

P Curcuma longa

Common Name(s)

Indian Saffron, Turmeric

How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	(+)-(S)-AR-TURMERONE	Rhizome	--	--		
0	(+)-ALPHA-PHELLANDRENE	Rhizome	--	--		
		Essent.				
		Oil				
0	(+)-ALPHA-PHELLANDRENE	Root	--	--		
		Essent.				
		Oil				
0	(+)-ALPHA-PHELLANDRENE	Root	--	--		
0	(+)-AR-TURMERONE	Rhizome	--	--		
0	(+)-SABINENE	Rhizome	--	--		
		Essent.				
		Oil				
0	(+)-SABINENE	Root	--	--		
0	1,5-BIS-(4-HYDROXY-3-METHOXY-PHENYL)-PENTA-TRANS-1-TRANS-4-DIEN-3-ONE	Rhizome	--	27		
2	1,5-BIS-(4-HYDROXY-3-METHOXYPHENYL)-1,4-PENTADIEN-3-ONE	Rhizome	--	--		
2	1,7-BIS-(4-HYDROXY-3-METHOXYPHENYL)-1,4,6-HEPTATRIEN-3-ONE	Rhizome	--	--		
0	1,7-BIS-(4-HYDROXY-PHENYL)-HEPTA-1,4,6-TRIENE-3-ONE	Rhizome	--	3		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	1,7-BIS-(4-HYDROXYPHENYL)-1-HEPTENE-3,5-DIONE	Rhizome	--	--	
67	1,8-CINEOLE	Leaf	--	330	-0.4877780232076323
67	1,8-CINEOLE	Root	--	--	
67	1,8-CINEOLE	Rhizome	30	9575	0.3047864660484435
0	1-(4-HYDROXY-3-METHOXY-PHENYL)-5-(4-HYDROXY-PHENYL)-PENTA-TRANS-1-TRANS-4-DIEN-3-ONE	Rhizome	--	13	
0	1-(4-HYDROXY-3-METHOXY-PHENYL)-7-(3,4-DIHYDROXY-PHENYL)-HEPTA-1,6-DIENE-3,5-DIONE	Rhizome	--	4	
2	1-HYDROXY-1,7-BIS-(4-HYDROXY-3-METHOXYPHENYL)-6-HEPTENE-3,5-DIONE	Plant	--	--	
0	2,5-DIHYDROXY-BISABOLA-3,10-DIENE	Rhizome	--	3	
0	2-BORNANOL	Plant	--	--	J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
2	2-HYDROXY-METHYL-ANTHRAQUINONE	Rhizome	--	--	
2	4''-(3''-METHOXY-4''-HYDROXYPHENYL)-2''-OXO-3''-ENEBUTANYL-3-(3'-METHOXY-4'-HYDROXYPHENYL)-PROPENOATE	Rhizome	--	--	
0	4(S)-5(S)-EPOXY-GERMACRONE	Rhizome	--	--	
0	4-HYDROXY-BISABOLA-2,10-DIEN-9-ONE	Rhizome	--	5.1	
0	4-HYDROXY-CINNAMOYL-(FERULOYL)-METHANE	Rhizome	--	180	
0	4-HYDROXY-CINNAMOYL-METHANE	Rhizome	--	--	
0	4-HYDROXY-FERULOXYL-METHANE	Rhizome	--	--	
0	5'-METHOXY-CURCUMIN	Rhizome	--	20	
0	5-HYDROXY-4-METHOXY-BISABOLA-2,10-DIEN-9-ONE	Rhizome	--	0.3	
0	5-HYDROXY-PROCURCUMENOL	Rhizome	--	0.6	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-ATLANTONE	Rhizome	--	--	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	ALPHA-ATLANTONE	Root	--	--	
3	ALPHA-CURCUMENE	Rhizome	--	--	
11	ALPHA-PHELLANDRENE	Leaf	--	2325	1.3345170744070258
11	ALPHA-PHELLANDRENE	Rhizome	--	1945	1
28	ALPHA-PINENE	Rhizome	--	--	
28	ALPHA-PINENE	Rhizome	--	5300	-0.9114147781537915
28	ALPHA-PINENE	Essential Oil	--	5300	-0.5134325695945586
28	ALPHA-PINENE	Leaf	60	1440	-0.1310531749310525
28	ALPHA-PINENE	Tuber	--	--	
13	ALPHA-TERPINENE	Leaf	--	37	-0.2932431476626101
13	ALPHA-TERPINENE	Rhizome	--	23	-1
23	ALPHA-TERPINEOL	Rhizome	--	--	
32	ALPHA-TOCOPHEROL	Root	11	18	-0.09053574604251821
0	ALPHA-TURMERONE	Rhizome	--	3.7	
13	AR-TURMERONE	Rhizome	183800	596870	
13	AR-TURMERONE	Essent. Oil			
13	AR-TURMERONE	Rhizome	740	5800	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
13	AR-TURMERONE	Root	--	--		
0	ARABINOSE	Rhizome	--	10000		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
112	ASCORBIC-ACID	Plant	--	--		
112	ASCORBIC-ACID	Rhizome	--	293	-0.34465428565155654	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ASH	Plant	9920	32000	-1.6080997471982341	
0	ASH	Rhizome	9000	148000	0.8154551817141439	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
10	AZULENE	Rhizome	--	--		
6	BETA-BISABOLENE	Rhizome	--	--		
53	BETA-CAROTENE	Rhizome	--	--	-0.746733045887731	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
53	BETA-CAROTENE	Plant	6	18	-0.6296931924279244	
13	BETA-PINENE	Tuber	--	--		
13	BETA-PINENE	Rhizome	--	2700	-0.04995838534443404	
13	BETA-PINENE	Essent. Oil				
13	BETA-PINENE	Rhizome	--	--		
13	BETA-PINENE	Essential Oil	--	2700	-0.670434055955317	
13	BETA-PINENE	Leaf	--	215	-0.11200647112758456	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
5	BETA-SESQUIPELLANDRENE	Rhizome	--	--	
47	BETA-SITOSTEROL	Rhizome	--	--	
47	BETA-SITOSTEROL	Root	--	510	-0.26351706526294477 Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
5	BETA-TURMERONE	Rhizome	--	--	
1	BIS-(4-HYDROXY-CINNAMOYL)-METHANE	Rhizome	--	--	
1	BIS-(4-HYDROXY-CINNAMOYL)-METHANE	Plant	--	--	
0	BIS-(P-HYDROXY-CINNAMOYL)-METHANE	Rhizome	--	1360	
0	BIS-(PARA-HYDROXY-CINNAMOYL)-METHANE	Rhizome	--	1360	
16	BIS-DEMETHOXYCURCUMIN	Rhizome	6.6	16200	
16	BIS-DEMETHOXYCURCUMIN	Plant	--	--	
16	BIS-DEMETHOXYCURCUMIN	Root	--	400	
5	BIS-DESMETHOXYCURCUMIN	Rhizome	67	28000	1
0	BISABOLA-3,10-DIEN-2-ONE	Rhizome	--	13.5	
0	BISABOLENE	Root	--	--	
0	BISACUMOL	Rhizome	--	2	
0	BISACURONE	Rhizome	--	9	
35	BORNEOL	Rhizome	--	--	
35	BORNEOL	Rhizome	--	--	
35	BORNEOL	Essent. Oil	--	--	
35	BORNEOL	Root	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
4	BORON	Root	1	6	-0.667360795790836	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).
102	CAFFEIC-ACID	Rhizome	--	5		
28	CALCIUM	Rhizome	270	2898	-0.8768568252409509	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
28	CALCIUM	Plant	226	730	-1.3755257581090707	
3	CALEBIN-A	Rhizome	--	--		
2	CAMPESTEROL	Rhizome	--	--		
2	CAMPESTEROL	Root	--	90	-0.45238102172974776	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
9	CAMPHENE	Rhizome	--	--		
9	CAMPHENE	Tuber	--	--		
41	CAMPHOR	Tuber	--	--		
41	CAMPHOR	Rhizome	--	600	-1	Essent. Oil
5	CAPRYLIC-ACID	Rhizome	--	--		
0	CAR-3-ENE	Leaf	29	41		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	CARBOHYDRATES	Rhizome	79000	829000	0.7177691089649727	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
31	CARYOPHYLLENE	Essential Oil	--	13400	-0.5168789270461833	
31	CARYOPHYLLENE	Tuber	--	--		
31	CARYOPHYLLENE	Rhizome	--	--		
1	CHOLESTEROL	Rhizome	--	--		
24	CHROMIUM	Plant	0.2	0.6	-0.8071397754932234	
24	CHROMIUM	Rhizome	--	6	-1	
0	CINEOL	Rhizome	--	29200		
		Essent. Oil				
0	CINEOL	Tuber	--	--		
0	CINEOL	Rhizome	--	--		
0	CINEOLE	Essential Oil	--	29200		
18	CINNAMIC-ACID	Rhizome	--	--		
2	COBALT	Plant	0.5	1.5	-0.42841157368319116	
2	COBALT	Rhizome	--	1	-1	
12	COPPER	Rhizome	6	17	1.4469860213540642	
0	CUMINYL-ALCOHOL	Rhizome	--	--		
0	CURCUMENE	Rhizome	--	121700		
		Essent. Oil				
0	CURCUMENE	Tuber	--	--		
0	CURCUMENE	Rhizome	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	CURCUMENE	Essential Oil	--	121700	
3	CURCUMENOL	Essential Oil	--	21300	
3	CURCUMENOL	Rhizome	--	65	
3	CURCUMENOL	Rhizome	Essent. Oil	21300	
0	CURCUMENONE	Rhizome	--	26	
135	CURCUMIN	Rhizome	9	56000	1.3976645180230614
135	CURCUMIN	Root	--	800	
135	CURCUMIN	Plant	--	--	
135	CURCUMIN	Resin, Exudate, Sap	--	175000	
9	CURCUMINOIDS	Root	30000	80000	
3	CURCUMOL	Rhizome	--	--	
6	CURDIONE	Essential Oil	--	11900	
6	CURDIONE	Tuber	--	--	
6	CURDIONE	Rhizome	Essent. Oil	11900	
6	CURDIONE	Rhizome	--	--	
0	CURLONE	Rhizome	--	120	
0	CURZERENONE	Tuber	--	--	
0	CURZERENONE	Rhizome	--	--	
0	CURZERENONE-C	Rhizome	Essent. Oil	20400	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	CURZERENONE-C	Essential -- Oil		20400	
0	CYCLO-ISOPRENYMYRCENE	Rhizome	8500	29750	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	CYCLOCURCUMIN	Rhizome	13.3	8000	
0	D-ALPHA-PHELLANDRENE	Rhizome	30	720	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	D-CAMPHENE	Rhizome --		480	-1
0	D-CAMPHOR	Rhizome	30	1500	-0.29880116775229165 List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	D-SABINENE	Rhizome	20	432	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
8	DEHYDROCURDIONE	Rhizome --		4.5	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	DEHYDROTURMERONE	Rhizome	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
20	DEMETHOXYCURCUMIN	Plant	--	--	
20	DEMETHOXYCURCUMIN	Root	--	500	
20	DEMETHOXYCURCUMIN	Rhizome	6.6	11100	
0	DESMETHOXYCURCUMIN	Rhizome	500	28000	1.3363062095621216
2	DI-P-COUMAROYL-METHANE	Rhizome	--	--	
1	DICINNAMOYLMETHANE	Rhizome	--	--	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	DIDESMETHOXYCURCUMIN	Rhizome	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
1	DIFERULOYL-METHANE	Rhizome	--	--	
0	DIHYDROCURCUMIN	Rhizome	--	57	
0	EO	Rhizome	3000	72000	0.38278614749621226
0	EO	Plant	15500	80000	5.339729553841824
0	EO	Leaf	--	4100	-0.6539838935784101
2	EPI-PROCURCUMENOL	Rhizome	--	1.3	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
76	EUGENOL	Essential Oil	--	2100	-0.7050089035376114	
76	EUGENOL	Tuber	--	--		
76	EUGENOL	Rhizome	--	2100		
0	FAT	Rhizome	18000	153000	2.4259276123914604	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FAT	Plant	28830	93000	0.6021091742130502	
1	FERULOYL-4-HYDROXYCINNAMOYL-METHANE	Plant	--	--		
1	FERULOYL-P-COUMAROYL-METHANE	Rhizome	--	--		
15	FIBER	Rhizome	9000	84000	-1.0343269648768965	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FIBER(CRUDE)	Plant	--	63000	-0.7596673986017957	
0	FIBER(DIETARY)	Plant	--	370000	0.06486249593456934	
0	FLAVONOIDS	Rhizome	90	95		
8	FRUCTOSE	Rhizome	--	120000	1.413312598024455	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	GAMMA-ATLANTONE	Rhizome	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	GAMMA-ATLANTONE	Root	--	--	
11	GAMMA-TERPINENE	Rhizome	--	60	-1
11	GAMMA-TERPINENE	Leaf	--	90	-0.19839281229128486
0	GERMACRENE	Rhizome	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
0	GERMACRON-(4S',5S)-EPOXIDE	Rhizome	--	0.7	
0	GERMACRON-13-AL	Rhizome	--	0.6	
7	GERMACRONE	Rhizome	--	--	
7	GLUCOSE	Rhizome	--	280000	1 Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
18	GUAIACOL	Rhizome	--	--	
0	GUAIANE	Rhizome	--	--	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
6	IRON	Plant	25	80	-0.6440919715501999
6	IRON	Rhizome	121	467	0.32660224579628255
7	ISOBORNEOL	Rhizome	--	200	
		Essent. Oil			
7	ISOBORNEOL	Tuber	--	--	
0	ISOPROCURCUMENOL	Rhizome	--	1.6	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	L-ALPHA-CURCUMENE	Rhizome	--	18000	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
0	L-BETA-CURCUMENE	Rhizome	--	18000	
60	LIMONENE	Tuber	--	--	
60	LIMONENE	Rhizome	--	80	-1.049460471807569
60	LIMONENE	Leaf	--	125	-0.31628413309781417
60	LIMONENE	Essential Oil	--	2300	-0.7238268976657102
60	LIMONENE	Rhizome	--	2300	-0.7761485185603905
		Essent. Oil			
0	LINALOL	Essential Oil	--	1600	1
53	LINALOOL	Rhizome	--	--	
53	LINALOOL	Rhizome	--	1600	-1
		Essent. Oil			
53	LINALOOL	Tuber	--	--	
65	MAGNESIUM	Plant	3038	9800	1.779937751704662
14	MANGANESE	Plant	2.5	8.2	-0.6361340105099139
14	MANGANESE	Rhizome	33	78	-0.31727458910943884
0	MONODEMETHOXYCURCUMIN	Rhizome	--	--	
0	MONODEMETHOXYCURCUMIN	Root	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	MONODESMETHOXYCURCUMIN	Rhizome	--	--	Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
39	NIACIN	Rhizome	5	62	-1.1295129485847604 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
39	NIACIN	Plant	22	70	-0.09411242290768869
3	NICKEL	Rhizome	--	3.8	-1
4	O-COUMARIC-ACID	Leaf	--	--	
25	P-COUMARIC-ACID	Rhizome	--	345	1
1	P-COUMAROYL-FERULOYL-METHANE	Rhizome	--	--	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
16	P-CYMENE	Leaf	--	310	-0.1425664765796497
16	P-CYMENE	Rhizome	210	5184	1.9997542158504666
5	P-METHOXY-CINNAMIC-ACID	Rhizome	--	360	
1	P-TOLYL-METHYLCARBINOL	Rhizome	500	1750	
1	P-TOLYMETHYLCARBINOL	Rhizome	500	1750	
4	PHOSPHORUS	Rhizome	640	6307	1.0401873086070448 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	PHOSPHORUS	Plant	725	2340	-0.6000258604656092

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
2	PHYTOSTEROLS	Root	--	820	-0.21102387892333058	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
14	POTASSIUM	Plant	5239	16900	-0.3415285138089129	
14	POTASSIUM	Rhizome	4870	41271	3.143110666596612	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	PROCURCUMENOL	Rhizome	--	0.1		
0	PROTEIN	Plant	31000	100000	-0.6020445420166102	
0	PROTEIN	Rhizome	12000	306000	2.0009280065663138	
43	PROTOCATECHUIC-ACID	Leaf	--	--		
176	QUERCETIN	Rhizome	90	95	-1	
0	RESIN	Rhizome	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
15	RIBOFLAVIN	Plant	--	--		
15	RIBOFLAVIN	Rhizome	--	12	1.6190517856385973	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
7	SALICYLATES	Root	--	765	1.8939419576365641	
0	SATURATED-FATTY-ACIDS	Rhizome	--	--		
60	SELENIUM	Plant	0.5	1.6	-0.35611748372726487	
4	SILICON	Plant	6	20	-0.425552572565658	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
1	SODIUM	Rhizome	30	4290	4.312813192901911	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
1	SODIUM	Plant	462	1490	-0.22159718118474486	
1	SODIUM-CURCUMATE	Plant	--	--		
5	STARCH	Rhizome	300000	550000	0.7343043341593242	
12	STIGMASTEROL	Root	--	220	0.43921373955665255	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
12	STIGMASTEROL	Rhizome	--	--		
0	SUGARS	Plant	108500	400000	2.5556146442635606	
6	SYRINGIC-ACID	Leaf	--	--		
0	TERPINENE	Essential Oil	--	27200		
0	TERPINENE	Tuber	--	--		
0	TERPINENE	Rhizome	--	--		
0	TERPINENE	Rhizome	--	27200		
0	TERPINENE	Essent. Oil	--			
18	TERPINEOL	Essential Oil	--	500	-1	
18	TERPINEOL	Rhizome	--	500		
18	TERPINEOL	Essent. Oil	--			
9	TERPINOLENE	Leaf	115	485	0.3857342005583795	
4	TETRAHYDROCURCUMIN	Plant	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
31	THIAMIN	Rhizome	--	8	0.17349447958987207 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	THIAMINE	Plant	--	--	
0	TOLYL-METHYLCARBINOL	Rhizome	--	--	
1	TRIETHYLCURCUMIN	Plant	--	--	
3	TURMERIN	Rhizome	--	1000	
4	TURMERONE	Rhizome	1800	43200	
4	TURMERONE	Root	--	--	
4	TURMERONE	Rhizome	--	240700	
		Essent. Oil			
1	TURMERONOL-A	Rhizome	--	282	
1	TURMERONOL-B	Rhizome	--	193	
3	UKONAN-A	Rhizome	33	6600	
2	UKONAN-B	Rhizome	--	47	
0	UKONAN-C	Rhizome	52	315	
0	UKONAN-D	Rhizome	--	41	
0	UNSATURATED-FATTY-ACIDS	Rhizome	--	--	
24	VANILLIC-ACID	Leaf	--	--	
0	WATER	Plant	--	690000	-0.346469410041001
0	WATER	Rhizome	--	133000	-1.1144884211539199 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	ZEDOARONDIOL	Rhizome	--	35	
77	ZINC	Plant	0.5	1.5	-0.49949550935262865

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
77	ZINC		Rhizome --	22	-0.3731629077654671
6	ZINGIBERENE		Rhizome 750	18000	1
6	ZINGIBERENE		Rhizome -- Essent. Oil	81400	
6	ZINGIBERENE		Root --	--	