 | -0.278763301762186 | |
| 0 | PROAZULENE | Plant | -- | -- | | |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference | Citation |
|----------|---------------------|---------|----------|--------|----------------------|---|
| 0 | PROCHAMAZULENE | Plant | -- | -- | | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | PROTEIN | Plant | 19116 | 108000 | -0.5364847835043116 | |
| 0 | PROTEIN | Seed | 286000 | 369000 | 1.2027089985205746 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 43 | PROTocatechuic-ACID | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 2 | PRUNASIN | Plant | -- | -- | | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 12 | PYROCatechol | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 176 | QUERCETIN | Plant | -- | -- | | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | QUERCETIN-GLYCOSIDE | Plant | -- | -- | | |
| 44 | QUERCITRIN | Plant | -- | -- | | |
| 0 | RESIN | Plant | 6000 | 6000 | -0.8622069963910537 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 15 | RIBOFLAVIN | Plant | 1 | 5.6 | -0.40499841324824026 | |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|----------------|---------|----------|--------|---|
| 87 | RUTIN | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 5 | SABINENE | Leaf | 1 | 1225 | 0.5192871434052357 |
| 34 | SALICYLIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 5 | SAPONINS | Leaf | -- | -- | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 60 | SELENIUM | Plant | 0.3 | 1.6 | -0.35611748372726487 |
| 4 | SILICON | Plant | 1 | 4.5 | -0.5190064670266766 |
| 1 | SODIUM | Plant | 15 | 82 | -0.2995388449907829 |
| 0 | SPATHULENOL | Plant | -- | 495 | 2.658868354096619 |
| 6 | STACHYDRINE | Plant | -- | -- | |
| 8 | STEARIC-ACID | Plant | -- | -- | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 12 | STIGMASTEROL | Plant | -- | -- | |
| 7 | SUCCINIC-ACID | Plant | -- | -- | |

| Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|----------|---------------|---------|----------|--------|---|
| 7 | SUCCINIC-ACID | Leaf | -- | -- | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 14 | SUCROSE | Plant | -- | -- | Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp. |
| 3 | SWERTISIN | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | T-CADINOL | Leaf | 1 | 15 | -0.5225815390117998 |
| 41 | TANNIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 35 | TANNIN | Plant | 28000 | 40000 | -0.6370616203493836 |
| 23 | TERPINEN-4-OL | Leaf | 3 | 430 | -0.24039913557404782 |
| 18 | TERPINEOL | Plant | -- | -- | |
| 9 | TERPINOLENE | Leaf | 1 | 50 | -0.1684008925639172 |
| 31 | THIAMIN | Plant | -- | -- | Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp. |
| 0 | THIAMINE | Plant | -- | -- | |
| 0 | THIOPHENES | Flower | 167 | 167 | |
| 0 | THIOPHENES | Leaf | 167 | 167 | |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|-------------------------------|---------|----------|--------|---|
| 17 | THUJONE | Plant | -- | -- | |
| 71 | THYMOL | Leaf | 1 | 15 | -0.41187649807173515 |
| 4 | TIN | Plant | 5 | 26 | 0.34911685139896836 |
| 1 | TRANS-CARVEOL | Plant | -- | 150 | 1.4141140551271352 |
| 2 | TRANS-DEHYDROMATRICARIA-ESTER | Leaf | -- | -- | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | TRANS-TRANS-FARNESOL | Plant | -- | 160 | |
| 0 | TRICOSANE | Plant | -- | -- | |
| 0 | TRICYCLEN | Leaf | 0.6 | 27 | -0.8389074385035388 Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 15 | TRIGONELLINE | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 2 | UNDECYLENIC-ACID-METHYL-ESTER | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 24 | VANILLIC-ACID | Plant | -- | -- | Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994. |
| 0 | VIBURNITOL | Plant | -- | -- | |

| Chemical Plant Part | | Low PPM | High PPM | StdDev | Reference Citation |
|---------------------|-----------------------|---------|----------|--------|---|
| 0 | VICENIN-2-SCHAFTOSIDE | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | VICENIN-3-SCHAFTOSIDE | Plant | -- | -- | Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp. |
| 0 | WATER | Plant | -- | 823000 | 0.22291061491730124 |
| 0 | YOMOGI-ALCOHOL | Leaf | 5 | 270 | |
| 77 | ZINC | Plant | -- | -- | |