

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Cannabis sativa

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|----------------------|------------------|----------|----------|----------------------|--|
| 27 | LINOLEIC-ACID | Seed | 207000.0 | 250600.0 | 1.229332063524583 | -- |
| 15 | FIBER | Seed | 165000.0 | 206450.0 | 0.565927856848296 | -- |
| 18 | OLEIC-ACID | Seed | 44400.0 | 53700.0 | -0.5376546816338774 | -- |
| 4 | PHOSPHORUS | Seed | 9700.0 | 11227.0 | 1.5521640659289466 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 28 | CALCIUM | Seed | 1200.0 | 1389.0 | -0.5064218426303934 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 6 | IRON | Seed | 120.0 | 139.0 | -0.05479437162869729 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 39 | NIACIN | Seed | 21.0 | 24.0 | -0.5653371145111872 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 31 | THIAMIN | Seed | 3.2 | 3.7 | -0.6881088248838246 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 15 | RIBOFLAVIN | Seed | 1.7 | 2.0 | -0.5841625019907875 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 53 | BETA-CAROTENE | Seed | 0.0 | 0.06 | -0.4255580240943812 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 8 | TRANS-ANETHOLE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 16 | TETRAHYDROCANNABINOL | Plant | | | | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 3 | CANNABINOL | Leaf | | | | -- |
| 9 | CAMPHENE | Leaf Essent. Oil | | | | -- |
| 7 | HISTIDINE | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|------------------------------|--------------------|---------|----------|--------|--|
| 2 | CANNABIGEROLIC-ACID | Leaf | | 40.0 | | -- |
| 8 | CANNABIDIOL | Seed | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 1 | CANNABICHROMENE | Sprout Seedling | | | | -- |
| 6 | BETA-BISABOLENE | Leaf Essent. Oil | | | | -- |
| 1 | GLUCOSAMINE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 1 | ISOBUTYRALDEHYDE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 1 | CANNABICHROMENE | Plant | | | | -- |
| 3 | CANNABINOL | Inflorescence | | | | -- |
| 9 | CAMPHENE | Flower Essent. Oil | | | | -- |
| 3 | CANNABIGEROL | Leaf | | | | -- |
| 8 | CANNABIDIOL | Leaf | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Shoot | | | | -- |
| 3 | (-)-BORNEOL | Plant | | | | -- |
| 6 | BETA-BISABOLENE | Flower Essent. Oil | | | | -- |
| 2 | DELTA-9-TETRAHYDROCANNABINOL | Inflorescence | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|------------------------------|---------------------|---------|----------|--------|--|
| 9 | DELTA-CADINENE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 29 | TRYPTOPHAN | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 3 | CANNABINOL | Fruit | | 1275.0 | | -- |
| 9 | CAMPHENE | Resin, Exudate, Sap | | | | -- |
| 3 | CANNABIGEROL | Inflorescence | | | | -- |
| 8 | CANNABIDIOL | Shoot | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Inflorescence | | | | -- |
| 20 | ALPHA-BISABOLOL | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 9 | BENZYL-ACETATE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 2 | DELTA-9-TETRAHYDROCANNABINOL | Trichome | | | | -- |
| 9 | DELTA-CADINENE | Essential Oil | | | | -- |
| 3 | CANNABINOL | Seed | | 8.0 | | -- |
| 2 | CAMPESTEROL | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABIGEROL | Plant | | | | -- |
| 1 | CANNABICHROMENE | Seed | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|------------------------------|--------------------|---------|----------|----------------------|--|
| 20 | ALPHA-BISABOLOL | Essential Oil | | | | -- |
| 9 | BENZYL-ACETATE | Essential Oil | | | | -- |
| 2 | DELTA-9-TETRAHYDROCANNABINOL | Pollen Or Spore | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Pollen Or Spore | | | | -- |
| 1 | CIS-ANETHOLE | Essential Oil | | | | -- |
| 3 | CANNABINOL | Plant | | | | -- |
| 2 | CAMPESTEROL | Seed | | | | -- |
| 112 | ASCORBIC-ACID | Seed | | 0.0 | -0.33845664486186666 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | CANNABIGEROL | Root | | | | -- |
| 1 | CANNABICHROMENE | Leaf | | | | -- |
| 20 | ALPHA-BISABOLOL | Flower Essent. Oil | | | | -- |
| 1 | BEHENIC-ACID | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 2 | DELTA-9-TETRAHYDROCANNABINOL | Shoot | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Leaf | | | | -- |
| 1 | CIS-ANETHOLE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABINOL | Sprout Seedling | | | | -- |
| 3 | CANNABIGEROL | Shoot | | | | -- |
| 1 | CANNABICHROMENE | Resin Essent. Oil | | | | -- |
| 2 | CAMPESTEROL | Root | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|------------------------------|-----------------|---------|----------|--------|--|
| 7 | PHENYLALANINE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 8 | AZELAIC-ACID | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 2 | DELTA-9-TETRAHYDROCANNABINOL | Plant | | | | -- |
| 8 | CANNABIDIOL | Root | | | | -- |
| 41 | CAMPHOR | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 4 | ORIENTIN | Plant | | | | J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991. |
| 3 | CANNABINOL | Bark | | | | -- |
| 3 | CANNABIGEROL | Sprout Seedling | | | | -- |
| 1 | CANNABICHROMENE | Shoot | | | | -- |
| 2 | CADAVERINE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | ALANINE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|--------------------|---------------------|---------|----------|--------|--|
| 3 | ASPARTIC-ACID | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABINOL | Bud | | | | -- |
| 8 | CANNABIDIOL | Leaf Essent. Oil | | | | -- |
| 41 | CAMPHOR | Essential Oil | | | | -- |
| 3 | CANNABINOL | Shoot | | | | -- |
| 3 | CANNABIGEROL | Resin, Exudate, Sap | | | | -- |
| 1 | CANNABICHROMENE | Resin, Exudate, Sap | | | | -- |
| 35 | BORNEOL | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | ACETONE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 14 | ARGININE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABINOL | Flower Essent. Oil | | | | -- |
| 8 | CANNABIDIOL | Bud | | | | -- |
| 8 | CANNABIDIOL | Resin, Exudate, Sap | | | | -- |
| 41 | CAMPHOR | Leaf Essent. Oil | | | | -- |
| 3 | CANNABINOL | Resin, Exudate, Sap | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Root | | | | -- |
| 1 | CANNABICHROMENE | Bud | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------|---------------------|---------|----------|--------|--|
| 35 | BORNEOL | Essential Oil | | | | -- |
| 6 | ACETALDEHYDE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 1 | ARABITOL | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABINOL | Root | | | | -- |
| 8 | CANNABIDIOL | Inflorescence | | | | -- |
| 8 | CANNABIDIOL | Plant | | | | -- |
| 9 | CAMPHENE | Plant | | | | -- |
| 2 | CANNABIGEROLIC-ACID | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |
| 3 | CANNABIDIOLIC-ACID | Resin, Exudate, Sap | | | | -- |
| 1 | CANNABICHROMENE | Inflorescence | | | | -- |
| 35 | BORNEOL | Resin, Exudate, Sap | | | | -- |
| 8 | TRANS-ANETHOLE | Essential Oil | | | | -- |
| 15 | TRIGONELLINE | Plant | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 3 | CANNABINOL | Leaf Essent. Oil | | | | -- |
| 8 | CANNABIDIOL | Sprout Seedling | | | | -- |
| 8 | CANNABIDIOL | Fruit | | 20870.0 | | -- |
| 9 | CAMPHENE | Essential Oil | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------|---------------|---------|----------|--------|--|
| 2 | CANNABIGEROLIC-ACID | Inflorescence | | | | -- |
| 3 | CANNABIDIOLIC-ACID | Bark | | | | -- |
| 1 | CANNABICHROMENE | Root | | | | -- |
| 6 | BETA-BISABOLENE | Plant | | | | Turner, C. E., El Sohly, M. A., Boeren, E. G. 1980. Constituents of Cannabis sativa L. XVII. A Review of the Natural Constituents. J Natural Products, 432: 169-234. |