

**Dr. Duke's Phytochemical and Ethnobotanical Databases**  
**Chemicals found in Manihot esculenta**

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
112	ASCORBIC-ACID	Root	97.0	1530.0	0.2286424828192489	--
112	ASCORBIC-ACID	Leaf	800.0	10000.0	0.4839524769176653	--
77	ZINC	Root	4.0	19.0	-0.2267899421959609	--
65	MAGNESIUM	Root	290.0	2100.0	-0.2455907206102601	--
53	BETA-CAROTENE	Root	14.0	150.0	0.5227136521125912	--
39	NIACIN	Root	6.0	44.0	-0.1808173181586928	--
39	NIACIN	Leaf	15.0	75.0	-0.273690115307964	--
31	THIAMIN	Leaf	2.0	10.0	0.35331539437656273	--
31	THIAMIN	Root	0.3	7.1	0.03785430585855091	--
29	TRYPTOPHAN	Root	430.0	1365.0	1.6996132060019429	--
28	CALCIUM	Root	190.0	2890.0	-0.49423350535995814	--
28	CALCIUM	Leaf	1450.0	10000.0	-0.576492687191145	--
27	LINOLEIC-ACID	Root	440.0	1400.0	-0.6415606441880831	--
18	OLEIC-ACID	Root	1040.0	3300.0	0.42829452335384083	--
15	FIBER	Root	21000.0	88600.0	0.01083972503277636	--
15	METHIONINE	Root	260.0	825.0	-0.4393546255789883	--
15	RIBOFLAVIN	Root	0.2	3.2	-0.19138745982624014	--
15	RIBOFLAVIN	Leaf	3.0	15.0	-0.10754923896805615	--
14	SULFUR	Root	54.0	250.0	-0.730205109371953	--
14	POTASSIUM	Root	2380.0	24260.0	0.6210237957656103	--
14	MANGANESE	Root	0.5	2.5	-0.516021041577246	--
14	ARGININE	Root	3140.0	9970.0	-0.039929332530262124	--
13	MUFA	Root	1040.0	3300.0	0.4047733350552872	--
13	PALMITIC-ACID	Root	950.0	3015.0	-0.2580444031758306	--
12	COPPER	Root	1.0	3.8	-0.876845633699047	--
12	GLYCINE	Root	640.0	2030.0	-0.5702509021896668	--
9	HCN	Leaf	180.0	1800.0	0.04552395621093529	--

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9	OXALIC-ACID	Root		171.0	-0.5520600286774848	--
8	GLUTAMIC-ACID	Root	4700.0	14925.0	-0.025260818108292494	--
8	STEARIC-ACID	Root	70.0	220.0	-0.3566048284620661	--
8	TYROSINE	Root	400.0	1270.0	-1.1948622333275358	--
7	LAURIC-ACID	Root	10.0	32.0	-0.746655329791214	--
7	PHENYLALANINE	Root	600.0	1900.0	-0.8922442110821145	--
7	HISTIDINE	Root	450.0	1430.0	-0.3526328692766417	--
6	IRON	Root	2.0	114.0	-0.27603508954229083	--
6	IRON	Leaf	28.0	1500.0	2.8815281453439296	--
5	STARCH	Root	280000.0	828400.0	2.144576034243884	--
5	ALUMINUM	Root	10.0	77.0	-0.2711653323015013	--
4	PUFA	Root	670.0	2130.0	-1.224506156372141	--
4	BORON	Root	0.6	7.5	-0.6119014498802402	--
4	PHOSPHORUS	Root	310.0	2225.0	-0.2271469601655788	--
4	PHOSPHORUS	Leaf	560.0	2800.0	-0.39951935749949974	--
4	THREONINE	Root	650.0	2065.0	-0.4924296880050165	--
4	LYSINE	Root	1000.0	3175.0	-0.515923339849437	--
4	CALCIUM-OXALATE	Root	170.0	505.0	-0.6074533882416105	--
3	ALANINE	Root	870.0	2765.0	-0.333263558146691	--
3	ASPARTIC-ACID	Root	1810.0	5750.0	-0.5470152033140955	--
3	ISOLEUCINE	Root	610.0	1935.0	-0.7997657659921524	--
3	VALINE	Root	790.0	2510.0	-0.9088128635893644	--
2	LEUCINE	Root	900.0	2860.0	-0.8665636148505976	--
2	CYSTINE	Root	650.0	2065.0	2.5756054651495246	--
1	SODIUM	Root	62.0	2655.0	0.7234353373918977	--
1	SERINE	Root	760.0	2415.0	-0.5336360813914572	--
0	OXALATE	Root	150.0	1420.0	-0.6306015744916453	--

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0	PROTEIN	Root	4000.0	98445.0	-0.22423287313180296	--
0	SUGARS	Root	3400.0	33730.0	-0.6790140180375616	--
0	PROTEIN	Leaf	51000.0	300000.0	0.8794308099833033	--
0	FAT	Root	1000.0	12.385	-0.7625966551092769	--
0	KILOCALORIES	Root	1200.0	3810.0	0.9766427570591809	--
0	SUCCINATES	Root	3430.0	10150.0	-1.412660361788605	--
0	PROLINE	Root	760.0	2415.0	0.309812181608715	--
0	FAT	Leaf	2000.0	20000.0	-0.7265727366280398	--
0	WATER	Root	607000.0	694250.0	-0.49086114543236276	--
0	KILOCALORIES	Leaf	498.0	3957.0	1.513453391029264	--
0	DEHYDROASCORBIC-ACID	Root	52.0	154.0	-1.0	--
0	WATER	Leaf	748000.0	810000.0	0.011785571821618442	--
0	ASH	Root	5000.0	34300.0	-0.9497210119001364	--
0	ASH	Leaf	27000.0	135000.0	0.28451335689728435	--
0	MALATES	Root	2060.0	6095.0	-0.7780632566451284	--
0	SFA	Root	1030.0	3270.0	0.12327785760469526	--
0	CITRATES	Root	2580.0	11480.0	0.8500379503885052	--
0	CARBOHYDRATES	Root	269200.0	854875.0	0.31876764319711054	--
0	LINOLENIC-ACID	Root	230.0	730.0	-0.8450253695872787	--