

# **P** **Lycopersicon esculentum**

## Common Name(s)

Tomato

## How Used

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Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	1',2'-EPOXY-1',2'-DIHYDRO-BETA-EPSILON-PSEUDOCAROTENE	Fruit	--	--		
0	1',2'-EPOXY-1',2'-DIHYDRO-BETA-PSI-CAROTENE	Fruit	--	--		
0	1,2-EPOXY-1,2-DIHYDRO-PSI,PSI-CAROTENE	Fruit	--	--		
0	1-BUTYL-2-THIAZOL	Fruit	--	--		
0	1-O-FERULOYL-BETA-D-GLUCOSE	Fruit	--	--		
0	1-O-P-COUMAROYL-BETA-D-GLUCOSE	Fruit	--	--		
0	10,16-DIHYDROXY-DECANOIC-ACID	Fruit	--	--		
0	10,16-DIHYDROXY-HEXADECANOIC-ACID	Fruit	--	--		
0	16-HYDROXY-HEXADECANOIC-ACID	Fruit	--	--		
0	2,7-DIMETHYL-OCT-4-ENEDIOIC-ACID	Shoot	1.2	1.2		
0	2,7-DIMETHYL-OCTA-2,4-DIENOIC-ACID	Shoot	1.8	1.8		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference	Citation
0	2-BUTANONE	Fruit	--	--		
0	2-PENTANONE	Fruit	--	--		
0	2-PROPANONE	Fruit	--	--		
0	24-(R)-ETHYL-LOPHENOL	Seed	--	--		
0	24-METHYL-31-NOR-LANOST-9(11)-EN-3-BETA-OL	Seed	--	--		
0	24-METHYL-LOPHENOL	Seed	--	--		
0	24-METHYLENE-CYCLOARTANAL	Seed	--	--		
0	24-METHYLENE-CYCLOARTENAL	Plant	--	--		
0	3-BETA-HYDROXY-5-ALPHA-PREG-16-EN-20-ONE	Shoot	--	--		
0	3-O-FERULOYL-QUINIC-ACID	Leaf	--	--		
0	31-NOR-LANOST-8-EN-3-BETA-OL	Seed	--	--		
0	31-NOR-LANOST-9(11)-EN-3-BETA-OL	Seed	--	--		
0	31-NORCYCLOARTENAL	Seed	--	--		
0	4-ALPHA-24-DIMETHYL-CHOLESTA-7,24-DIEN-3-BETA-OL	Seed	--	--		
0	4-ALPHA-METHYL-24-ETHYL-CHOLESTA-7,24-DIEN-3-BETA-OL	Seed	--	--		
4	4-VINYL-GUAIACOL	Leaf	--	--		
4	4-VINYL-GUAIACOL	Seed	--	--		
0	5,6-EPOXY-5,6-DIHYDRO-PSEUDO-PSEUDOCAROTENE	Fruit	--	--		
15	5-HYDROXYTRYPTAMINE	Fruit	--	--		

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	5ALPHA-FUROSTANE-3BETA,22,26TRIOL-3-O-BETA-D-GLUCOPYRANOSYL...	Plant	--	--	
0	9,10,16-TRIHIDROXYHEXADECANOIC-ACID	Fruit	--	--	
0	9,10,18-TRIHIDROXY-OCTADECANOIC-ACID	Fruit	--	--	
0	ABSCISIC-ACID	Leaf	--	--	
0	ABSCISIC-ACID-1',4'-TRANS-DIOL	Fruit	--	--	
0	ABSCISIC-ACID-1',4'-TRANS-DIOL	Leaf	--	--	
0	ABSCISIC-ACID-1'O-BETA-D-GLUCOPYRANOSIDE	Stem	--	--	
6	ACETALDEHYDE	Fruit	--	--	
16	ACETIC-ACID	Fruit	--	--	
3	ACETONE	Fruit	--	--	
28	ADENOSINE	Flower	--	--	
3	ALANINE	Fruit	30	4132	0.16684043618350175
10	ALPHA-AMYRIN	Fruit	--	--	
0	ALPHA-CAPROLACTONE	Fruit	--	--	
0	ALPHA-IONENE	Fruit	--	--	
0	ALPHA-KETO-GLUTARIC-ACID	Fruit	--	--	
15	ALPHA-LINOLENIC-ACID	Fruit	30	496	-0.9278481523791202
0	ALPHA-NONALACTONE	Fruit	--	--	
0	ALPHA-OCTALACTONE	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-OXOGLUTARIC-ACID	Fruit	--	--	
28	ALPHA-PINENE	Fruit	--	--	
32	ALPHA-TOCOPHEROL	Fruit	7	143	1.0794849431920743
5	ALUMINUM	Fruit	0.3	1700	0.2710454015000243
0	ARABIC-ACID	Fruit	--	--	
14	ARGININE	Fruit	1	3637	-0.1794507969292052
2	ARSENIC	Fruit	0.003	0.043	-0.4818181208539938
112	ASCORBIC-ACID	Fruit	50	2952	-0.10094252293657557
0	ASH	Fruit	5700	105461	1.2636214779492727
2	ASPARAGINE	Fruit	300	300	-0.7333785819554481
3	ASPARTIC-ACID	Fruit	1230	20332	1.3365457848440367
0	AUROXANTHIN	Fruit	--	--	
0	BARIUM	Fruit	--	60	1.7791776045592602
24	BENZALDEHYDE	Fruit	--	--	
9	BENZYL-ALCOHOL	Fruit	--	--	
2	BETA-ALANINE	Fruit	6	6	
9	BETA-AMYRIN	Fruit	--	--	
53	BETA-CAROTENE	Fruit	7	113	0.0676263349229542
0	BETA-D-GLUCOPYRANOSYL-PHASEIC-ACID	Plant	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	BETA-IONENE	Fruit	--	--	
47	BETA-SITOSTEROL	Fruit	--	--	
14	BETAINE	Root	23	23	-0.3665186816680227
14	BETAINE	Shoot	69	69	-0.462299088318912
4	BIOTIN	Fruit	--	--	
4	BORON	Fruit	--	96	1.1289380646493836
0	BUTANOL-2-ON-3	Fruit	--	--	
0	BUTANOLS	Fruit	--	--	
0	BUTYROLACTONE	Fruit	--	--	
3	CADMIUM	Fruit	0.005	1.7	4.352550688720398
102	CAFFEIC-ACID	Fruit	6	6	-0.33780275264769194
0	CAFFEIC-ACID-4-O-BETA-D-GLUCOSIDE	Fruit	--	--	
28	CALCIUM	Fruit	60	2400	-0.3360531950126499
28	CALCIUM	Leaf	60800	60800	2.894551698483533
2	CAMPESTEROL	Fruit	--	--	
5	CAPRYLIC-ACID	Fruit	--	--	
0	CARBOHYDRATES	Fruit	43400	717400	-0.3501641824823012
0	CARBOXYLIC-ACID	Leaf	--	--	
0	CELLULASE	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	CELLULOSE	Fruit	--	--	
0	CERIUM	Fruit	7	60	
7	CHLORINE	Fruit	510	510	-0.3346338596732354
77	CHLOROGENIC-ACID	Fruit	18	18	-1.090975910295016
21	CHLOROPHYLL	Fruit	3	30	-0.7928072718421142
0	CHLOROPHYLL-A	Fruit	--	--	
0	CHLOROPHYLL-B	Fruit	--	--	
20	CHOLINE	Root	36	36	-0.4093082994350739
20	CHOLINE	Shoot	48	48	-0.7037260640737851
24	CHROMIUM	Fruit	--	3	-0.08625884480319124
60	CINNAMALDEHYDE	Fruit	--	--	
0	CIS-3-HEXENOL-1	Fruit	4	40	
0	CIS-5'-BETA-PSEUDOCAROTENE	Fruit	--	--	
0	CIS-5'-EPSILON-PSEUDOCAROTENE	Fruit	--	--	
0	CIS-5'-NEUROSPORENE	Fruit	--	--	
0	CIS-5,CIS-5'-LYCOPENE	Fruit	1	20	
0	CIS-5-LYCOPENE	Fruit	1	20	
0	CIS-HEXEN-3-AL	Fruit	--	--	
53	CITRAL	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	Fruit	--	--	
1	CITROSTADIENOL	Seed	--	--	
2	COBALT	Fruit	--	1.4	-0.36563225462787763
12	COPPER	Fruit	0.4	100	6.785252397648407
0	CUTIN	Fruit	--	--	
0	CYCLOARTANOL	Seed	--	--	
7	CYCLOARTENOL	Seed	--	--	
3	CYCLOEUCALENOL	Seed	--	--	
0	CYCLOHEXANOL	Fruit	--	--	
2	CYSTINE	Fruit	120	1984	0.9938328503061883
0	DAMASCENONE	Fruit	--	--	
0	DECADIEN-TRANS-2,TRANS-4-AL	Fruit	--	--	
2	DIACETYL	Fruit	--	--	
0	DIHYDROXYTARTARIC-ACID	Fruit	--	--	
1	DIHYDROZEATIN	Flower	--	--	
0	EPOXY-5,6-IONENE	Fruit	--	--	
0	EPOXY-LUTEIN	Fruit	--	--	
24	ETHANOL	Fruit	--	--	
0	ETHYL-PHENOL	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
1	ETHYLENE	Fruit	--	--	
76	EUGENOL	Fruit	--	--	
13	FALCARINDIOL	Seed	--	--	
16	FALCARINOL	Seed	--	--	
2	FARNESAL	Fruit	--	--	
0	FARNESYL-ACETONE	Fruit	--	--	
0	FAT	Fruit	1330	47441	-0.27890154780629756
0	FAT	Seed	150000	250000	-0.08105194719463996
61	FERULIC-ACID	Fruit	--	--	
0	FERULIC-ACID-O-BETA-D-GLUCOSIDE	Fruit	--	--	
15	FIBER	Fruit	4700	77691	-0.6037968147292118
0	FLUORINE	Fruit	0.02	1.7	0.3425843281954779
15	FOLACIN	Fruit	--	2	-0.019192793995839758
13	FORMIC-ACID	Fruit	--	--	
8	FRUCTOSE	Fruit	11700	11700	-0.753158464748984
7	FUMARIC-ACID	Fruit	--	--	
6	FURFURAL	Fruit	--	--	
22	GABA	Fruit	220	480	-0.5811047507123629
2	GAMMA-CAROTENE	Fruit	--	--	



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
8	GENTISIC-ACID	Leaf	--	--	
2	GERANYL-ACETONE	Fruit	--	--	
0	GIBBERELLINS	Fruit	--	--	
7	GLUCOSE	Fruit	16300	16300	-0.7221100985577108
8	GLUTAMIC-ACID	Fruit	90	54053	3.1763013494537677
3	GLYCERIC-ACID	Fruit	--	--	
12	GLYCINE	Fruit	23	3637	0.012539998861881632
4	GLYCOLIC-ACID	Fruit	--	--	
0	GLYOXAL	Fruit	--	--	
0	GRAMISTEROL	Seed	--	--	
18	GUAIACOL	Fruit	--	--	
0	HEMICELLULOSE	Fruit	--	--	
0	HEPTADIEN-TRANS-2,CIS-4-AL	Fruit	--	--	
0	HEPTADIEN-TRANS-2,TRANS-4-AL	Fruit	--	--	
0	HEPTULOSE	Fruit	--	--	
0	HEXADIEN-TRANS-2-,TRANS-4-AL	Fruit	--	--	
0	HEXANOLS	Fruit	--	--	
7	HISTIDINE	Fruit	30	2149	0.30596189437483906
0	HYDROCINNAMALDEHYDE	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	I-VALERALDEHYDE	Fruit	--	--	
0	I-VALERIC-ACID	Fruit	--	--	
7	INDOLE-3-ACETIC-ACID	Root	--	--	
12	IODINE	Fruit	--	--	
6	IRON	Fruit	1	800	2.6458962013920013
0	ISOAMYLOL	Fruit	7	40	
3	ISOLEUCINE	Fruit	210	3471	-0.05009901385256443
0	ISOPENTENYL-ADENINE	Root	--	--	
0	ISOPENTENYL-ADENOSINE	Root	--	--	
1	ISOVALERALDEHYDE	Fruit	0.006	0.006	
0	JSGGALACTURONIC-ACID	Fruit	--	--	
75	KAEMPFEROL	Seed	--	--	
0	KETOHEPTOSE	Fruit	--	--	
8	LACTIC-ACID	Fruit	--	--	
1	LANOSTEROL	Seed	--	--	
0	LEAD	Fruit	0.003	60	3.0575794820959543
2	LEUCINE	Fruit	330	5455	0.0752243388245229
0	LEUCINES	Fruit	1	90	-1
0	LEUCIONPINE	Tissue Culture	--	--	

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LEUCIONPINE-LACTAM	Tissue Culture	--	--	
0	LINALOL	Fruit	--	--	
27	LINOLEIC-ACID	Fruit	830	13720	-0.16183148310656464
0	LINOLENIC-ACID	Fruit	--	--	
11	LITHIUM	Fruit	0.28	0.68	-0.20051020792681978
0	LOPHENOL	Seed	--	--	
21	LUPEOL	Plant	--	--	
15	LUTEIN	Fruit	--	--	
0	LUTEIN-5,6-EPOXIDE	Fruit	--	--	
0	LUTEIN-EPOXIDE	Fruit	--	--	
16	LYCOPENE	Fruit	1	20	-0.9687150627932989
0	LYCOPERSICONOL	Root	--	--	
0	LYCOPERSICONOLIDE	Root	6.7	6.7	
0	LYCOPHYLL	Fruit	--	--	
0	LYCOXANTHIN	Fruit	--	--	
4	LYSINE	Fruit	20	5455	0.34718888553826305
65	MAGNESIUM	Fruit	70	6000	1.792156703535766
65	MAGNESIUM	Leaf	4300	4300	0.06728634027474291
15	MALIC-ACID	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
14	MANGANESE	Fruit	0.6	100	0.2558494650725795
1	MERCURY	Fruit	0.001	0.002	-0.7398287649593115
2	METHANOL	Fruit	--	--	
15	METHIONINE	Fruit	16	1322	0.44760045063490406
0	METHYL-2-BUTYRIC-ACID	Fruit	--	--	
0	METHYL-6-HEPTEN-5-ON-2	Fruit	--	--	
0	METHYL-GLYOXAL	Fruit	--	--	
21	METHYL-SALICYLATE	Fruit	--	--	
0	MEVALONIC-ACID	Fruit	3	4	-0.3511422318081673
2	MOLYBDENUM	Fruit	--	6	0.7172922262165865
6	MYRISTIC-ACID	Fruit	--	--	
0	N(6)-ISOPENT-2-ENYL-ADENINE	Flower	--	--	
0	N-DOTRIACONTANE	Fruit	--	--	
3	N-HENTRIACONTANE	Fruit	--	--	
0	N-HEXANOL	Fruit	--	--	
0	N-PENTANOL	Fruit	7	40	
0	N-TETRATRIACONTANE	Fruit	--	--	
0	N-TRITRIACONTANE	Fruit	--	--	
6	NARCOTINE	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
56	NARINGENIN	Fruit	--	--	
0	NEO-BETA-CAROTENE-B	Fruit	--	--	
0	NEO-BETA-CAROTENE-U	Fruit	--	--	
2	NEO-CHLOROGENIC-ACID	Leaf	--	--	
0	NEODYMIUM	Fruit	2	30	
0	NEOLYCOPENE-A	Fruit	--	--	
0	NEOLYCOPENE-B	Fruit	--	--	
0	NEOTIGOGENIN	Tissue Culture	300	1500	
2	NEOXANTHIN	Fruit	--	--	
0	NESTIGOGENIN	Fruit	--	--	
0	NEUROSPORINE	Fruit	--	--	
39	NIACIN	Fruit	6	99	0.5120297557575215
3	NICKEL	Fruit	0.01	5	0.7411420124402034
1	NICOTIANAMINE	Leaf	--	--	
0	NITROGEN	Fruit	1300	23330	0.6105662880376689
0	NITROGEN	Leaf	26000	26000	-0.8883183976410487
2	NONACOSANE	Fruit	--	--	
6	O-CRESOL	Fruit	--	--	
0	O-HYDROXY-ACETOPHENONE	Fruit	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	OBTUSIFOLIOL	Seed	--	--	
18	OLEIC-ACID	Fruit	310	5124	-0.4412527769086485
9	OXALIC-ACID	Fruit	36	263	-0.29184659005431485
25	P-COUMARIC-ACID	Fruit	--	--	
0	P-COUMARIC-ACID-O-BETA-D-GLUCOSIDE	Fruit	--	--	
4	P-HYDROXYBENZALDEHYDE	Plant	--	--	
13	PALMITIC-ACID	Fruit	210	3471	-0.3114994807565609
2	PALMITOLEIC-ACID	Fruit	10	165	-0.31527384122418833
11	PANTOTHENIC-ACID	Fruit	1	61	2.7361520161638526
24	PECTIN	Fruit	100	31000	-0.26219655982605244
0	PECTINESTERASE	Fruit	--	--	
0	PENTANOLS	Fruit	--	--	
0	PENTEN-1-OL-3	Fruit	--	--	
26	PHENOL	Fruit	--	--	
0	PHENOLICS	Fruit	27	570	
0	PHENYL-2-ETHANOL	Fruit	--	--	
2	PHENYL-ACETALDEHYDE	Fruit	--	--	
0	PHENYLACETONITRILE	Fruit	--	--	
7	PHENYLALANINE	Fruit	72	3801	0.1648088706306435

Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference	Citation
0	PHOSPHATIDYL-GLYCEROL	Leaf	--	--		
4	PHOSPHORUS	Fruit	110	8400	1.57458868730343	
4	PHOSPHORUS	Leaf	5500	5500	0.09724548038608762	
5	PHYLLUQUINONE	Plant	--	0.06	-0.8744617423558159	Booth, S. L., Suttie, J. W. 1998. Dietary intake and adequacy of vitamin K. J. Nutrition, 128(5): 785-788.
0	PHYTOENE	Fruit	--	--		
0	PHYTOENE-1,2-OXIDE	Fruit	--	--		
0	PHYTOFLUENE	Fruit	--	--		
2	PHYTOSTEROLS	Fruit	70	1157	0.2726326213323643	
2	PIPECOLIC-ACID	Fruit	--	--		
0	POLYGALACTURONASE	Fruit	--	--		
14	POTASSIUM	Fruit	780	58800	3.617110820777692	
14	POTASSIUM	Leaf	47000	47000	0.7354883261537547	
0	PROLINE	Fruit	170	2810	-0.32870353592235396	
0	PROLINE	Root	541	541	-0.940431214607169	
0	PROLYCOPENE	Fruit	--	--		
0	PROPANOLS	Fruit	--	--		
6	PROPIONIC-ACID	Fruit	--	--		

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	PROTEIN	Fruit	8790	148935	0.5286628949100235
0	PROTOPECTIN	Fruit	11700	24200	
1	PYRUVIC-ACID	Fruit	--	--	
176	QUERCETIN	Fruit	--	--	
1	QUERCETIN-3-O-RHAMNOSIDE	Fruit	--	--	
44	QUERCITRIN	Fruit	--	--	
15	RIBOFLAVIN	Fruit	1	8	0.6405083179917069
6	RISHITIN	Plant	--	--	
0	RUBIDIUM	Fruit	0.3	22	0.22373836408620662
87	RUTIN	Fruit	--	--	
87	RUTIN	Leaf	24000	24000	0.4854288744261521
0	RUTINOSIDE	Fruit	--	--	
0	S-METHYL-METHIONINE	Fruit	16	35	
5	SALICYLALDEHYDE	Fruit	--	--	
60	SELENIUM	Fruit	0.001	0.034	-0.37775603960259097
1	SERINE	Fruit	57	3967	0.11438876561478017
4	SILICON	Fruit	--	--	
3	SILVER	Fruit	--	1.4	3.2317499543193087
1	SODIUM	Fruit	10	6600	0.4419198012294464



Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
0	SOLADULCIDINE	Shoot	--	--	
26	SOLANINE	Fruit	--	--	
10	SQUALENE	Fruit	--	--	
5	STARCH	Fruit	120	10000	-0.44130528294778915
8	STEARIC-ACID	Fruit	80	1322	-0.19154902378625838
12	STIGMASTEROL	Fruit	--	--	
0	STRONTIUM	Fruit	--	140	1.2364149561469178
7	SUCCINIC-ACID	Fruit	--	--	
14	SUCROSE	Fruit	--	--	
0	SUGARS	Fruit	15000	45000	-0.6984481426660107
0	SULFOQUINOVOSYL-DIACYL-GLYCEROL	Leaf	--	--	
14	SULFUR	Fruit	107	2330	0.6371218913711442
4	SYRINGALDEHYDE	Plant	--	--	
6	TARTARIC-ACID	Fruit	--	--	
0	TETRA-DECA-CIS-6-ENE-1,3-DIYNE-5,8-DIOL	Stem	--	--	
31	THIAMIN	Fruit	1	10	0.5974378588358942
4	THREONINE	Fruit	65	3637	0.2574391545243345
0	TITANIUM	Fruit	--	140	2.411140632740012
0	TOMATIDA-3,5-DIENE	Shoot	--	--	

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
2	TOMATIDINE	Plant	--	--	
6	TOMATINE	Flower	--	--	
6	TOMATINE	Leaf	6	8	
0	TOMATOSIDE-A	Seed	--	--	
2	TRANS-ACONITIC-ACID	Fruit	--	--	
0	TRANS-METHYL-6-HEPTADIENE-3,5-ON-2	Plant	--	--	
0	TRIACONTANE	Fruit	--	--	
0	TRICODECAN-3-ONE	Leaf	--	--	
0	TRIDECAN-2-ONE	Leaf	--	--	
0	TRIDECAN-3-ONE	Leaf	--	--	
15	TRIGONELLINE	Root	14	14	-0.497475071194002
0	TRIMETHYL-2,6,6-HYDROXY-2-CYCLOHEXANONE	Fruit	--	--	
4	TRYPTAMINE	Fruit	--	--	
29	TRYPTOPHAN	Fruit	1	1157	0.43023114372368443
11	TYRAMINE	Fruit	--	--	
8	TYROSINE	Fruit	38	2479	0.02497639422190393
2	UBIQUINONE-10	Tissue Culture	60	60	
3	VALINE	Fruit	1	3801	-0.13452560212320389
16	VANADIUM	Fruit	--	6	-0.6496341484486877

Chemical Plant Part		Low PPM	High PPM	StdDev	Reference Citation
28	VANILLIN	Plant	--	--	
2	VIOLAXANTHIN	Fruit	--	--	
0	VIT-B-6	Fruit	--	9	0.13352756126001855
0	WATER	Fruit	910000	982000	0.9192924875244552
3	XANTHOPHYLL	Fruit	--	--	
0	YTTRIUM	Fruit	--	6	
2	ZEATIN	Fruit	--	--	
0	ZEATIN-GLUCOSIDE	Flower	--	--	
0	ZEATIN-RIBOSIDE	Flower	--	--	
5	ZEAXANTHIN	Fruit	--	--	
0	ZETA-CAROTENE	Fruit	--	--	
77	ZINC	Fruit	1	120	2.6986566422305542
0	ZIRCONIUM	Fruit	--	4	0.03855749503364986