

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

**Chemicals Found in Musa x paradisiaca**

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	(-)-SALSOLINOL	Fruit	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
15	5-HYDROXYTRYPTAMINE	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.
15	5-HYDROXYTRYPTAMINE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
16	ACETIC-ACID	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	ALANINE	Fruit	510	1469	-0.8797934426307861	USDA's Ag Handbook 8 and sequelae)
7	ALPHA-CAROTENE	Fruit	0.12	0.36	-0.49818171573066583	
15	ALPHA-LINOLENIC-ACID	Fruit	330	1282	-0.5718991540253398	USDA's Ag Handbook 8 and sequelae)
15	ALPHA-LINOLENIC-ACID	Plant	--	--		
32	ALPHA-TOCOPHEROL	Hull Husk	--	30		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
5	ALUMINUM	Fruit	1	35	-0.21333915200024364	ACTA AGRIC SCAND SUPPL 22: 1980
1	AMYLASE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	ARGININE	Fruit	1080	3111	-0.31975469718968097	USDA's Ag Handbook 8 and sequelae)
2	ARSENIC	Fruit	0.04	0.35	-0.08838885506053196	ACTA AGRIC SCAND SUPPL 22: 1980

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
112	ASCORBIC-ACID	Fruit	161	596	-0.24743151780698985	USDA's Ag Handbook 8 and sequelae)
112	ASCORBIC-ACID	Hull Husk	--	1380		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ASPARTIC-ACID	Fruit	1080	3110	-0.9260124834383072	USDA's Ag Handbook 8 and sequelae)
53	BETA-CAROTENE	Fruit	6	21	-0.11020800749235965	USDA's Ag Handbook 8 and sequelae)
53	BETA-CAROTENE	Hull Husk	0.6	16.6	0.29354442394364944	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
47	BETA-SITOSTEROL	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
47	BETA-SITOSTEROL	Leaf	--	--		Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. I'ORSTROM, Paris. 569 pp.
4	BIOTIN	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	BORIC-ACID	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	BORON	Fruit	2.8	8.5	-0.6327683301122562	
6	BUTYRIC-ACID	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	BUTYRIC-ACID	Plant	--	--		
3	CADMIUM	Fruit	--	0.002	-0.6377471299475531	ACTA AGRIC SCAND SUPPL 22: 1980
28	CALCIUM	Sprout Seedling	--	11600	0.6890857085449396	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Fruit	20	95	-0.8679558553498441	
28	CALCIUM	Flower	--	300	-1.5134341931691262	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
28	CALCIUM	Leaf	--	7500	-0.747311800659387	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Pith	--	100	-0.7864626628310915	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	CAMPESTEROL	Fruit	20	80	0.019982522935305048	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
3	CAPRIC-ACID	Plant	--	--		
3	CAPRIC-ACID	Fruit	10	39	-0.7310596697165437	USDA's Ag Handbook 8 and sequelae)
5	CAPRYLIC-ACID	Plant	--	--		
1	CATALASE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	CELLULOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	CHLORINE	Fruit	--	1250	0.2000805473054771	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
21	CHLOROPHYLL	Hull Husk	52	103		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	CHOLESTEROL	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.
24	CHROMIUM	Fruit	0.02	0.15	-0.48656449542659064	ACTA AGRIC SCAND SUPPL 22: 1980

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	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.
2	COBALT	Fruit	--	0.005	-0.5345099214648011	ACTA AGRIC SCAND SUPPL 22: 1980
12	COPPER	Fruit	0.76	6	-0.5307153602504487	
7	CYANIDIN	Inflorescence	--	--		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.
7	CYCLOARTENOL	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	CYCLOEUCALENOL	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	CYSTINE	Fruit	200	576	-0.47492868422969975	USDA's Ag Handbook 8 and sequelae)
9	DELPHINIDIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
9	DELPHINIDIN	Inflorescence	--	--		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	DIMETHYL-AMINE	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.
1	DOPA	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
20	DOPAMINE	Hull Husk	--	700		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
20	DOPAMINE	Fruit	--	--		
1	EMENOLONE	Plant	--	--		
2	ERUCIC-ACID	Plant	--	--		
15	FIBER	Pith	--	8000	-1	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Sprout Seedling	--	205000	1.3307439342107996	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Flower	--	19000	-1.3768579605614941	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Hull Husk	--	100000	1	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
15	FIBER	Fruit	4250	16560	-1.1806583162167987	USDA's Ag Handbook 8 and sequelae)
15	FIBER	Leaf	--	240000	0.9703106888495033	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
15	FIBER	Shoot	13210	178600	0.00480836714011626	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.
15	FOLACIN	Fruit	0.2	0.7	-0.5504340756407867	USDA's Ag Handbook 8 and sequelae)
13	FORMIC-ACID	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	FRUCTOSE	Fruit	--	35000	-0.3724202434572889	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	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
1	GALACTOSE	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.
7	GLUCOSE	Fruit	--	45000	-0.417500983291459	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	1160	3341	-0.7701729315327166	USDA's Ag Handbook 8 and sequelae)
3	GLYCERIC-ACID	Leaf	--	--		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.
12	GLYCINE	Fruit	450	1296	-0.893047785271757	USDA's Ag Handbook 8 and sequelae)
4	GLYCOLIC-ACID	Leaf	--	--		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.
18	HISTAMINE	Fruit	--	--		
7	HISTIDINE	Fruit	640	1843	0.09141919781622437	USDA's Ag Handbook 8 and sequelae)
7	INDOLE-3-ACETIC-ACID	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.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	INOSITOL	Fruit	--	340	-1	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
6	IRON	Fruit	4	17	-0.4600537646075469	
6	IRON	Flower	--	1	-1.096050995011666	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	IRON	Pith	--	11	-0.8102035482512379	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	ISOLEUCINE	Fruit	360	1037	-0.7811387840532968	USDA's Ag Handbook 8 and sequelae)
75	KAEMPFEROL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
75	KAEMPFEROL	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.
7	LAURIC-ACID	Fruit	20	78	-0.4445625588877466	USDA's Ag Handbook 8 and sequelae)
7	LAURIC-ACID	Plant	--	--		
2	LEUCINE	Fruit	590	1699	-0.723256985535825	USDA's Ag Handbook 8 and sequelae)
1	LEUCOCYANIDIN	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
2	LEUCODELPHINIDIN	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
13	LIGNIN	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
27	LINOLEIC-ACID	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
27	LINOLEIC-ACID	Fruit	560	2176	-0.32469981100559747	USDA's Ag Handbook 8 and sequelae)
15	LUTEIN	Fruit	0.033	0.1	-0.826172260047284	
4	LYSINE	Fruit	600	1728	-0.6180803627590027	USDA's Ag Handbook 8 and sequelae)
65	MAGNESIUM	Fruit	355	1118	-0.46849293958071714	
15	MALIC-ACID	Fruit	530	3730	-0.7089451738600872	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.
1	MALONIC-ACID	Leaf	--	--		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	MALTOSE	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	MALVIDIN	Inflorescence	--	--		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	MANGANESE	Fruit	0.6	1.8	-0.3916685247648986	
1	MERCURY	Fruit	0.001	0.007	-0.5062779328438466	ACTA AGRIC SCAND SUPPL 22: 1980
15	METHIONINE	Fruit	170	490	-0.5769499370844757	USDA's Ag Handbook 8 and sequelae)
1	METHYL-AMINE	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.
2	MOLYBDENUM	Fruit	--	0.1	-0.46519775248328327	ACTA AGRIC SCAND SUPPL 22: 1980
13	MUFA	Fruit	410	1593	-0.23081477776289192	USDA's Ag Handbook 8 and sequelae)



Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	MYRISTIC-ACID	Fruit	30	117	-0.2636241301884988	USDA's Ag Handbook 8 and sequelae)
6	MYRISTIC-ACID	Plant	--	--		
39	NIACIN	Hull Husk	--	50		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
39	NIACIN	Pith	--	2		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
39	NIACIN	Fruit	5	29	-0.4237487633855353	
39	NIACIN	Flower	--	6	-0.8712931513442106	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
3	NICKEL	Fruit	0.01	0.1	-0.7490491492163406	ACTA AGRIC SCAND SUPPL 22: 1980
2	NONACOSANE	Plant	--	--		Grenand, P., Moretti, C., and Jacquemin, H. 1987. Pharmacopees Traditionnelles en Guyane. L'ORSTROM, Paris. 569 pp.
18	OLEIC-ACID	Plant	--	--		
18	OLEIC-ACID	Fruit	270	1049	-0.47266016696700736	USDA's Ag Handbook 8 and sequelae)
9	OXALIC-ACID	Leaf	--	--		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	OXALIC-ACID	Fruit	22	5240	-0.01740293689701496	Watt, J.M. and Breyer-Brandwijk, M.G. 1962. The Medicinal and Poisonous Plants of Southern and Eastern Africa. E. & S. Livingstone, Ltd. Edinburg & London. 1457 pp.
13	PALMITIC-ACID	Fruit	1250	4856	-0.28993795982707443	USDA's Ag Handbook 8 and sequelae)
13	PALMITIC-ACID	Plant	--	--		
2	PALMITOLEIC-ACID	Fruit	120	466	-0.2602597774499237	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	PALMITOLEIC-ACID	Plant	--	--		
11	PANTOTHENIC-ACID	Fruit	2.5	10.1	-0.5105744994157486	USDA's Ag Handbook 8 and sequelae)
24	PECTIN	Fruit	7000	40000	-0.15534295636880713	
24	PECTIN	Hull Husk	3800	12800		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
7	PELARGONIDIN	Inflorescence	--	--		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	PEONIDIN	Inflorescence	--	--		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	PETUNIDIN	Inflorescence	--	--		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.
7	PHENYLALANINE	Fruit	380	1476	-0.6415201458057507	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORIC-ACID	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	PHOSPHORUS	Pith	--	100		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	PHOSPHORUS	Fruit	110	1127	-0.6345107936748954	
4	PHOSPHORUS	Flower	--	500	-1.3494385884884244	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
4	PHOSPHORUS	Leaf	--	2400	-0.47311414829736437	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	PHYLLOQUINONE	Fruit	--	0.001	-0.23285139490462353	
2	PHYTOSTEROLS	Plant	--	--		
2	PHYTOSTEROLS	Fruit	160	622	-0.41659810477662523	USDA's Ag Handbook 8 and sequelae)
2	PIPECOLIC-ACID	Fruit	--	--		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
14	POTASSIUM	Fruit	3700	15631	-0.20220710217397536	
4	PUFA	Fruit	890	3458	-0.5919741952789742	USDA's Ag Handbook 8 and sequelae)
1	PYRUVIC-ACID	Leaf	--	--		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.
176	QUERCETIN	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.
176	QUERCETIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
1	QUINIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
15	RIBOFLAVIN	Fruit	0.4	6	0.21217503041366062	
87	RUTIN	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	SALICYLATES	Fruit	--	--	-0.3367420403588193	
60	SELENIUM	Fruit	0.001	0.04	-0.37626818123891814	ACTA AGRIC SCAND SUPPL 22: 1980

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	SERINE	Fruit	410	1826	-0.6414950219816531	USDA's Ag Handbook 8 and sequelae)
26	SEROTONIN	Fruit	8	50	0.4683014551040585	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
26	SEROTONIN	Hull Husk	47	93		ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
26	SEROTONIN	Plant	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
14	SHIKIMIC-ACID	Leaf	--	--		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	SILICON	Fruit	70	350	0.5286974483372949	ACTA AGRIC SCAND SUPPL 22: 1980
1	SODIUM	Fruit	8	670	-0.12041543891909645	
1	SPERMIDINE	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.
5	STARCH	Fruit	7000	17500	-0.4298504597828927	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	STARCH	Stem	--	50000	-1	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
8	STEARIC-ACID	Plant	--	--		
8	STEARIC-ACID	Fruit	60	233	-0.26376934970743887	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	STIGMASTEROL	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
7	SUCCINIC-ACID	Leaf	--	--		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.
7	SUCCINIC-ACID	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SUCROSE	Fruit	500	18400	-0.6163549379514491	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
14	SULFUR	Fruit	--	100	-0.91491817172242	ANON. 1948-1976. The Wealth of India raw materials. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
6	TARTARIC-ACID	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.
31	THIAMIN	Fruit	0.3	6.9	0.20062145480143725	
4	THREONINE	Fruit	340	1321	-0.7053040118582944	USDA's Ag Handbook 8 and sequelae)
93	TOCOPHEROL	Fruit	2	11	-0.6391754761240738	USDA's Ag Handbook 8 and sequelae)
29	TRYPTOPHAN	Fruit	120	466	-0.5395507034941179	USDA's Ag Handbook 8 and sequelae)
8	TYROSINE	Fruit	240	932	-0.6160602189889636	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Fruit	460	1826	-0.5420226330945653	USDA's Ag Handbook 8 and sequelae)
24	VANILLIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	XYLOSE	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.
77	ZINC	Fruit	1	6.5	-0.7160904438430368	USDA's Ag Handbook 8 and sequelae)