

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Monarda didyma*

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------|------------|---------|----------|-----------------------|--|
| 57 | ROSMARINIC-ACID | Flower | | 18000.0 | -1.0 | Jim Duke's personal files. |
| 0 | EO | Leaf | 7000.0 | 13000.0 | 0.12885840515037347 | -- |
| 0 | EO | Shoot | 1000.0 | 10000.0 | -0.027439288511147023 | -- |
| 0 | LINALOL | Leaf | 5195.0 | 9645.0 | 5.270310025436921 | -- |
| 0 | LINALOL | Plant | 5.0 | 5900.0 | 0.901609281291647 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | EO | Flower | | 3700.0 | -0.3001412591419022 | Flavour and Fragrance Journal, 6: 80. |
| 0 | DIDYMIN | Plant | 300.0 | 3000.0 | | -- |
| 67 | 1,8-CINEOLE | Plant | 100.0 | 2735.0 | 0.2060272699376145 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | LINALOL | Flower | | 2385.0 | 0.07319469612266988 | Flavour and Fragrance Journal, 6: 80. |
| 16 | P-CYMENE | Plant | 120.0 | 1850.0 | 0.061323450943005245 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 60 | LIMONENE | Plant | 2.0 | 1300.0 | 0.3131591824150948 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 11 | GAMMA-TERPINENE | Plant | 20.0 | 1250.0 | -0.025599439862913652 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 5 | SABINENE | Plant | 35.0 | 1230.0 | 0.43966058546243075 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 12 | BORNYL-ACETATE | Plant | 15.0 | 775.0 | 0.026566692243152782 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 12 | BORNYL-ACETATE | Leaf | 380.0 | 740.0 | -0.005245315753730697 | -- |
| 2 | GERMACRENE-D | Leaf | 370.0 | 690.0 | 0.03343711695300454 | -- |
| 0 | THYMOL-METHYL-ETHER | Plant | 50.0 | 520.0 | -0.347025711974809 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

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|------------------|-----------------|------------|---------|----------|----------------------|--|
| 7 | LINALYL-ACETATE | Plant | 50.0 | 505.0 | -0.33522212092081605 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 22 | MYRCENE | Plant | 10.0 | 485.0 | 0.05674559250193856 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 23 | ALPHA-TERPINEOL | Plant | 1.0 | 420.0 | -0.15539863426025058 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 16 | P-CYMENE | Flower | | 405.0 | 0.9531089965802728 | Flavour and Fragrance Journal, 6: 80. |
| 0 | OCT-1-ENE-3-OL | Leaf | 200.0 | 360.0 | | -- |
| 28 | ALPHA-PINENE | Plant | 5.0 | 350.0 | -0.23378468636736702 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 2 | GERMACRENE-D | Plant | 20.0 | 330.0 | -0.14345684237501086 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 9 | CAMPHENE | Plant | 25.0 | 320.0 | -0.05843863375945202 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | 1-OCTEN-3-OL | Plant | 30.0 | 310.0 | 0.21803278046411767 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 16 | P-CYMENE | Leaf | 140.0 | 270.0 | -0.17579834905797595 | -- |
| 13 | BETA-PINENE | Plant | 25.0 | 240.0 | -0.1763503893352365 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 2 | 3-OCTANOL | Plant | 25.0 | 240.0 | -0.15539468377643498 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 11 | GAMMA-TERPINENE | Flower | | 195.0 | -0.38395915301878303 | Flavour and Fragrance Journal, 6: 80. |
| 5 | SABINENE | Leaf | 100.0 | 180.0 | -0.1465237367314848 | -- |
| 9 | CAMPHENE | Leaf | 90.0 | 170.0 | -0.12843512103305268 | -- |
| 9 | TERPINOLENE | Plant | 15.0 | 160.0 | 0.6743750787932923 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|-----------------------|------------|---------|----------|------------------------|--|
| 28 | PULEGONE | Plant | 10.0 | 120.0 | -0.6259250228343867 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 2 | GERMACRENE-D | Flower | | 115.0 | -0.2915926657253819 | Flavour and Fragrance Journal, 6: 80. |
| 11 | GAMMA-TERPINENE | Leaf | 60.0 | 115.0 | -0.15018994823601897 | -- |
| 0 | 3-OCTYL-ACETATE | Plant | 10.0 | 110.0 | -0.4874208354416648 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 28 | ALPHA-PINENE | Leaf | 50.0 | 90.0 | -0.21870131411883623 | -- |
| 0 | BETA-BOURBONENE | Leaf | 50.0 | 90.0 | -0.010077552677954457 | -- |
| 13 | BETA-PINENE | Leaf | 45.0 | 80.0 | -0.3111303351356378 | -- |
| 35 | BORNEOL | Leaf | 40.0 | 75.0 | -0.3826736983701255 | Flavour and Fragrance Journal, 6: 80. |
| 0 | BETA-BOURBONENE | Plant | 5.0 | 70.0 | -2.6699532303189845E-4 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 12 | BORNYL-ACETATE | Flower | | 55.0 | -0.16222142113076302 | Flavour and Fragrance Journal, 6: 80. |
| 71 | THYMOL | Plant | 5.0 | 50.0 | -0.5692399713110052 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | NONANAL | Plant | 5.0 | 50.0 | 1.7315695012698875 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 67 | 1,8-CINEOLE | Leaf | 30.0 | 50.0 | -0.5237932089119647 | -- |
| 1 | DIHYDROCARVYL-ACETATE | Plant | 5.0 | 45.0 | -0.623146364914203 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 60 | LIMONENE | Leaf | 25.0 | 40.0 | -0.40570419186405104 | -- |
| 23 | ALPHA-TERPINEOL | Leaf | 25.0 | 40.0 | -0.5200330695844766 | -- |
| 0 | 3-OCTANONE | Plant | 5.0 | 40.0 | -0.23819021088318515 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 13 | ALPHA-TERPINENE | Plant | 5.0 | 40.0 | -0.44130969594840336 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |

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|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0 | BETA-COPAENE | Plant | 5.0 | 40.0 | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 22 | MYRCENE | Leaf | 25.0 | 40.0 | -0.15824144322226433 | -- |
| 0 | BETA-CARYOPHYLLENE | Flower | | 30.0 | -0.5961530809679855 | Flavour and Fragrance Journal, 6: 80. |
| 22 | MYRCENE | Flower | | 30.0 | -0.48499255419406617 | Flavour and Fragrance Journal, 6: 80. |
| 3 | ISOMENTHONE | Leaf | 15.0 | 25.0 | -0.6713665389168254 | -- |
| 35 | GERANIOL | Leaf | 14.0 | 25.0 | -0.21886385378025552 | -- |
| 13 | ALPHA-TERPINENE | Flower | | 25.0 | -0.6227631044837592 | Flavour and Fragrance Journal, 6: 80. |
| 67 | 1,8-CINEOLE | Flower | | 22.0 | -0.450800530876068 | Flavour and Fragrance Journal, 6: 80. |
| 23 | ALPHA-TERPINEOL | Flower | | 20.0 | -0.624932209361464 | Flavour and Fragrance Journal, 6: 80. |
| 0 | ALPHA-THUJENE | Plant | 2.0 | 20.0 | -0.5526197902491747 | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 28 | ALPHA-PINENE | Flower | | 18.0 | -0.695718784714942 | Flavour and Fragrance Journal, 6: 80. |
| 5 | SABINENE | Flower | | 18.0 | -0.7425901351518777 | Flavour and Fragrance Journal, 6: 80. |
| 9 | TERPINOLENE | Leaf | 10.0 | 15.0 | -0.21298647476915944 | -- |
| 13 | ALPHA-TERPINENE | Leaf | 10.0 | 15.0 | -0.30461131542122966 | -- |
| 5 | GERANYL-ACETATE | Leaf | 7.0 | 13.0 | -1.0015481756750388 | -- |
| 0 | OCT-1-ENE-3-OL | Flower | | 10.0 | | Flavour and Fragrance Journal, 6: 80. |
| 60 | LIMONENE | Flower | | 10.0 | -0.6767651247109525 | Flavour and Fragrance Journal, 6: 80. |
| 9 | CAMPHENE | Flower | | 10.0 | -0.6881569624054215 | Flavour and Fragrance Journal, 6: 80. |
| 0 | BETA-BOURBONENE | Flower | | 10.0 | -0.5826574853920841 | Flavour and Fragrance Journal, 6: 80. |
| 13 | BETA-PINENE | Flower | | 7.0 | -0.581400234916731 | Flavour and Fragrance Journal, 6: 80. |
| 35 | BORNEOL | Flower | | 7.0 | | Flavour and Fragrance Journal, 6: 80. |
| 7 | LINALYL-ACETATE | Flower | | 4.0 | -0.5307262088164137 | Flavour and Fragrance Journal, 6: 80. |

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|------------------|--------------------|------------|---------|----------|---------------------|--|
| 5 | GERANYL-ACETATE | Flower | | 4.0 | -1.0 | Flavour and Fragrance Journal, 6: 80. |
| 9 | TERPINOLENE | Flower | | 4.0 | -1.0 | Flavour and Fragrance Journal, 6: 80. |
| 35 | GERANIOL | Flower | | 4.0 | -0.5148556941565537 | Flavour and Fragrance Journal, 6: 80. |
| 0 | T-SABINENE-HYDRATE | Flower | | 4.0 | | Flavour and Fragrance Journal, 6: 80. |
| 5 | PRUNIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 7 | LINALYL-ACETATE | Leaf | | | | Flavour and Fragrance Journal, 6: 80. |
| 2 | OCIMENE | Leaf | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | PHAEOPHYTIN | Leaf | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 1 | PELARGONIN | Flower | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 1 | NARIRUTIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 3 | ISOMENTHONE | Flower | | | | Flavour and Fragrance Journal, 6: 80. |
| 56 | NARINGENIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | BETA-CARYOPHYLLENE | Leaf | | | | Flavour and Fragrance Journal, 6: 80. |
| 8 | DELTA-3-CARENE | Leaf | | | | 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 | T-SABINENE-HYDRATE | Leaf | | | | Flavour and Fragrance Journal, 6: 80. |
| 0 | ISOSAKURANIN | Plant | | | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 37 | CARVACROL | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | ISOSAKURANETIN-GLYCOSIDE | Plant | | | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | OCTAN-3-OL | Leaf | | | | Flavour and Fragrance Journal, 6: 80. |
| 3 | GENKWANIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | ISOSAKURANETIN-7-RUTINOSIDE | Plant | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 0 | OCTAN-3-OL | Flower | | | | Flavour and Fragrance Journal, 6: 80. |
| 0 | MONARDEIN | Flower | | | | -- |
| 0 | ISOSAKURANETIN | Plant | | | | Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980. |
| 0 | ALPHA-COPAENE | Leaf | | | | Flavour and Fragrance Journal, 6: 80. |
| 1 | LINARIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | GLUCOGENKWANIN | Plant | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |

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|------------------|-----------------|------------|---------|----------|--------|--|
| 89 | URSOLIC-ACID | Leaf | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0 | ALPHA-COPAENE | Flower | | | | Flavour and Fragrance Journal, 6: 80. |
| 47 | BETA-SITOSTEROL | Leaf | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |