

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in *Mentha aquatica*

| Activities Count | Chemical        | Plant Part | Low PPM | High PPM | StdDev              | Refernce Citation  |
|------------------|-----------------|------------|---------|----------|---------------------|--|
| 11               | GAMMA-TERPINENE | Shoot      |         | 2.0      | -0.3929527157162362 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | TERPINOLENE     | Shoot      |         | 2.0      | -0.7480787235698596 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BOURBONENE      | Shoot      |         | 6.0      | 0.0655121782080416  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | BETA-ELEMENE    | Shoot      |         | 55.0     | -0.1534515914700857 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NONANOIC-ACID   | Shoot      |         | 2.0      | -0.4758133309661321 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | MELISSIC-ACID   | Leaf       |         |          |                     | List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 101              | APIGENIN        | Plant      |         |          |                     | J.S. Glasby <i>Dict.Plis Containing 2ndary Metabolite</i> . 1991.  |

| Activities Count | Chemical                            | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-------------------------------------|------------|---------|----------|----------------------|--|
| 0                | 2-N-AMYL-FURAN                      | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | N-HEXANAL                           | Shoot      |         | 2.0      | 1.0000000000000002   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | HESPERETIN-7-BETA-D-GLUCOPYRANOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | ALPHA-GURJUNENE                     | Shoot      |         | 4.0      | -0.9428785569529811  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 30               | MENTHONE                            | Shoot      |         | 2.0      | -0.8211188672141561  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTYL-3-YL-ACETATE                | Shoot      |         | 3.0      | -0.43804835651682184 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | CAMPHENE                            | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | EO                 | Shoot      |         | 1600.0   | -0.8049405653659262  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-PINENE        | Shoot      |         | 24.0     | -0.11941923377254418 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CUBEBENE      | Shoot      |         | 9.0      | -0.2427325475736611  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALLO-AROMADENDRENE | Shoot      |         | 1.0      | -0.18581291700394026 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 60               | LIMONENE           | Shoot      |         | 75.0     | -0.290260225754317   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 67               | 1,8-CINEOLE        | Shoot      |         | 110.0    | -0.13402087558259082 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical         | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|------------------|------------|---------|----------|----------------------|--|
| 0                | VERBENYL-ACETATE | Shoot      |         | 2.0      | -0.8164965809277258  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-BETA-OCIMENE | Shoot      |         | 5.0      | -0.5234943490109244  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-FARNESENE   | Shoot      |         | 11.0     | -0.3998562540982541  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | MENTHYL-ACETATE  | Shoot      |         | 6.0      | -0.49157346467694896 | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | GAMMA-MUUROLENE  | Shoot      |         | 1.0      | -0.3724734981350398  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | TERPINOLENE      | Shoot      |         | 1.0      | -0.7769620719702403  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical       | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|----------------|------------|---------|----------|----------------------|--|
| 0                | BOURBONENE     | Shoot      |         | 5.0      | -0.3275608910402094  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | BETA-ELEMENE   | Shoot      |         | 65.0     | -0.11953111910292297 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NONANOIC-ACID  | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | MEHTHOFURAN    | Shoot      |         | 85.0     |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | ALPHA-PINENE   | Shoot      |         | 8.0      | -0.14665065113583953 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2-N-AMYL-FURAN | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical             | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|----------------------|------------|---------|----------|----------------------|--|
| 2                | ELEMOL               | Shoot      |         | 70.0     | -0.6732642434273933  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | N-HEXANAL            | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | HESPERETIN           | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | ALPHA-EUDESOL        | Shoot      |         | 7.0      | -0.3517412136650936  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 30               | MENTHONE             | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTYL-3-YL-ACETATE | Shoot      |         | 3.0      | -0.43804835651682184 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | CAMPHENE             | Shoot      |         | 0.1      | -0.1342670938252942  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | EO                 | Shoot      |         | 1700.0   | -0.7956845977843217  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-PINENE        | Shoot      |         | 27.0     | -0.11920908974169492 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALLO-AROMADENDRENE | Shoot      |         | 3.0      | -0.18318506682182947 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 60               | LIMONENE           | Shoot      |         | 60.0     | -0.29789596175373306 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | VERBENYL-ACETATE   | Shoot      |         | 3.0      | 1.2247448713915892   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-BETA-OCIMENE   | Shoot      |         | 8.0      | -0.5039521391496569  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical        | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------|------------|---------|----------|---------------------|--|
| 0                | BETA-FARNESENE  | Shoot      |         | 17.0     | -0.365906194788025  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | P-CYMENE        | Shoot      |         | 1.0      | -0.500609925430423  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | MENTHYL-ACETATE | Shoot      |         | 2.0      | -0.6750942248230098 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CUBEBENE   | Shoot      |         | 4.0      | -0.253152042232558  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | GAMMA-MUUROLENE | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | TERPINENE       | Leaf       |         |          |                     | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 0                | BOURBONENE      | Shoot      |         | 3.0      | -1.1137070295367113 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |



| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|----------------------|--|
| 5                | BETA-ELEMENE          | Shoot      |         | 65.0     | -0.11953111910292297 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NONANOIC-ACID         | Shoot      |         | 0.1      | -0.6146598831763856  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | LUTEOLIN-7-RUTINOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 28               | ALPHA-PINENE          | Shoot      |         | 13.0     | -0.14615199142269486 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | PULEGONE              | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2-N-AMYL-FURAN        | Shoot      |         | 0.1      |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | ELEMOL                | Shoot      |         | 170.0    | 0.374889742188684    | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical      | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|---------------|------------|---------|----------|----------------------|--|
| 0                | N-HEXANAL     | Shoot      |         | 0.1      | -1.0                 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | GERMACRENE-D  | Shoot      |         | 25.0     | -0.35647627073349986 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-EUDESOL | Shoot      |         | 11.0     | 0.09592942190866195  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 30               | MENTHONE      | Shoot      |         | 0.1      | -0.8214418565250121  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTEN-3-OL  | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 1                | VIRIDIFLOROL  | Shoot      |         | 50.0     | -0.24673262666016743 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | EO                 | Shoot      |         | 1500.0   | -0.8141965329475307  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-PINENE        | Shoot      |         | 20.0     | -0.11969942581367655 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALLO-AROMADENDRENE | Shoot      |         | 2.0      | -0.18449899191288488 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 60               | LIMONENE           | Shoot      |         | 21.0     | -0.31774887535221497 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 4                | (+)-PULEGONE       | Leaf       |         | 1445.0   | -0.6679831237459577  | --   |
| 0                | TRANS-2-HEPTANAL   | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-BETA-OCIMENE   | Shoot      |         | 8.0      | -0.5039521391496569  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | BETA-FARNESENE     | Shoot      |         | 16.0     | -0.3715645380063965  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | P-CYMENE           | Shoot      |         | 2.0      | -0.4998171975740504  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | MENTHYL-ACETATE    | Shoot      |         | 2.0      | -0.6750942248230098  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CARYOPHYLLENE | Shoot      |         | 32.0     | -0.34509629975614076 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | GAMMA-MUUROLENE    | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 35               | TANNIN             | Leaf       |         | 74000.0  | -0.44596183266254885 | List, P.H. and Horhammer, L., <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 0                | BOURBONENE         | Shoot      |         | 4.0      | -0.7206339602884604  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical                          | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------------------------|------------|---------|----------|----------------------|--|
| 5                | BETA-ELEMENE                      | Shoot      |         | 29.0     | -0.24164481962470882 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | NEROLIDOL                         | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | LUTEOLIN-7-BETA-D-GLUCOPYRANOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 28               | ALPHA-PINENE                      | Shoot      |         | 14.0     | -0.14605225948006592 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | PULEGONE                          | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2,4-DECADIENAL                    | Shoot      |         | 2.0      | 1.0000000000000002   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | ELEMOL                            | Shoot      |         | 275.0    | 1.4754514270855648   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|---------------------|--|
| 5                | SABINENE              | Shoot      |         | 7.0      | -0.2884688205415059 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | MYRTENYL-METHYL-ETHER | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | GERMACRENE-D          | Shoot      |         | 80.0     | -0.3256419647815558 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-EUDESOL         | Shoot      |         | 24.0     | 1.5508589875233674  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTEN-3-OL          | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 1                | VIRIDIFLOROL          | Shoot      |         | 140.0    | 1.109355092388081   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | EO                 | Shoot      |         | 1100.0   | -0.8512204032739488  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-PINENE        | Shoot      |         | 13.0     | -0.12018976188565819 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALLO-AROMADENDRENE | Shoot      |         | 16.0     | -0.1661040406381092  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 60               | LIMONENE           | Shoot      |         | 60.0     | -0.29789596175373306 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | TRANS-2-HEPTANAL   | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-BETA-OCIMENE   | Shoot      |         | 5.0      | -0.5234943490109244  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | BETA-FARNESENE     | Shoot      |         | 6.0      | -0.4281479701901117  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | P-CYMENE           | Shoot      |         | 2.0      | -0.4998171975740504  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | MENTHYL-ACETATE    | Shoot      |         | 6.0      | -0.49157346467694896 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CARYOPHYLLENE | Shoot      |         | 75.0     | -0.25792055501122796 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BOURBONENE         | Shoot      |         | 6.0      | 0.0655121782080416   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CYCLOCITRAL   | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |



| Activities Count | Chemical        | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------|------------|---------|----------|----------------------|--|
| 11               | NEROLIDOL       | Shoot      |         | 3.0      | -0.40119990016633905 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 7                | LINALYL-ACETATE | Leaf       |         |          |                      | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.   |
| 28               | ALPHA-PINENE    | Shoot      |         | 9.0      | -0.1465509191932106  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | PULEGONE        | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2,4-DECADIENAL  | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | ELEMOL          | Shoot      |         | 220.0    | 0.8989667349967224   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | GAMMA-MUUROLENE | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|---------------------|--|
| 0                | MYRTENYL-METHYL-ETHER | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | GERMACRENE-D          | Shoot      |         | 130.0    | -0.2976107775525158 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-EUDESOL         | Shoot      |         | 22.0     | 1.3270236697364897  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL               | Shoot      |         | 1.0      | -0.6444587500209842 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTEN-3-OL          | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 1                | VIRIDIFLOROL          | Shoot      |         | 195.0    | 1.938075365139788   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 5                | SABINENE           | Shoot      |         | 35.0     | -0.25865584465310376 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALLO-AROMADENDRENE | Shoot      |         | 1.0      | -0.18581291700394026 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | TRANS-2-HEPTANAL   | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-EUDESOL       | Shoot      |         | 8.0      | -0.3290760279158904  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | P-CYMENE           | Shoot      |         | 2.0      | -0.4998171975740504  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | MENTHYL-ACETATE    | Leaf       |         | 1900.0   | -1.0                 | --   |
| 0                | BETA-CARYOPHYLLENE | Shoot      |         | 115.0    | -0.1768268389694486  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical          | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-------------------|------------|---------|----------|----------------------|--|
| 0                | BICYCLOGERMACRENE | Shoot      |         | 2.0      | -0.8626280704542847  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CYCLOCITRAL  | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | NEROLIDOL         | Shoot      |         | 2.0      | -0.40423910148064757 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | ALPHA-PINENE      | Shoot      |         | 8.0      | -0.14665065113583953 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | PULEGONE          | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2,4-DECADIENAL    | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|---------------------|--|
| 2                | ELEMOL                | Shoot      |         | 70.0     | -0.6732642434273933 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | GAMMA-MUUROLENE       | Shoot      |         | 1.0      | -0.3724734981350398 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | MYRTENYL-METHYL-ETHER | Shoot      |         | 2.0      | -0.9901799045609176 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | GERMACRENE-D          | Shoot      |         | 115.0    | -0.3060201337212278 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-EUDESOL         | Shoot      |         | 7.0      | -0.3517412136650936 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL               | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical     | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|--------------|------------|---------|----------|---------------------|--|
| 0                | 1-OCTEN-3-OL | Shoot      |         | 2.0      | -0.6377271578856241 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 1                | VIRIDIFLOROL | Shoot      |         | 135.0    | 1.0340168857742895  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-JASMONE  | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | BETA-MYRCENE | Shoot      |         | 12.0     | -0.3360589101674067 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | SABINENE     | Shoot      |         | 15.0     | -0.2799508274305339 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 3                | ACETONE      | Leaf       |         |          |                     | Jim Duke's personal files.   |
| 3                | ISOMENTHONE  | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical            | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|---------------------|------------|---------|----------|----------------------|--|
| 0                | TRANS-2-HEPTANAL    | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | CARYOPHYLLENE-OXIDE | Shoot      |         | 1.0      | -0.3970730841170472  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-EUDESOL        | Shoot      |         | 13.0     | 0.18510526570268904  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | P-CYMENE            | Shoot      |         | 1.0      | -0.500609925430423   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | MENTHOFURAN         | Shoot      |         | 500.0    | -0.34612871699139214 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CARYOPHYLLENE  | Shoot      |         | 75.0     | -0.25792055501122796 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical            | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|---------------------|------------|---------|----------|---------------------|--|
| 0                | BICYCLOGERMACRENE   | Shoot      |         | 5.0      | -0.8497466159427722 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CYCLOCITRAL    | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | NEROLIDOL           | Shoot      |         | 4.0      | -0.3981606988520306 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ISOAMYL-ISOVALERATE | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 28               | PULEGONE            | Shoot      |         | 0.1      | -0.2690227918468267 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2,4-DECADIENAL      | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 31               | CARYOPHYLLENE       | Leaf       |         |          |                     | Jim Duke's personal files.   |
| 6                | FURFURAL            | Leaf       |         |          |                     | Jim Duke's personal files.   |



| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|----------------------|--|
| 0                | MYRTENYL-METHYL-ETHER | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | GERMACRENE-D          | Shoot      |         | 25.0     | -0.35647627073349986 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-COPAENE         | Shoot      |         | 2.0      | -0.3247580887205161  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL               | Shoot      |         | 3.0      | -0.6414348966484517  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTEN-3-OL          | Shoot      |         | 0.1      | -0.646273518203606   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 1                | VIRIDIFLOROL          | Shoot      |         | 140.0    | 1.109355092388081    | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|--------------------|------------|---------|----------|---------------------|--|
| 0                | CIS-JASMONE        | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | BETA-MYRCENE       | Shoot      |         | 26.0     | -0.3074660526172515 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | SABINENE           | Shoot      |         | 10.0     | -0.2852745731248914 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 3                | ISOMENTHONE        | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | TRANS-2-HEPTANAL   | Shoot      |         | 0.1      |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | CARYOPHYLENE-OXIDE | Shoot      |         | 3.0      | -0.3926872831083181 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|----------------------|--|
| 13               | BETA-EUDESOL          | Shoot      |         | 27.0     | 1.6248128878347115   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | OCTAN-3-OL-ACETATE    | Leaf       |         |          |                      | Jim Duke's personal files.   |
| 5                | MENTHOFURAN           | Shoot      |         | 395.0    | -0.3669798445209941  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CARYOPHYLLENE    | Shoot      |         | 32.0     | -0.34509629975614076 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ACACETIN-7-RUTINOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | BICYCLOGERMACRENE     | Shoot      |         | 7.0      | -0.841158979601764   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CYCLOCITRAL      | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | NEROLIDOL             | Shoot      |         | 0.1      | -0.4100135839778336  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|---------------------|--|
| 0                | ISOAMYL-ISOVALERATE   | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-GURJUNENE       | Shoot      |         | 4.0      | -0.9428785569529811 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 2,4-DECADIENAL        | Shoot      |         | 0.1      | -1.0                | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | FORMIC-ACID           | Leaf       |         |          |                     | Jim Duke's personal files.   |
| 0                | MYRTENYL-METHYL-ETHER | Shoot      |         | 0.1      | -1.0097721130343957 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CYCLOCITRAL      | Shoot      |         | 0.1      | -0.7109289582578825 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | GAMMA-TERPINENE       | Shoot      |         | 2.0      | -0.3929527157162362 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical      | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|---------------|------------|---------|----------|----------------------|--|
| 0                | ALPHA-COPAENE | Shoot      |         | 2.0      | -0.3247580887205161  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL       | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 67               | 1,8-CINEOLE   | Shoot      |         | 45.0     | -0.13495308546531803 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-JASMONE   | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | BETA-MYRCENE  | Shoot      |         | 37.0     | -0.2850002359707011  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | SABINENE      | Shoot      |         | 35.0     | -0.25865584465310376 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical            | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|---------------------|------------|---------|----------|---------------------|--|
| 3                | ISOMENTHONE         | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | TERPINOLENE         | Shoot      |         | 1.0      | -0.7769620719702403 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | CARYOPHYLLENE-OXIDE | Shoot      |         | 3.0      | -0.3926872831083181 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-EUDES MOL      | Shoot      |         | 24.0     | 1.3163041116635639  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | MENTHOFURAN         | Shoot      |         | 180.0    | -0.4096750104149409 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 16               | ACACETIN            | Plant      |         |          |                     | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | BICYCLOGERMACRENE   | Shoot      |         | 6.0      | -0.8454527977722681 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NEOMENTHOL          | Leaf       |         |          |                     | Jim Duke's personal files.   |

| Activities Count | Chemical                 | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------------|------------|---------|----------|----------------------|--|
| 0                | ISOAMYL-ISOVALERATE      | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-GURJUNENE          | Shoot      |         | 8.0      | -0.8502629278934796  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 7                | PIPERITONE               | Leaf       |         |          |                      | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.   |
| 0                | 1-OCTYL-3-YL-ACETATE     | Shoot      |         | 2.0      | -0.46090305337856907 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | CAMPHENE                 | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ERIODICTYOL-7-RUTINOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 22               | MYRCENE                  | Leaf       |         |          |                      | Jim Duke's personal files.   |
| 0                | BETA-CUBEBENE            | Shoot      |         | 4.0      | -0.253152042232558   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical         | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|------------------|------------|---------|----------|----------------------|--|
| 11               | GAMMA-TERPINENE  | Shoot      |         | 5.0      | -0.39087991166838365 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-COPAENE    | Shoot      |         | 2.0      | -0.3247580887205161  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL          | Shoot      |         | 1.0      | -0.6444587500209842  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 67               | 1,8-CINEOLE      | Shoot      |         | 115.0    | -0.13394916713007335 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | VERBENYL-ACETATE | Shoot      |         | 3.0      | 1.2247448713915892   | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-JASMONE      | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |



| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 2                | BETA-MYRCENE       | Shoot      |         | 36.0     | -0.2870425829385694  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 57               | ROSMARINIC-ACID    | Plant      |         | 27000.0  | -0.08324448923511193 | Fitoterapia No.62: 166.  |
| 3                | ISOMENTHONE        | Shoot      |         |          |                      | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | TERPINOLENE        | Shoot      |         | 2.0      | -0.7480787235698596  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | CARYOPHYLENE-OXIDE | Shoot      |         | 6.0      | -0.3861085815952244  | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 13               | BETA-EUDESOL       | Shoot      |         | 24.0     | 1.3163041116635639   | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NONANOIC-ACID      | Shoot      |         |          |                      | Umamoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical              | Plant Part | Low PPM | High PPM | StdDev              | Reference Citation   |
|------------------|-----------------------|------------|---------|----------|---------------------|--|
| 5                | MENTHOFURAN           | Shoot      |         | 42.0     | -0.4370793494538463 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | APIGENIN-7-RUTINOSIDE | Plant      |         |          |                     | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | 2-N-AMYL-FURAN        | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | N-HEXANAL             | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ISOAMYL-ISOVALERATE   | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-GURJUNENE       | Shoot      |         | 12.0     | -0.757647298833978  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 30               | MENTHONE              | Shoot      |         |          |                     | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical                             | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------------------------|------------|---------|----------|----------------------|--|
| 0                | 1-OCTYL-3-YL-ACETATE                 | Shoot      |         | 3.0      | -0.43804835651682184 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | CAMPHENE                             | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ERIODICTYOL-7-BETA-D-GLUCOPYRANOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | BICYCLOGERMACRENE                    | Shoot      |         | 2.0      | -0.8626280704542847  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CUBEBENE                        | Shoot      |         | 2.0      | -0.2573198400961167  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | GAMMA-TERPINENE                      | Shoot      |         | 5.0      | -0.39087991166838365 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-COPAENE                        | Shoot      |         | 2.0      | -0.3247580887205161  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 63               | MENTHOL                              | Leaf       |         | 3570.0   | -0.19360438419646248 | --   |

| Activities Count | Chemical         | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|------------------|------------|---------|----------|----------------------|--|
| 67               | 1,8-CINEOLE      | Shoot      |         | 140.0    | -0.13359062486748594 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | VERBENYL-ACETATE | Shoot      |         | 2.0      | -0.8164965809277258  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-JASMONE      | Shoot      |         | 0.1      | -1.4988327508640107  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | BETA-MYRCENE     | Shoot      |         | 85.0     | -0.18696758151302673 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | PIPERITONE-OXIDE | Leaf       |         |          |                      | Jim Duke's personal files.   |
| 3                | METHYL-ACETATE   | Shoot      |         | 16.0     | 1.0                  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 3                | ISOMENTHONE      | Shoot      |         | 0.1      | -0.5336018108879219  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical                          | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------------------------|------------|---------|----------|----------------------|--|
| 9                | TERPINOLENE                       | Shoot      |         | 2.0      | -0.7480787235698596  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 8                | CARYOPHYLENE-OXIDE                | Shoot      |         | 1.0      | -0.3970730841170472  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 5                | BETA-ELEMENE                      | Shoot      |         | 29.0     | -0.24164481962470882 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 2                | NONANOIC-ACID                     | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | APIGENIN-7-BETA-D-GLUCOPYRANOSIDE | Plant      |         |          |                      | J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.   |
| 0                | 2-N-AMYL-FURAN                    | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | N-HEXANAL                         | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical             | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|----------------------|------------|---------|----------|----------------------|--|
| 0                | ISOAMYL-ISOVALERATE  | Shoot      |         | 0.1      | -0.4765294039940469  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-GURJUNENE      | Shoot      |         | 10.0     | -0.8039551133637287  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 30               | MENTHONE             | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | 1-OCTYL-3-YL-ACETATE | Shoot      |         | 2.0      | -0.46090305337856907 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 9                | CAMPHENE             | Shoot      |         |          |                      | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | EO                   | Shoot      |         | 1100.0   | -0.8512204032739488  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical        | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|-----------------|------------|---------|----------|----------------------|--|
| 13               | BETA-PINENE     | Shoot      |         | 13.0     | -0.12018976188565819 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-CUBEBENE   | Shoot      |         | 8.0      | -0.2448164465054405  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 11               | GAMMA-TERPINENE | Shoot      |         | 8.0      | -0.3888071076205311  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | ALPHA-COPAENE   | Shoot      |         | 2.0      | -0.3247580887205161  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 60               | LIMONENE        | Shoot      |         | 60.0     | -0.29789596175373306 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 67               | 1,8-CINEOLE     | Shoot      |         | 110.0    | -0.13402087558259082 | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |

| Activities Count | Chemical           | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|--------------------|------------|---------|----------|----------------------|--|
| 0                | VERBENYL-ACETATE   | Shoot      |         | 2.0      | -0.8164965809277258  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | CIS-BETA-OCIMENE   | Shoot      |         | 2.0      | -0.5430365588721919  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 0                | BETA-FARNESENE     | Shoot      |         | 6.0      | -0.4281479701901117  | Umemoto, K., Arai, T., Nii, H. and Furukawa, K. 1993. A New Chemotype of <i>Mentha aquatica</i> Containing Sesquiterpene Alcohols as Major Components. <i>Nippon Nogeikagaku Kaishi</i> 67(10): 1417-1419. |
| 3                | PIPERITENONE       | Leaf       |         |          |                      | Jim Duke's personal files.   |
| 1                | MENTHYL-VALERATE   | Leaf       |         |          |                      | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.   |
| 0                | OCTAN-3-OL         | Leaf       | 3.0     | 162.0    | -0.4159560336666566  | --   |
| 0                | P-CYMOL            | Leaf       | 6.0     | 51.0     | -0.5242397055421542  | --   |
| 13               | BETA-PINENE        | Leaf       | 15.0    | 315.0    | 0.035492687396899314 | --   |
| 28               | ALPHA-PINENE       | Leaf       | 18.0    | 68.0     | -0.22012965416485936 | --   |
| 30               | MENTHONE           | Leaf       | 23.0    | 212.0    | -0.613866095511492   | --   |
| 3                | ISOMENTHONE        | Leaf       | 30.0    | 170.0    | -0.62376353248996    | --   |
| 5                | MENTHOFURAN        | Leaf       | 30.0    | 7582.0   |                      | --   |
| 1                | VIRIDIFLOROL       | Leaf       | 36.0    | 1105.0   | 4.397695972931276    | --   |
| 28               | PULEGONE           | Leaf       | 54.0    | 153.0    | -0.6636583918928131  | --   |
| 0                | CINEOLE            | Leaf       | 63.0    | 1904.0   | -0.5927137247457667  | --   |
| 0                | BETA-CARYOPHYLLENE | Leaf       | 70.0    | 850.0    | 0.08134626903727397  | --   |
| 2                | GERMACRENE-D       | Leaf       | 70.0    | 595.0    | -0.04345648866625705 | --   |



| Activities Count | Chemical               | Plant Part | Low PPM | High PPM | StdDev               | Reference Citation   |
|------------------|------------------------|------------|---------|----------|----------------------|--|
| 60               | LIMONENE               | Leaf       | 114.0   | 714.0    | 0.303344274117639    | --   |
| 0                | (-)-LIMONENE           | Leaf       | 210.0   | 595.0    | -0.8265112371345806  | --   |
| 67               | 1,8-CINEOLE            | Leaf       | 300.0   | 850.0    | -0.42089267832815774 | --   |
| 0                | (+)-MENTHOFURAN        | Leaf       | 330.0   | 1445.0   | 1.4129257812897391   | --   |
| 0                | (+)-NEOMENTHYL-ACETATE | Leaf       | 480.0   | 1360.0   |                      | --   |
| 2                | (-)-MENTHONE           | Leaf       | 510.0   | 2805.0   | -0.7890023610971657  | --   |
| 19               | CARVONE                | Leaf       | 510.0   | 1785.0   | 0.08317670792891492  | Jim Duke's personal files.   |
| 0                | (+)-NEOMENTHOL         | Leaf       | 630.0   | 1785.0   | 0.4755159366502996   | --   |
| 2                | ELEMOL                 | Leaf       | 660.0   | 1870.0   | 1.3469294965542162   | --   |
| 53               | LINALOOL               | Leaf       | 1080.0  | 3060.0   | 1.471569724590626    | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 0                | LINALOL                | Leaf       | 1080.0  | 3060.0   | 1.3698944061795897   | --   |
| 0                | (+)-ISOMENTHONE        | Leaf       | 1230.0  | 3485.0   | -0.08380547905273038 | --   |
| 0                | EO                     | Leaf       | 3000.0  | 8500.0   | -0.26696073465631487 | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |