

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Phoenix dactylifera

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|----------------------------|-----------------|---------|----------|----------------------|--|
| 1 | 5-O-CAFFEYOYLSHIKIMIC-ACID | Fruit | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 6 | ACETALDEHYDE | Fruit | | | | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 3 | ALANINE | Fruit | 80.0 | 1290.0 | -0.9501454757917915 | -- |
| 5 | ALUMINUM | Seed | 3.0 | 13.0 | -0.34201085436666395 | Abstract (See species file) |
| 5 | ALUMINUM | Fruit | | 51.0 | -0.20868440554018103 | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 101 | APIGENIN | Stem | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 14 | ARGININE | Fruit | 620.0 | 2090.0 | -0.5920936366686652 | -- |
| 112 | ASCORBIC-ACID | Fruit | 0.0 | 750.0 | -0.23785626092666567 | -- |
| 2 | ASPARAGINE | Fruit | 2300.0 | 4500.0 | 2.264581694669994 | Abstract (See species file) |
| 3 | ASPARTIC-ACID | Fruit | 20.0 | 3150.0 | -0.9207574415888534 | -- |
| 1 | BEHENIC-ACID | Seed | | | | Abstract (See species file) |
| 20 | BENZOIC-ACID | Stem | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 9 | BETA-AMYRIN | Pollen Or Spore | | | | Abstract (See species file) |
| 53 | BETA-CAROTENE | Fruit | 1.0 | 3.6 | -0.14384189399264724 | -- |
| 47 | BETA-SITOSTEROL | Pollen Or Spore | | | | Abstract (See species file) |

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|------------------|------------------|-----------------|---------|----------|---------------------|---|
| 4 | BORON | Fruit | | 7.0 | -0.6629690111653129 | Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron). |
| 3 | CADMIUM | Seed | 0.0 | 9.0 | 4.252910566397704 | Abstract (See species file) |
| 28 | CALCIUM | Seed | 18.0 | 436.0 | -0.6814478670478287 | Abstract (See species file) |
| 28 | CALCIUM | Fruit | 140.0 | 2000.0 | -0.4283573443119461 | -- |
| 2 | CAMPESTEROL | Stem | | | | Abstract (See species file) |
| 3 | CAPRIC-ACID | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 5 | CAPRYLIC-ACID | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 7 | CHLORINE | Fruit | 270.0 | 310.0 | -0.4791512669647793 | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 77 | CHLOROGENIC-ACID | Fruit | | | | Abstract (See species file) |
| 21 | CHLOROPHYLL | Fruit | 0.0 | 410.0 | 1.542593994049385 | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 1 | CHOLESTEROL | Pollen Or Spore | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 1 | CHOLESTEROL | Fruit | | 0.0 | | USDA's Ag Handbook 8 and sequelae) |
| 12 | COPPER | Seed | 0.6 | 2.0 | -1.1623352892566066 | Abstract (See species file) |
| 12 | COPPER | Fruit | 2.0 | 4.0 | -0.6863742487163819 | -- |

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|------------------|--------------|-----------------|---------|----------|---------------------|--|
| 57 | COUMARIN | Leaf | | | | Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981. |
| 13 | CYSTEINE | Fruit | 110.0 | 1140.0 | 1.0 | Abstract (See species file) |
| 2 | CYSTINE | Fruit | 7.0 | 580.0 | -0.4707560662338592 | -- |
| 8 | ELLAGITANNIN | Plant | 0.0 | 9900.0 | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 5 | ERGOSTEROL | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 8 | ESTRONE | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 8 | ESTRONE | Pollen Or Spore | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 15 | FIBER | Fruit | 22000.0 | 85000.0 | -0.5348255773149249 | -- |
| 15 | FIBER | Seed | 64000.0 | 300000.0 | 1.304614634419771 | -- |
| 15 | FOLACIN | Fruit | 0.08 | 0.17 | -0.7670170596960343 | USDA's Ag Handbook 8 and sequelae) |
| 8 | FRUCTOSE | Seed | | 15300.0 | 1.4089399073526936 | Abstract (See species file) |
| 8 | FRUCTOSE | Fruit | | 308000.0 | 4.088589817170726 | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 22 | GABA | Fruit | 2660.0 | 3370.0 | 1.407126578678398 | -- |
| 1 | GALACTOSE | Fruit | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |

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|------------------|-------------------------|------------|---------|----------|-----------------------|--|
| 2 | GALLO-TANNIN | Plant | 4300.0 | 27800.0 | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 22 | GAMMA-AMINOBUTYRIC-ACID | Fruit | 2660.0 | 3370.0 | 1.7044292848924936 | Abstract (See species file) |
| 7 | GLUCOSE | Seed | | 16800.0 | -0.14985111390158956 | Abstract (See species file) |
| 7 | GLUCOSE | Fruit | | 357000.0 | 2.893929119951419 | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 8 | GLUTAMIC-ACID | Fruit | 400.0 | 6160.0 | -0.5507946581831958 | -- |
| 5 | GLUTAMINE | Fruit | 650.0 | 870.0 | 1.1267392876723437 | -- |
| 12 | GLYCINE | Fruit | 40.0 | 3010.0 | -0.2300074341376021 | -- |
| 7 | HISTIDINE | Fruit | 10.0 | 390.0 | -0.9273080508754981 | -- |
| 12 | IODINE | Fruit | | 0.06 | -0.2904150459573493 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 6 | IRON | Seed | 5.0 | 17.0 | -0.6216437483021793 | Abstract (See species file) |
| 6 | IRON | Fruit | 10.0 | 151.0 | 0.07148811973975773 | -- |
| 4 | ISOCHLOROGENIC-ACID | Fruit | | | | Abstract (See species file) |
| 3 | ISOLEUCINE | Fruit | 20.0 | 4650.0 | 0.3040077606201815 | -- |
| 4 | LACTOSE | Seed | | | | Abstract (See species file) |
| 7 | LAURIC-ACID | Seed | 4800.0 | 54000.0 | -0.028060776935393963 | -- |
| 2 | LEUCINE | Fruit | 5.0 | 1140.0 | -0.8420937960569738 | -- |
| 1 | LEUCOANTHOCYANIN | Fruit | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 27 | LINOLEIC-ACID | Seed | 6000.0 | 10000.0 | -0.8321526228533093 | -- |

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|------------------|------------------------|------------|---------|----------|----------------------|--|
| 21 | LUPEOL | Stem | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 2 | LUPEOL-ACETATE | Stem | | | | -- |
| 15 | LUTEIN | Fruit | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 16 | LYCOPENE | Fruit | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 4 | LYSINE | Fruit | 30.0 | 2450.0 | -0.4310869639742895 | -- |
| 65 | MAGNESIUM | Fruit | 325.0 | 790.0 | -0.6203759963079205 | -- |
| 2 | MALTOSE | Seed | | | | Abstract (See species file) |
| 14 | MANGANESE | Seed | | 16.0 | -0.467393923690488 | Abstract (See species file) |
| 14 | MANGANESE | Fruit | 3.0 | 45.0 | -0.10681336019281051 | -- |
| 15 | METHIONINE | Fruit | 5.0 | 2190.0 | 1.5164823455152185 | -- |
| 6 | MYRISTIC-ACID | Seed | 2400.0 | 4000.0 | -0.24363975823939635 | -- |
| 39 | NIACIN | Fruit | 10.0 | 135.0 | 0.9932872798882364 | -- |
| 18 | OLEIC-ACID | Seed | 27000.0 | 51000.0 | -0.55985026693048 | -- |
| 9 | OXALIC-ACID | Seed | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 13 | P-HYDROXY-BENZOIC-ACID | Stem | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |

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|------------------|-----------------------|-----------------|---------|----------|----------------------|--|
| 4 | P-HYDROXYBENZALDEHYDE | Stem | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 13 | PALMITIC-ACID | Seed | 15000.0 | 25000.0 | -0.18376993157030574 | -- |
| 2 | PALMITOLEIC-ACID | Seed | | | | Abstract (See species file) |
| 11 | PANTOTHENIC-ACID | Fruit | 8.0 | 10.0 | -0.5169531369709149 | USDA's Ag Handbook 8 and sequelae) |
| 7 | PHENYLALANINE | Fruit | 8.0 | 740.0 | -0.8967709656324975 | -- |
| 4 | PHOSPHORUS | Fruit | 370.0 | 8795.0 | 1.69456590371845 | -- |
| 4 | PHOSPHORUS | Seed | | 1120.0 | -1.1187018222711056 | Abstract (See species file) |
| 5 | PHYLLOQUINONE | Fruit | | 0.06 | -0.22359887323159108 | -- |
| 2 | PIPECOLIC-ACID | Fruit | | | | List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979. |
| 30 | POLYPHENOLS | Fruit | | 30000.0 | 1.146789651247877 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 14 | POTASSIUM | Seed | 28.0 | 2440.0 | -0.8908725075191605 | Abstract (See species file) |
| 14 | POTASSIUM | Fruit | 6250.0 | 8780.0 | -0.8083399078943273 | USDA's Ag Handbook 8 and sequelae) |
| 176 | QUERCETIN | Pollen Or Spore | | | | Abstract (See species file) |
| 1 | RAFFINOSE | Seed | | 3000.0 | -0.7470721014785289 | Abstract (See species file) |
| 15 | RIBOFLAVIN | Fruit | 0.2 | 1.3 | -0.7944081953947483 | -- |
| 87 | RUTIN | Pollen Or Spore | | | | Abstract (See species file) |
| 7 | SALICYLATES | Fruit | 3.0 | 45.0 | -0.20770615344752882 | -- |
| 1 | SERINE | Fruit | 60.0 | 1960.0 | -0.5941860880545526 | -- |
| 26 | SEROTONIN | Fruit | 8.0 | 9.0 | -1.3897978667604325 | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |

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|------------------|--------------|------------|---------|----------|----------------------|--|
| 4 | SILICON | Fruit | | 660.0 | 1.5358789152594374 | Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705. |
| 1 | SODIUM | Seed | 15.0 | 820.0 | 0.5859664537894901 | Abstract (See species file) |
| 1 | SODIUM | Fruit | 10.0 | 380.0 | -0.1479158132265294 | -- |
| 11 | SORBITOL | Fruit | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 1 | STACHYOSE | Seed | | 2200.0 | -1.4073378200507318 | Abstract (See species file) |
| 5 | STARCH | Fruit | | 206000.0 | -0.14195257090516208 | Abstract (See species file) |
| 8 | STEARIC-ACID | Seed | 3000.0 | 10000.0 | -0.3484239972825226 | -- |
| 12 | STIGMASTEROL | Fruit | | | | Abstract (See species file) |
| 14 | SUCROSE | Seed | | 38200.0 | -0.15445921462296788 | Abstract (See species file) |
| 14 | SUCROSE | Fruit | 0.0 | 400000.0 | 2.089285952799339 | -- |
| 14 | SULFUR | Fruit | 510.0 | 590.0 | -0.5738869470964798 | -- |
| 35 | TANNIN | Fruit | 200.0 | 18000.0 | -0.7380230311091176 | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |
| 31 | THIAMIN | Fruit | 0.1 | 1.7 | -0.4650060616434584 | -- |
| 4 | THREONINE | Fruit | 10.0 | 980.0 | -0.8470550566495191 | -- |
| 29 | TRYPTOPHAN | Fruit | 500.0 | 645.0 | -0.2883336982090432 | USDA's Ag Handbook 8 and sequelae) |
| 8 | TYROSINE | Fruit | 10.0 | 1730.0 | -0.2853897488258916 | -- |
| 3 | VALINE | Fruit | 5.0 | 2710.0 | -0.3596290253078901 | -- |
| 2 | VIOLAXANTHIN | Fruit | | | | Rizk, A.F.M. and Al-Nowaihi, A.S., The Phytochemistry of the Horticultural Plants of Qatar, Scientific and Applied Research Centre, University of Qatar. |
| 3 | XYLOSE | Fruit | | | | ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes. |

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|------------------|----------|------------|---------|----------|---------------------|------------------------------------|
| 77 | ZINC | Fruit | 3.0 | 4.0 | -0.7913051373688869 | USDA's Ag Handbook 8 and sequelae) |
| 77 | ZINC | Seed | 0.6 | 29.0 | -0.4579921356186253 | Abstract (See species file) |