

**Dr. Duke's Phytochemical and Ethnobotanical Databases**

**Chemicals found in Ananas comosus**

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	WATER	Fruit	812000.0	890000.0	0.5192678759882906	--
0	CARBOHYDRATES	Fruit	116000.0	938000.0	0.8294973851052414	--
5	STARCH	Stem	100000.0	150000.0	1.0	Wealth of India.
14	SUCROSE	Fruit	59000.0	150000.0	0.31672247615443067	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7	GLUCOSE	Fruit	10000.0	32000.0	-0.5554772375932454	--
8	FRUCTOSE	Fruit	6000.0	23000.0	-0.5685085977706082	--
1	CELLULOSE	Fruit	4300.0	5400.0	-0.6079389189790592	--
0	PROTEIN	Fruit	4000.0	55000.0	-0.7305766269277133	--
0	PENTOSANS	Fruit	3300.0	4300.0	-0.82843239727699	--
23	CITRIC-ACID	Fruit	3200.0	86000.0	0.7561189975512667	--
15	FIBER	Fruit	3000.0	45000.0	-0.9122848051944537	--
0	ASH	Fruit	2800.0	36000.0	-0.5350952496139966	--
4	PUFA	Fruit	1460.0	10815.0	-0.0653033406862613	USDA's Ag Handbook 8 and sequelae)
0	HEXOSANS	Fruit	1000.0	1500.0		--
0	FAT	Fruit	1000.0	42772.0	-0.31456299424703693	--
15	MALIC-ACID	Fruit	1000.0	4700.0	-0.6457922708636072	--
27	LINOLEIC-ACID	Fruit	840.0	6222.0	-0.26761688873606465	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Fruit	620.0	4592.0	0.9270718186858735	USDA's Ag Handbook 8 and sequelae)
24	PECTIN	Fruit	600.0	1600.0	-0.6112516644530539	--
13	MUFA	Fruit	480.0	3556.0	-0.2022365513065334	USDA's Ag Handbook 8 and sequelae)
0	KILOCALORIES	Fruit	460.0	3770.0	0.16623260731496653	Wealth of India.
18	OLEIC-ACID	Fruit	450.0	3333.0	-0.4550566138643591	USDA's Ag Handbook 8 and sequelae)
0	NITROGEN	Fruit	450.0	1150.0	-0.9446478386927912	--
54	BROMELAIN	Stem	400.0	6000.0		--
25	P-COUMARIC-ACID	Plant	330.0	730.0	1.0	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SFA	Fruit	320.0	2370.0	-0.3271093228160582	USDA's Ag Handbook 8 and sequelae)
3	ASPARTIC-ACID	Fruit	293.0	4222.0	-0.7799223200234909	--
1	SERINE	Fruit	250.0	1852.0	-0.6323156765928126	USDA's Ag Handbook 8 and sequelae)
61	FERULIC-ACID	Plant	200.0	760.0	0.30089312112081323	--
13	PALMITIC-ACID	Fruit	190.0	1407.0	-0.34363159570129753	USDA's Ag Handbook 8 and sequelae)
3	ALANINE	Fruit	170.0	1259.0	-0.9623293474565466	USDA's Ag Handbook 8 and sequelae)
112	ASCORBIC-ACID	Fruit	148.0	4178.0	-0.024713529850358282	--
7	CHLORINE	Fruit	130.0	460.0	-0.37076321149612135	--
4	SILICON	Fruit	110.0	690.0	1.6333480894777093	--
14	POTASSIUM	Fruit	110.0	18200.0	0.0250816407680162	--
15	METHIONINE	Fruit	110.0	815.0	-0.17673494188159297	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Fruit	110.0	1075.0	-0.4884044378711737	--
8	STEARIC-ACID	Fruit	110.0	815.0	-0.22517226092311657	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Fruit	90.0	3333.0	-0.7707955020140207	--
4	THREONINE	Fruit	78.0	859.0	-0.8973538144786632	--
14	SULFUR	Fruit	70.0	200.0	-0.8453199626150852	--
12	GLYCINE	Fruit	65.0	1259.0	-0.9073607916848047	--
28	CALCIUM	Fruit	62.0	1308.0	-0.5880435225997285	--
2	PHYTOSTEROLS	Fruit	60.0	444.0	-0.6459122529026068	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Fruit	60.0	923.0	-0.6964737105069562	--
8	TYROSINE	Fruit	58.0	889.0	-0.6338783019676755	--
9	OXALIC-ACID	Fruit	50.0	58.0	-0.3031507791033899	--
7	HISTIDINE	Fruit	48.0	667.0	-0.7330978320953143	--
14	ARGININE	Fruit	46.0	1333.0	-0.794013888564445	--
4	LYSINE	Fruit	46.0	1852.0	-0.5859651529954232	--
7	PHENYLALANINE	Fruit	40.0	889.0	-0.8450965469447457	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	VALINE	Fruit	39.0	1185.0	-0.6742786315009667	--
0	PROLINE	Fruit	31.0	963.0	-0.8357784281624211	--
2	PALMITOLEIC-ACID	Fruit	30.0	220.0	-0.3052214375445054	USDA's Ag Handbook 8 and sequelae)
2	LEUCINE	Fruit	24.0	1407.0	-0.7853327434466933	--
3	ISOLEUCINE	Fruit	23.0	963.0	-0.8033643152755049	--
2	CYSTINE	Fruit	20.0	148.0	-0.9213988097846431	--
26	SEROTONIN	Fruit	19.0	60.0	0.9214964116563734	--
14	MANGANESE	Fruit	12.0	209.0	0.9745812460530798	USDA's Ag Handbook 8 and sequelae)
7	SALICYLATES	Fruit	10.0	150.0	0.09337758267881556	--
1	SODIUM	Fruit	10.0	347.0	-0.15104516616496144	--
6	IRON	Fruit	3.0	73.0	-0.237916857716136	--
6	ETHYL-ACETATE	Fruit	3.0	120.0	-0.70662139478696	--
39	NIACIN	Fruit	2.0	33.0	-0.3702757051487892	--
12	COPPER	Fruit	1.0	8.8	-0.31279291639814205	USDA's Ag Handbook 8 and sequelae)
32	ALPHA-TOCOPHEROL	Fruit	1.0	7.0	-1.0138725518998306	USDA's Ag Handbook 8 and sequelae)
0	ESTERS	Fruit	1.0	250.0		--
11	PANTOTHENIC-ACID	Fruit	1.0	11.0	-0.4531667614192529	--
0	VIT-B-6	Fruit	0.9	6.0	-0.3708031557292606	USDA's Ag Handbook 8 and sequelae)
77	ZINC	Fruit	0.7	6.0	-0.7311333825482068	USDA's Ag Handbook 8 and sequelae)
6	ACETALDEHYDE	Fruit	0.61	1.4	-0.7074252260202778	--
0	METHYL-BETA-METHYLTHIOPROPIONATE	Fruit	0.12	1.1		--
12	IODINE	Fruit	0.0	1.0	-0.2853656286580971	--
12	P-AMINOBENZOIC-ACID	Fruit	0.0	1.0		--
31	THIAMIN	Fruit	0.0	7.0	0.21342198396383905	--
15	RIBOFLAVIN	Fruit	0.0	3.0	-0.4303249009534089	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
53	BETA-CAROTENE	Fruit	0.0	3.0	-0.14500168318231235	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	NITRATE	Fruit	0.0	1200.0		--
16	ACETIC-ACID	Fruit		0.49	-0.6429596690411867	--
0	METHYL-BETA-HYDROXYBUTYRATE	Fruit		0.006		--
0	ERGOSTEROL-PEROXIDE	Plant				--
0	CYANIDIN-3,5,3'-TRIGLUCOSIDE	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	L-MALIC-ACID	Fruit				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	GAMMA-BUTYROLACTONE	Fruit				--
0	BUTYL-FORMATE	Fruit				--
0	ETHYL-CAPRYLATE	Fruit				--
5	STARCH	Leaf		30000.0	-0.15269733104161728	Wealth of India.
0	METHYL-N-PROPYL-KETONE	Fruit				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	METHYL-BETA-ACETOXYHEXANOATE	Fruit		0.03		--
0	DIMETHYL-MALONATE	Fruit		0.06		--
2	CAMPESTEROL	Fruit		10.0	-0.574497534390022	--
0	ISOPROPYL-ISOBUTYRATE	Fruit				--
22	GABA	Fruit		124.0	-0.8260218279660345	--
0	BROMELIN	Fruit				--
0	ETHYL-CAPROATE	Fruit		0.77		--
9	SINAPIC-ACID	Fruit				Wealth of India.
2	METHYL-ISOVALERATE	Fruit		0.6		--
3	METHYL-ACETATE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	INDOLE-ACETIC-ACID-OXIDASE	Fruit				--
0	DELTA-OCTALACTONE	Fruit		0.3	0.9999999999999998	--
0	CAMPESTANOL	Leaf				Wealth of India.
15	5-HYDROXYTRYPTAMINE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
54	BROMELAIN	Leaf				--
54	BROMELAIN	Fruit		800.0		--
0	TRANS-TETRAHYDRO-ALPHA-ALPHA-5-TRIMETHYL-5-VINYLFURFURYL-ALC	Plant				--
1	ETHYL-BUTYRATE	Fruit				--
0	ANANASIC-ACID	Plant				--
0	METHYL-ISOCAPROATE	Fruit		1.4		--
102	CAFFEIC-ACID	Fruit				Wealth of India.
0	2,5-DIMETHYL-4-HYDROXY-3(2H)-FURANONE	Plant		1.2		--
4	BORON	Fruit		0.2	-0.7998787652725032	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).
0	ETHYL-BETA-METHYLTHIOPROPIONATE	Fruit		0.09		--
5	PHYLLOQUINONE	Fruit		0.002	-0.2326945725033858	--
1	AMYL-CAPROATE	Fruit				--
0	METHYL-ISOBUTYRATE	Fruit				--
0	PHOSPHATASE	Fruit				--
2	METHANOL	Fruit				--
47	BETA-SITOSTEROL	Fruit		40.0	-0.7416857929866011	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
54	BROMELAIN	Pericarp		750.0		--
0	BIACETYL	Fruit				--
0	ETHYL-BETA-HYDROXYHEXANOATE	Fruit		0.03		--
6	MYRISTIC-ACID	Leaf				Wealth of India.
0	METHYL-CIS-(4?)-OCTENOATE	Fruit		0.001		--
23	ALPHA-TERPINEOL	Fruit				Wealth of India.
54	BROMELAIN	Fruit Juice				--
0	BETA-METHYL-THIOPROPIONIC-ACID-METHYL-ESTER	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ETHYL-BETA-ACETOXYHEXANOATE	Fruit		0.006		--
0	MYRICYL-ALCOHOL	Plant				Wealth of India.
2	METHYL-CAPRYLATE	Fruit		0.75		--
0	ANANASIC-ACID	Stem				--
0	PEROXIDASE	Fruit				--
5	GLUTAMINE	Fruit		256.0	-1.3035344452228055	--
0	5-STIGMASTENE-3-BETA-7-ALPHA-DIOL	Leaf				--
1	ETHYL-PROPIONATE	Fruit				--
53	LINALOOL	Fruit				Wealth of India.
0	BETA-METHYL-THIOPROPIONIC-ACID-ETHYL-ESTER	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	METHYL-CAPROATE	Fruit				--
0	ISOCAPRONIC-ACID	Fruit				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ETHYL-ALCOHOL	Fruit		60.0		--
3	CHAVICOL	Fruit		0.27	-0.9394828377321076	--
0	ERGOSTEROL-PEROXIDE	Leaf				--
1	ETHYL-LACTATE	Fruit				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	SUBAPHYLLIN	Plant				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
1	STIGMAST-5-ENE-3-BETA-7-ALPHA-DIOL	Plant				--
0	GAMMA-EUDESOL	Fruit				Wealth of India.
2	ACRYLIC-ACID	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	PROPYL-FORMATE	Fruit				--
2	METHYL-BUTYRATE	Fruit				--
0	ISOBUTYL-FORMATE	Fruit				--
3	ETHYL-ACRYLATE	Fruit		0.77		--
0	PENTANOL	Fruit				--
1	ETHYL-ISOVALERATE	Fruit		0.39		--
12	STIGMASTEROL	Fruit		0.0	-1.1725991994622522	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
22	GAMMA-AMINOBUTYRIC-ACID	Fruit		124.0	-0.7339036629968998	--
0	ACETOXYACETONE	Fruit				--
0	PROPYL-ACETATE	Fruit				--
3	ISOBUTYL-ACETATE	Fruit				--
0	GAMMA-OCTALACTONE	Fruit		0.3		--
2	ETHYL-ISOBUTYRATE	Fruit				--
0	STIGMASTANOL	Leaf				Wealth of India.
2	ASPARAGINE	Fruit		1251.0	-0.05455471931954438	--
5	STARCH	Fruit		19.0	-0.4565493616156333	--
0	N-VALERIANIC-ACID	Fruit				--

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5	CYANIN	Leaf				Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
3	ACETONE	Fruit				--
0	PROPANOL	Fruit				--
0	METHYL-BETA-HYDROXYHEXANOATE	Fruit		0.021		--
0	ISOBUTANOL	Fruit				--
28	VANILLIN	Fruit				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	GAMMA-CAPROLACTONE	Fruit		0.12		--
1	ETHYL-FORMATE	Fruit				--