

Table 9

ORGANIC ACIDS



Table 9. ORGANIC ACIDS

(All values are expressed per 100g edible portion; All blank space in the table represent below detectable limit)

Food Name			Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble							
←							mg	→				
						CITAC	FUMAC	MALAC			SUCAC	TARAC
A	CEREALS AND MILLETS											
A001	Amaranth seed, black (<i>Amaranthus cruentus</i>)	1	226	37.43	188		8.64	0.15	45.78	75.53	1.47	
A002	Amaranth seed, pale brown (<i>Amaranthus cruentus</i>)	6	209±49.7	32.30±1.46	177±49.8	0.14±0.02	7.93±0.45	0.14±0.02	47.16±1.64	75.06±0.57	1.89±0.13	
A003	Bajra (<i>Pennisetum typhoideum</i>)	6	53.13±5.34	43.49±3.90	9.88±8.36	0.08±0.03		1.99±0.59	0.86±0.21		0.02±0.01	
A004	Barley (<i>Hordeum vulgare</i>)	6	10.98±1.31	8.73±0.54	2.04±0.61	1.43±0.27			0.90±0.48	0.52±0.09	0.17±0.06	3.24±1.27
A005	Jowar (<i>Sorghum vulgare</i>)	6	28.38±2.65	24.62±4.49	1.72±0.46			1.84±0.79	0.51±0.24		3.88±1.22	
A006	Maize, dry (<i>Zea mays</i>)	6	15.26±1.78	14.19±1.30	2.73±1.34			0.66±0.20	0.93±0.50	0.84±0.07	1.50±0.23	0.94±0.05
A007	Maize, tender, local (<i>Zea mays</i>)	6	5.20±1.09	3.98±0.66	0.92±0.15	0.29±0.07		0.46±0.19	0.73±0.48	1.83±0.58	1.22±0.10	4.35±0.72
A008	Maize, tender, sweet (<i>Zea mays</i>)	4	1.67±0.15	1.45±0.08	0.34±0.12	0.26±0.01		0.78±0.07	0.64±0.15	4.56±0.78	1.90±0.53	2.24±0.43
A009	Quinoa (<i>Chenopodium quinoa</i>)	1	82.94	42.22	40.72			25.07	0.23		2.07	
A010	Ragi (<i>Eleusine coracana</i>)	5	39.58±6.47	31.16±3.05	8.58±1.55			0.20±0.06	0.75±0.35		1.89±0.56	1.60±0.26
A011	Rice flakes (<i>Oryza sativa</i>)	6	10.97±0.60	8.52±0.48	2.45±0.40			1.28±0.10	0.48±0.23		1.35±0.28	
A012	Rice puffed (<i>Oryza sativa</i>)	6	6.27±0.24	5.59±0.21	0.68±0.25			0.49±0.21	0.45±0.12		1.30±0.28	
A013	Rice, raw, brown (<i>Oryza sativa</i>)	6	12.06±1.05	9.30±0.83	1.96±0.44			1.72±0.60	0.50±0.29		1.85±0.60	
A014	Rice, parboiled, milled (<i>Oryza sativa</i>)	6	5.02±0.81	3.70±0.97	1.10±0.68			0.05±0.02	0.49±0.26		1.61±0.36	
A015	Rice, raw, milled (<i>Oryza sativa</i>)	6	1.92±0.37	1.58±0.37	0.35±0.08			0.07±0.06	0.48±0.34		1.54±0.41	
A016	Samai (<i>Panicum miliare</i>)	6	6.74±0.98	5.40±0.49	1.61±0.11			0.37±0.04	0.51±0.23		2.35±0.69	6.07±2.18
A017	Varagu (<i>Setaria italica</i>)	5	3.48±0.17	2.57±0.40	0.65±0.06	0.21±0.03		0.26±0.09	0.45±0.24		1.87±0.82	
A018	Wheat flour, refined (<i>Triticum aestivum</i>)	6	20.22±0.77	11.02±0.64	9.20±0.57			1.07±0.07	0.02±0.01	5.57±1.78	1.05±0.06	1.07±0.04

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Table 9. Organic Acids

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Food code	Food Name	No. of Regions	Oxalate			Cis-Aconitic	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble	Acid						
← mg →												

B GRAIN LEGUMES												
B001	Bengal gram, dal (<i>Cicer arietinum</i>)	6	6.49±1.18	5.29±0.51	1.20±0.66			55.58±1.22	0.52±0.14		0.74±0.09	
B002	Bengal gram, whole (<i>Cicer arietinum</i>)	6	7.14±1.36	5.57±0.58	1.70±0.08			81.17±6.44	0.71±0.19		1.56±0.35	
B003	Black gram, dal (<i>Phaseolus mungo</i>)	6	43.78±1.49	24.50±1.68	19.68±1.55			1.65±0.48	0.54±0.24		0.79±0.22	
B004	Black gram, whole (<i>Phaseolus mungo</i>)	6	56.25±2.42	34.17±1.70	22.09±2.32			18.01±1.27	0.60±0.16		2.16±0.30	
B005	Cowpea, brown (<i>Vigna catjang</i>)	6	14.34±1.86	10.83±1.05	2.55±0.78	0.02±0.01		1.54±0.37	0.68±0.23		5.38±3.28	
B006	Cowpea, white (<i>Vigna catjang</i>)	1	17.23	1.29	15.94	0.02		1.21	0.82		1.35	
B007	Field bean, black (<i>Phaseolus vulgaris</i>)	1	1.28	1.10	0.18			3.83	0.44		6.84	
B008	Field bean, brown (<i>Phaseolus vulgaris</i>)	1	1.26	1.10	0.16			2.24	0.52		4.52	
B009	Field bean, white (<i>Phaseolus vulgaris</i>)	5	1.23±0.05	0.97±0.07	0.31±0.08			3.12±0.73	0.89±0.44		1.67±0.88	
B010	Green gram, dal (<i>Phaseolus aureus</i>)	6	2.46±0.74	1.94±0.66	0.52±0.39			2.16±0.71	1.50±0.30		1.33±0.26	
B011	Green gram, whole (<i>Phaseolus aureus</i>)	6	12.29±0.30	10.57±0.27	1.72±0.12			5.98±0.84	1.84±0.13		1.34±0.29	
B012	Horse gram, whole (<i>Dolichus biflorus</i>)	6	181±9.1	144±7.7	38.36±3.08			37.04±2.71	0.37±0.12		0.68±0.44	
B013	Lentil dal (<i>Lens culinaris</i>)	6	10.46±1.00	8.42±1.07	2.04±0.42			2.77±0.94	0.18±0.07	21.37±4.24	0.70±0.20	0.12±0.11

Foodcode	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid Tartaric Acid	
			Total	Soluble	Insoluble							
			← mg →									
			CITAC	FUMAC	MALAC		SUCAC	TARAC				
B014	Lentil whole, brown (<i>Lens culinaris</i>)	6	10.74±0.61	8.71±0.71	3.04±1.44	1.56±0.28		0.04±0.01	0.50±0.14	25.17±1.15	1.57±0.44	10.13±0.01
B015	Lentil whole, yellowish (<i>Lens culinaris</i>)	2	13.88	10.76	3.38	1.35		0.10	0.68	23.29	1.31	12.95
B016	Moth bean (<i>Vigna aconitifolia</i>)	6	36.11±6.26	28.72±1.91	10.15±0.37			2.25±0.33	0.71±0.28		4.25±1.68	
B017	Peas, dry (<i>Pisum sativum</i>)	6	8.89±1.04	6.75±0.73	2.35±0.64	2.98±0.68		1.32±0.44	0.82±0.52	83.15±7.96	3.48±1.84	
B018	Rajmah, black (<i>Phaseolus vulgaris</i>)	2	48.66	45.46	3.20			2.72	1.20		3.71	
B019	Rajmah, brown (<i>Phaseolus vulgaris</i>)	6	43.41±8.69	33.48±4.15	8.16±0.95			2.40±0.85	0.73±0.34		3.48±2.08	
B020	Rajmah, red (<i>Phaseolus vulgaris</i>)	3	41.44±8.25	38.84±7.80	2.60±0.44			2.19±0.62	0.67±0.47		3.76±1.34	
B021	Red gram, dal (<i>Cajanus cajan</i>)	6	1.41±0.11	1.20±0.13	0.22±0.08			0.48±0.18	0.56±0.23	3.28±1.69	0.55±0.22	2.02±0.57
B022	Red gram, whole (<i>Cajanus cajan</i>)	6	1.65±0.11	1.33±0.15	0.32±0.16			4.13±0.51	1.53±0.42	4.03±1.62	1.55±0.27	2.20±0.52
B023	Ricebean (<i>Vigna umbellata</i>)	1	391	70.36	321			20.05	3.86		0.40	
B024	Soya bean, brown (<i>Glycine max</i>)	6	122±5.3	8.19±0.22	114±5.1			31.91±4.04	1.34±0.17		0.82±0.25	
B025	Soya bean, white (<i>Glycine max</i>)	1	119	8.18	111		0.08	33.52	1.32		0.89	
C	GREEN LEAFY VEGETABLES											
C001	Agathi leaves (<i>Sesbania grandiflora</i>)	1	179	8.06	171		2.46	7.26	7.59		3.27	
C002	Amaranth leaves, green (<i>Amaranthus gangeticus</i>)	6	779±232	198±29.7	582±203.6		2.70±0.16	3.64±1.13	5.03±1.57		3.78±1.44	
C003	Amaranth leaves, red (<i>Amaranthus gangeticus</i>)	1	823	185	438		2.79	2.99	4.52		2.98	
C004	Amaranth leaves, red and green (<i>Amaranthus gangeticus</i>)	4	676±157	188±6.5	489±159		2.76±0.26	2.87±0.88	5.97±1.14		2.39±1.48	
C005	Amaranth spinosus, leaves, green (<i>Amaranthus spinosus</i>)	4	1073±158	81.78±11.52	991±147	6.11±0.59	2.58±0.28	11.15±1.10	3.84±0.95			
C006	Amaranth spinosus, leaves, red and green (<i>Amaranthus spinosus</i>)	2	1045	90.20	955	6.19	2.52	15.45	4.67		3.39	

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			Total	Soluble	Insoluble							
			← mg →									
								CITAC	FUMAC	MALAC		SUCAC
C007	Basella leaves (<i>Basella alba</i>)	2	170	35.47	133		8.18	0.33	1.40		4.72	
C008	Bathua leaves (<i>Chenopodium album</i>)	2	1077	228	850	3.08	8.64	0.46	5.53		1.32	
C009	Beet greens (<i>Beta vulgaris</i>)	6	127±21.6	34.98±5.06	92.38±19.84		2.27±1.28	0.32±0.16	3.17±1.54		62.38±17.90	
C010	Betel leaves, big (kolkata) (<i>Piper betle</i>)	6	493±113	151±7.5	342±116		2.27±0.61	0.58±0.31	6.25±0.62	0.27±0.03	10.74±2.70	145±13.5
C011	Betel leaves, small (<i>Piper betle</i>)	4	577±139	183±8.1	393±138		1.65±0.31	0.27±0.14	5.39±0.40	0.32±0.04	12.62±2.15	51.07±9.78
C012	Brussels sprouts (<i>Brassica oleracea</i> var. <i>gemmifera</i>)	1	12.40	4.67	7.73		2.63	2.24	4.07		11.56	
C013	Cabbage, Chinese (<i>Brassica rupa</i>)	1	16.55	1.85	14.77		67.54	0.41	5.65	88.30	85.00	
C014	Cabbage, collard greens (<i>Brassica oleracea</i> var. <i>viridis</i>)	1	9.42	0.80	8.62	0.03	45.82	0.81	0.55	58.30	89.66	2.98
C015	Cabbage, green (<i>Brassica oleracea</i> var. <i>capitata</i> f. <i>alba</i>)	6	2.88±0.67	0.53±0.40	2.35±0.42	0.04±0.03	64.87±12.68	0.82±0.44	0.22±0.09	90.09±3.28	90.00±6.27	2.04±0.94
C016	Cabbage, violet (<i>Brassica oleracea</i> var. <i>capitata</i> f. <i>rubra</i>)	2	2.70	0.26	2.45	0.02	61.73	0.78	0.62	37.25	88.78	2.43
C017	Cauliflower leaves (<i>Brassica oleracea</i> var. <i>botrytis</i>)	6	172±25.8	10.10±1.36	162±25.5		62.21±0.97	0.35±0.23	1.82±0.10	3.45±0.16	48.86±1.42	4.20±0.07
C018	Colocasia leaves, green (<i>Colocasia anti-quorum</i>)	6	701±112	208±13.2	492±105		19.37±1.49	3.95±1.20	56.27±5.95		212±3.0	
C019	Drumstick leaves (<i>Moringa oleifera</i>)	3	120±14.9	13.69±1.54	107±16.0		19.22±2.39		88.40±4.34	105±3.9	101±21.2	
C020	Fenugreek leaves (<i>Trigonella foenum graecum</i>)	5	34.29±9.84	9.08±4.26	25.21±5.80		32.26±11.71	8.41±1.41	130±1.8	189±1.8	16.47±2.19	
C021	Garden cress (<i>Lepidium sativum</i>)	2	115	30.47	84.15		7.13	5.64	85.23		152	
C022	Gogu leaves, green (<i>Hibiscus cannabinus</i>)	4	177±13.2	33.01±3.67	144±14.4	7.51±0.90	3.99±1.24	11.56±1.04	40.77±5.23	102±0.8	25.25±1.54	
C023	Gogu leaves, red (<i>Hibiscus cannabinus</i>)	1	187	31.86	155	6.86	3.42	11.82	34.63	105	22.40	
C024	Knol-Khol, leaves (<i>Brassica oleracea</i> var. <i>gongylodes</i>)	2	2.92	1.88	1.04		5.47	3.87	38.98		26.96	
C025	Lettuce (<i>Lactuca sativa</i>)	3	364±82.7	72.08±35.77	292±47.2		9.24±0.60	1.99±0.15	63.28±2.19	12.74±1.73	60±3.3	
C026	Mustard leaves (<i>Brassica juncea</i>)	3	1.69±0.04	1.49±0.09	0.20±0.05		4.62±0.95	4.07±0.86	0.68±0.32		22.73±0.64	

Food code	Food Name	No.	Oxalate			Cis-Aconitic Acid	Citric Acid	mg			Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble			Fumaric Acid	Mallic Acid	Quinic Acid		
←					→							
						CITAC	FUMAC	MALAC		SUCAC	TARAC	
C027	Pak Choi leaves (<i>Brassica rapa</i> var. <i>Chinensis</i>)	1	14.35	2.15	12.20		35.85	1.01	1.82	4.75	79.88	3.14
C028	Parsley (<i>Petroselinum crispum</i>)	3	128±8.1	11.50±1.06	116±7.5	113±0.6	1.36±0.29	0.83±0.12	113±0.6		104±13.5	
C029	Ponnaganni (<i>Alternanthera sessilis</i>)	2	465	165	299		5.82	0.83			246	
C030	Pumpkin leaves, tender (<i>Cucurbita maxima</i>)	6	13.61±1.91	5.06±1.41	8.55±0.96	30.67±1.03	7.74±2.63	14.35±1.44	30.67±1.03	20.22±1.26	54.07±0.72	
C031	Radish leaves (<i>Raphanus sativus</i>)	6	53.83±15.04	23.46±3.89	30.37±13.72	6.04±0.69	3.15±1.60	1.66±0.37	6.04±0.69	22.96±0.89	139±3.2	
C032	Rumex leaves (<i>Rumex patientia</i>)	2	93.76	45.96	47.81	1.64	9.68	3.91	1.64		2.58	4.06
C033	Spinach (<i>Spinacia oleracea</i>)	6	592±36.7	241±18.8	351±30.8	15.79±2.95	67.34±14.43	5.44±0.79	15.79±2.95	254±7.9	1.64±0.25	
C034	Tamarind leaves, tender (<i>Tamarindus indica</i>)	3	150±13.9	72.63±14.02	77.44±22.84			6.46±4.33			195±7.0	44.76±19.99
D	OTHER VEGETABLES											
D001	Ash gourd (<i>Benincasa hispida</i>)	6	4.89±0.85	3.28±1.29	1.61±0.90		36.91±1.03	0.57±0.04				
D002	Bamboo shoot, tender (<i>Bambusa vulgaris</i>)	1	85.70	75.01	10.69	2.60	12.53	0.10	2.60	30.26	103	
D003	Bean scarlet, tender (<i>Phaseolus coccineus</i>)	5	20.97±3.63	5.72±1.98	16.88±3.26	35.70±1.14	21.45±0.79	1.79±0.14	35.91±0.95		174±1.0	
D004	Bitter gourd, jagged, teeth ridges, elongate (<i>Momordica charantia</i>)	6	45.40±11.17	17.53±2.08	27.87±11.44		59.33±1.55	1.41±0.22			7.49±1.41	
D005	Bitter gourd, jagged, teeth ridges, short (<i>Momordica charantia</i>)	4	48.83±10.78	16.28±2.12	32.55±10.52		66.42±2.46	1.51±0.47			7.44±0.71	
D006	Bitter gourd, jagged, smooth ridges, elongate (<i>Momordica charantia</i>)	1	43.37	15.33	28.04		65.68	1.42			9.15	
D007	Bottle gourd, elongate, pale green (<i>Lagenaria vulgaris</i>)	6	3.75±1.45	2.67±1.39	1.08±0.39		31.16±1.71	0.16±0.02			64.96±1.83	
D008	Bottle gourd, round, pale green (<i>Lagenaria vulgaris</i>)	5	2.53±1.02	1.38±0.32	1.15±0.88		31.12±2.36	0.14±0.02			65.18±2.07	
D009	Bottle gourd, elongate, dark green (<i>Lagenaria vulgaris</i>)	1	1.70	1.32	0.38		33.41	0.12			64.80	

Table
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			Total	Soluble	Insoluble														
			← mg →																
													CITAC	FUMAC	MALAC			SUCAC	TARAC
D010	Brinjal-1 (<i>Solanum melongena</i>)	1	34.00	31.26	2.75	1.63	8.21	81.83	22.88			14.71							
D011	Brinjal-2 (<i>Solanum melongena</i>)	1	35.87	33.45	2.42	0.23	7.31	47.27	26.76			17.75							
D012	Brinjal-3 (<i>Solanum melongena</i>)	2	32.40	30.44	1.96	1.53	10.49	48.35	36.97			17.94							
D013	Brinjal-4 (<i>Solanum melongena</i>)	4	29.37±6.87	25.15±5.01	4.22±1.93	1.50±1.00	9.54±1.17	39.27±13.07	66.55±27.18			14.92±6.79							
D014	Brinjal-5 (<i>Solanum melongena</i>)	3	33.50±6.86	29.75±5.82	3.75±1.25	2.03±2.08	7.75±2.21	18.75±2.32	45.24±40.15			15.48±4.63							
D015	Brinjal-6 (<i>Solanum melongena</i>)	2	36.80	30.16	6.64	2.64	10.49	16.82	87.21			12.95							
D016	Brinjal-7 (<i>Solanum melongena</i>)	1	33.68	28.92	4.76	1.82	8.88	92.63	25.26			10.18							
D017	Brinjal-8 (<i>Solanum melongena</i>)	3	37.86±8.54	27.54±6.36	10.31±9.80	2.20±1.16	9.44±1.17	21.92±12.56	66.28±32.10			16.85±3.56							
D018	Brinjal-9 (<i>Solanum melongena</i>)	2	43.33	29.17	14.16	1.22	10.41	43.53	71.11			18.90							
D019	Brinjal-10 (<i>Solanum melongena</i>)	2	34.80	31.32	3.48	0.84	8.45	75.35	44.41			8.59							
D020	Brinjal-11 (<i>Solanum melongena</i>)	6	32.83±4.23	28.92±4.34	3.91±0.92	1.47±0.76	11.27±4.36	82.70±7.81	43.85±22.27			17.63±6.70							
D021	Brinjal-12 (<i>Solanum melongena</i>)	2	31.81	26.14	5.67	1.17	10.49	61.07	64.57			12.76							
D022	Brinjal-13 (<i>Solanum melongena</i>)	1	29.12	25.33	3.79	0.30	9.12	68.87	44.26			10.81							
D023	Brinjal-14 (<i>Solanum melongena</i>)	3	32.95±6.18	27.09±7.24	5.86±1.35	1.81±0.41	8.63±1.55	66.96±10.76	48.93±13.54			15.19±2.69							
D024	Brinjal-15 (<i>Solanum melongena</i>)	4	29.74±8.02	21.77±2.50	7.97±7.06	0.85±0.41	10.85±1.64	47.43±9.97	48.77±9.12			16.71±4.93							
D025	Brinjal-16 (<i>Solanum melongena</i>)	1	32.81	28.76	4.05	1.36	8.65	91.48	35.19			16.57							
D026	Brinjal-17 (<i>Solanum melongena</i>)	1	37.14	32.46	4.68	1.72	10.12	23.51	98.93			12.86							
D027	Brinjal-18 (<i>Solanum melongena</i>)	3	37.58±5.39	31.76±6.44	5.82±1.35	1.68±0.89	8.79±4.17	51.60±15.25	52.70±14.73			17.75±6.55							
D028	Brinjal-19 (<i>Solanum melongena</i>)	3	37.84±5.68	27.09±7.24	10.75±8.72		9.02±3.11	47.69±15.14	23.76±11.67			15.11±4.10							
D029	Brinjal-20 (<i>Solanum melongena</i>)	5	35.39±5.77	28.44±5.50	6.94±3.13	2.99±1.50	9.29±1.60	63.90±41.84	22.64±6.12		9.26±1.10	13.08±3.76							
D030	Brinjal-21 (<i>Solanum melongena</i>)	2	34.60	25.48	9.13	2.08	9.01	48.90	50.74			15.10							

Food code	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid							
			Total	Soluble	Insoluble														
			← mg →																
						CITAC	FUMAC	MALAC		SUCAC	TARAC								
D031	Brinjal - all varieties (<i>Solanum melongena</i>)	6	34.31±5.90	28.17±5.01	6.14±4.44	1.66±1.03	9.76±2.73	56.02±26.03	47.84±24.54		9.26±1.10	15.52±5.06							
D032	Broad beans (<i>Vicia faba</i>)	3	20.25±1.21	5.81±2.00	13.00±1.34		124±1.2	1.12±0.18	4.99±0.37										
D033	Capsicum, green (<i>Capsicum annuum</i>)	6	19.12±1.47	6.83±1.34	2.29±1.07		103±1.4	0.26±0.02	185±2.9		250±6.3								
D034	Capsicum, red (<i>Capsicum annuum</i>)	4	16.28±4.34	10.73±0.98	5.54±3.61		33.39±9.88	0.41±0.11	116±8.2	5.10±2.99	151±40.3								
D035	Capsicum, yellow (<i>Capsicum annuum</i>)	4	18.07±2.72	11.03±1.22	7.04±3.82		56.43±17.52	1.03±0.32	115±10.1		127±19.5								
D036	Cauliflower (<i>Brassica oleracea</i>)	6	9.82±1.49	1.88±0.83	7.95±1.59	0.25±0.05	104±1.8	4.60±0.68	11.04±0.87	4.94±0.81	282±5.6	4.25±2.38							
D037	Celery stalk (<i>Apium graveolens</i>)	3	54.23±7.31	23.18±3.10	31.04±10.38		158±3.4		5.96±0.75	51.46±2.07	9.36±0.58								
D038	Cho-cho-marrow (<i>Sechium edule</i>)	4	1.55±0.45	1.14±0.41	0.41±0.20	0.13±0.02	60.10±4.56			37.30±4.21	32.49±3.30	0.51±0.26							
D039	Cluster beans (<i>Cyamopsis tetragonobola</i>)	6	16.49±1.45	8.55±0.23	8.58±1.10	0.03±0.01	92.19±1.95	1.36±0.56	6.02±1.12	45.46±1.06	227±1.8								
D040	Colocasia, stem, black (<i>Colocasia antiquorum</i>)	1	250	177	73.74		20.30	4.65	296		62.60								
D041	Colocasia, stem, green (<i>Colocasia antiquorum</i>)	5	229±48.1	172±14.4	64.37±37.16		24.01±1.37	0.15±0.02	156±2.8		96.99±1.38								
D042	Corn, Baby (<i>Zea mays</i>)	6	9.22±3.75	4.94±3.44	4.27±0.69	0.29±0.00	21.14±15.00	4.15±2.34		5.57±2.27	60.48±19.84	4.38±1.77							
D043	Cucumber, green, elongate (<i>Cucumis sativus</i>)	6	12.13±1.56	2.28±0.05	9.84±1.58		81.51±17.01	4.13±0.44	68.75±8.77	4.97±2.73	40.70±5.40								
D044	Cucumber, green, short (<i>Cucumis sativus</i>)	6	10.49±1.31	2.27±0.05	8.22±1.31		60.82±11.41	3.50±0.55	67.07±5.09	3.38±1.81	47.40±6.19								
D045	Cucumber, orange, round (<i>Cucumis sativus</i>)	2	11.55	2.31	9.24		37.31	4.40	64.48	5.70	50.82								
D046	Drumstick (<i>Moringa oleifera</i>)	6	123±8.5	66.98±5.99	55.82±3.91	16.31±2.04	72.33±14.95	44.83±1.95	406±2.7	29.95±5.10	60.96±12.76	130±6.5							
D047	Field beans, tender, broad (<i>Vicia faba</i>)	2	34.83	8.82	26.02	16.20	52.58	5.26	59.82										
D048	Field beans, tender, lean (<i>Vicia faba</i>)	6	35.12±6.94	8.81±0.16	26.31±6.94	12.43±2.69	58.47±7.11	4.45±0.91	54.81±2.50										
D049	French beans, country (<i>Phaseolus vulgaris</i>)	5	36.01±7.98	4.02±0.04	31.99±7.99	14.40±0.61	92.41±12.43	13.53±1.34	67.01±0.85										
D050	French beans, hybrid (<i>Phaseolus vulgaris</i>)	2	36.97	4.88	32.09	12.60	81.10	14.40	68.60										

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Food code	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble							
			← mg →									
						CITAC	FUMAC	MALAC	SUCAC		TARAC	
D051	Jack fruit, raw (<i>Artocarpus heterophyllus</i>)	5	9.60±1.48	7.24±1.39	2.37±0.33	4.81±0.55	35.40±1.54	7.80±1.06	82.78±0.99	450±30.9		
D052	Jack fruit, seed, mature (<i>Artocarpus heterophyllus</i>)	5	38.51±7.16	31.03±2.98	7.48±4.68	1.72±0.57	19.76±1.49	7.51±0.64	82.47±1.71	427±37.5		
D053	Knol - Khol (<i>Brassica oleracea</i>)	6	2.92±0.96	1.88±0.55	1.04±0.41		14.19±1.86	5.90±1.29	5.57±2.23	248±40.5	6.42±0.67	
D054	Kovai, big (<i>Coccinia cordifolia</i>)	6	7.72±1.93	4.76±0.26	2.96±1.79	5.38±0.53	22.68±2.00	0.56±0.18	46.41±4.22	90.46±2.46	254±1.3	
D055	Kovai, small (<i>Coccinia cordifolia</i>)	1	8.15	5.01	3.14	5.63	25.89	0.41	51.63	92.82	239.14	
D056	Ladies finger (<i>Abelmoschus esculentus</i>)	6	83.87±6.55	5.99±0.15	77.88±6.46	3.65±0.65	21.66±6.84	64.57±1.17	16.24±0.99	151±4.5	120±3.5	
D057	Mango, green, raw (<i>Mangifera indica</i>)	6	7.51±1.45	3.92±0.04	3.60±1.47	0.47±0.29	32.73±1.32	1.38±0.37	84.39±1.25			85.92±3.20
D058	Onion, stalk (<i>Allium cepa</i>)	6	29.72±6.15	22.72±7.76	7.00±2.16		839±6.3	1.41±0.27	76.23±2.35	82.32±3.15		
D059	Papaya, raw (<i>Carica papaya</i>)	6	9.38±1.31	4.77±0.56	4.69±0.77	2.51±0.52	28.85±0.71	2.05±0.10	57.46±3.88	31.63±1.71	22.61±0.12	
D060	Parwar (<i>Trichosanthes dioica</i>)	6	3.24±0.72	1.56±0.19	1.58±0.25		28.36±10.14	3.26±0.70	1.61±0.31	3.29±0.96	31.10±1.95	3.13±0.64
D061	Peas, fresh (<i>Pisum sativum</i>)	6	18.42±1.34	14.18±1.03	4.65±0.69	0.15±0.02		17.69±2.27	0.84±0.83	160±3.9	2.39±0.99	
D062	Plantain, flower (<i>Musa x paradisiaca</i>)	6	169±23.5	129±7.4	39.91±21.86	0.05±0.01	57.65±5.95	2.04±0.54	13.04±1.14			
D063	Plantain, green (<i>Musa x paradisiaca</i>)	6	85.25±9.52	49.83±2.70	35.42±11.56	0.13±0.03	35.87±3.43	1.27±0.54	33.35±1.74	12.62±1.49		
D064	Plantain, stem (<i>Musa x paradisiaca</i>)	6	213±27.5	159±4.9	53.28±29.45	0.13±0.02	14.29±1.65	0.11±0.02	34.47±4.30			
D065	Pumpkin, green, cylindrical (<i>Cucurbita maxima</i>)	1	57.33	49.61	7.72	1.13	159	1.13	13.51	37.98		
D066	Pumpkin, orange, round (<i>Cucurbita maxima</i>)	6	41.22±10.34	35.84±11.23	5.38±1.93	1.59±0.33	33.32±14.78	1.35±0.31	3.34±1.11		4.56±1.56	
D067	Red gram, tender, fresh (<i>Cajanus cajan</i>)	1	19.83	19.29	0.54			28.36	0.77	5.19	0.76	5.60
D068	Ridge gourd (<i>Luffa acutangula</i>)	6	29.55±4.23	1.22±0.10	28.33±4.20	0.07±0.01	152±4.8	11.35±1.54	12.36±1.46	32.05±1.81		
D069	Ridge gourd, smooth skin (<i>Luffa acutangula</i>)	3	35.85±6.19	1.15±0.02	34.70±6.20	0.07±0.01	112±9.2	10.13±0.80	45.56±9.92			
D070	Snake gourd, long, pale green (<i>Trichosanthes anguina</i>)	6	24.22±5.03	3.88±0.66	20.34±4.78	2.53±0.74	110±8.3	1.67±0.47	54.35±1.86			
D071	Snake gourd, long, dark green (<i>Trichosanthes anguina</i>)	2	13.44	3.53	9.90	1.29	123	1.91	68.18	36.82		

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			← mg →																
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D072	Snake gourd, short (<i>Trichosanthes anguina</i>)	1	14.25	3.40	10.85	1.82	126	1.89	63.86	33.48									
D073	Tinda, tender (<i>Praecitrullus fistulosus</i>)	6	3.36±1.01	1.91±0.86	1.26±0.64		119±2.8	15.51±3.24	62.38±1.38	33.36±3.52									
D074	Tomato, green (<i>Lycopersicon esculentum</i>)	6	8.47±2.24	6.95±1.85	1.52±0.50		135±1.1	0.31±0.02	6.77±0.37										
D075	Tomato, ripe, hybrid (<i>Lycopersicon esculentum</i>)	6	2.89±0.68	2.12±0.73	0.77±0.44		288±8.7	0.06±0.03	11.58±2.59		58.82±11.29	2.86±0.78							
D076	Tomato, ripe, local (<i>Lycopersicon esculentum</i>)	6	5.58±1.44	4.32±0.84	1.27±0.80		278±4.0	0.07±0.01	7.15±0.10		6.77±0.30	2.65±1.34							
D077	Zucchini, green (<i>Cucurbita pepo</i>)	2	17.83	2.80	15.03		47.81	49.65	2.32		55.30								
D078	Zucchini, yellow (<i>Cucurbita pepo</i>)	2	16.06	2.80	13.26		47.81	45.17	2.32		55.30								
E	FRUITS																		
E001	Apple, big (<i>Malus domestica</i>)	6	13.19±3.75	6.84±1.75	6.35±2.24		49.87±13.31	3.73±1.04	436±113		74.13±17.25	4.04±1.69							
E002	Apple, green (<i>Malus domestica</i>)	6	17.63±5.77	7.28±3.23	10.34±3.19		30.98±13.16	2.60±1.22	124±37.3		29.22±6.30	5.49±1.71							
E003	Apple, small (<i>Malus domestica</i>)	6	15.51±5.62	6.17±1.72	9.34±5.79		34.22±1.90	4.17±1.37	291±5.2		67.88±1.24	5.71±2.25							
E004	Apple, small, Kashmir (<i>Malus domestica</i>)	1	14.35	7.55	6.80		41.58	4.98	298		71.52	5.60							
E005	Apricot, dried (<i>Prunus armeniaca</i>)	6	113±25.0	20.04±0.65	90.54±2.27		119±5.6	8.67±0.53	422±3.3	156±4.4	5.42±0.68								
E006	Apricot, processed (<i>Prunus armeniaca</i>)	3	44.87±8.78	15.22±0.66	29.65±8.62		295±6.2	2.36±0.41	170±6.8	212±1.7	2.61±0.14								
E007	Avocado fruit (<i>Persea americana</i>)	1	2.78	2.02	0.76		0.12	111	1.02		111								
E008	Bael fruit (<i>Aegle marmelos</i>)	1	3.87	3.11	0.76		0.21	1.32	0.33										
E009	Banana, ripe, montham (<i>Musa x paradisiaca</i>)	1	2.80	1.33	1.47		290	0.67	2.32			5.12							
E010	Banana, ripe, poovam (<i>Musa x paradisiaca</i>)	2	2.38	2.05	0.34	0.77	285	0.90	2.87			4.05							
E011	Banana, ripe, red (<i>Musa x paradisiaca</i>)	1	4.15	3.97	0.18	1.69	296	1.92	4.15			4.15							
E012	Banana, ripe, robusta (<i>Musa x paradisiaca</i>)	6	3.24±1.62	2.13±1.24	1.11±0.56	0.91±0.77	293±6.9	1.83±0.68	3.54±1.34			3.20±0.88							

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E013	Black berry (<i>Rubus fruticosus</i>)	5	5.33±1.58	0.98±0.03	4.35±1.58	0.05±0.02	396±2.9	1.44±0.29	262±4.4	2.59±0.26		
E014	Cherries, red (<i>Prunus cerasus</i>)	4	6.15±1.36	4.44±0.67	1.71±1.36	0.28±0.06	18.84±1.08	0.33±0.06	289±5.0	5.53±0.42	30.22±5.50	3.25±1.45
E015	Currants, black (<i>Ribes nigrum</i>)	1	10.80	1.95	8.84		421	2.76	389			382
E016	Custard apple (<i>Annona squamosa</i>)	1	35.10	22.28	13.35		11.23	12.81	1.11		6.53	
E017	Dates, dry, pale brown (<i>Phoenix dactylifera</i>)	6	2.11±0.86	1.63±0.22	0.29±0.17		58.61±1.75	3.55±0.51	34.17±2.47	16.04±0.46	1.75±0.49	
E018	Dates, dry, dark brown (<i>Phoenix dactylifera</i>)	2	1.98	0.99	0.98		3.01	3.21	33.23	3.02	2.17	
E019	Dates, processed (<i>Phoenix dactylifera</i>)	2	1.96	1.56	0.40		4.98	7.62	29.08	5.84	3.99	
E020	Fig (<i>Ficus carica</i>)	6	46.71±10.69	5.26±0.71	41.69±11.14		216±2.7	1.51±0.27	23.51±2.59	134±2.3	132±3.5	
E021	Goosberry (<i>Emblica officinalis</i>)	5	7.96±0.91	5.40±0.74	2.81±1.28		751±8.5	1.65±0.28	7.58±1.17		44.33±6.23	14.06±1.11
E022	Grapes, seeded, round, black (<i>Vitis vinifera</i>)	4	26.12±10.48	12.96±4.29	10.53±7.96	0.03±0.01	3.12±0.98	1.14±0.45	288±3.6			280±5.3
E023	Grapes, seeded, round, green (<i>Vitis vinifera</i>)	5	25.74±6.18	18.79±2.51	7.09±4.59	0.03±0.02	3.36±0.17	1.47±0.54	286±4.1			276±20.9
E024	Grapes, seeded, round, red (<i>Vitis vinifera</i>)	5	23.92±5.49	12.77±5.37	11.15±1.27	0.06±0.01	1.82±1.39	1.57±0.22	291±33.7			272±75.9
E025	Grapes, seedless, oval, black (<i>Vitis vinifera</i>)	5	19.07±5.22	9.21±2.68	9.86±5.42	0.03±0.00	3.06±1.31	1.77±0.04	282±2.0			268±39.3
E026	Grapes, seedless, round, green (<i>Vitis vinifera</i>)	5	20.06±6.25	13.79±3.59	6.27±4.37	0.04±0.01	3.47±1.39	1.56±0.77	290±2.8			288±21.0
E027	Grapes, seedless, round, black (<i>Vitis vinifera</i>)	5	22.11±3.87	16.09±4.81	6.02±2.63	0.27±0.03	3.98±2.07	1.42±0.08	282±0.0			274±66.9
E028	Guava, white flesh (<i>Psidium guajava</i>)	5	13.05±3.69	0.32±0.28	10.61±6.06	0.62±0.16	384±176	1.83±0.80	77.02±1.63		2.83±0.48	1.39±0.26
E029	Guava, pink flesh (<i>Psidium guajava</i>)	5	9.57±2.04	0.64±0.12	7.44±4.10		87.07±1.32	0.46±0.04	25.94±4.84	24.71±4.04	15.47±1.36	1.43±0.13
E030	Jack fruit, ripe (<i>Artocarpus heterophyllus</i>)	5	8.45±3.18	5.49±2.17	2.96±2.40	2.57±0.85	35.40±1.14	11.19±2.03	219±5.1	347±1.4		
E031	Jambu fruit, ripe (<i>Syzygium cumini</i>)	2	9.60	7.24	2.37	0.16	72.26	0.42	23.69			
E032	Karonda fruit (<i>Carissa carandas</i>)	1	5.88	3.18	2.40		2.13	0.66		0.55	1.07	

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						CITAC	FUMAC	MALAC			SUCAC	TARAC							
E033	Lemon, juice (<i>Citrus limon</i>)	6				0.80±0.24	3490±7.1	0.04±0.03	243±5.0		338±73.8	2.36±0.21							
E034	Lime, sweet,pulp (<i>Citrus limetta</i>)	6	0.57±0.30	0.24±0.15	0.34±0.16		3416±46.1	0.48±0.34	125±5.8		418±5.8								
E035	Litchi (<i>Nephelium litchi</i>)	4	15.28±4.29	11.12±3.07	4.16±1.71		24.21±4.56	6.06±0.72	97.11±1.87	46.55±2.64	13.53±1.04								
E036	Mango, ripe, banganapalli (<i>Mangifera indica</i>)	6	7.94±2.05	4.72±1.64	3.23±1.71	0.29±0.05	446±9.1	0.43±0.22	76.71±1.12		2.95±0.74								
E037	Mango, ripe, gulabkhas (<i>Mangifera indica</i>)	2	7.70	4.34	3.36	0.59	432	0.70	75.46		2.34								
E038	Mango, ripe, himsagar (<i>Mangifera indica</i>)	3	8.09±2.53	6.94±2.12	1.71±1.40	0.30±0.06	448±0.6	0.58±0.22	73.58±2.98		3.15±0.69								
E039	Mango, ripe, kesar (<i>Mangifera indica</i>)	4	8.31±1.88	5.92±2.44	2.39±1.27	0.32±0.10	445±7.4	0.48±0.25	75.34±2.83		3.70±0.83								
E040	Mango, ripe, neelam (<i>Mangifera indica</i>)	2	8.46	6.90	1.56	0.49	430	0.58	75.86		3.56								
E041	Mango, ripe, paheri (<i>Mangifera indica</i>)	2	9.71	7.79	1.92	0.44	445	0.45	74.50		3.51								
E042	Mango, ripe, totapari (<i>Mangifera indica</i>)	1	11.50	7.23	4.28	0.45	442	0.81	75.48		2.68								
E043	Mangosteen (<i>Garcinia mangostana</i>)	1	8.44	5.32	3.07		127		22.07		1.07								
E044	Manila tamarind (<i>Pithecellobium dulce</i>)	1	4.32	0.98	3.35		10.52	0.34	135		79.06	6.50							
E045	Musk melon, orange flesh (<i>Cucumis melon</i>)	5	2.62±1.10	2.17±1.12	0.44±0.34	0.41±0.14	5.71±3.09	0.42±0.04	1.32±0.33		82.54±2.04	2.06±0.55							
E046	Musk melon, yellow flesh (<i>Cucumis melon</i>)	6	1.88±0.94	1.30±0.77	0.58±0.54	0.44±0.08	9.08±2.55	0.55±0.07	2.94±1.86		63.45±1.46	10.14±0.99							
E047	Orange, pulp (<i>Citrus aurantium</i>)	6	8.06±2.47	5.59±2.30	2.47±0.43		1281±6.4	0.28±0.04	122±37.1	25.51±2.15	45.04±1.69								
E048	Palm fruit, tender (<i>Borassus flabellifer</i>)	1	1.05	0.64	0.41		1.31	3.73			3.73								
E049	Papaya, ripe (<i>Carcia papaya</i>)	6	5.96±1.97	2.27±0.89	3.70±1.17	0.03±0.01	146±1.7	0.52±0.08	43.40±0.69	3.73±0.70	39.37±2.24								
E050	Peach (<i>Prunus communis</i>)	1	6.35	4.05	2.30		127	1.65	267.01										
E051	Pear (<i>Pyrus</i> sp.)	6	2.41±0.86	1.35±0.19	1.27±0.64	5.05±0.99	81±23.8	0.04±0.02	63.72±0.77	68.62±4.55	5.05±0.99								
E052	Phalsa (<i>Grewia asiatica</i>)	2	352	24.41	326	279	319	1.70	270		279								

Table AcidsOrganic:9

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Food code	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble							
			← mg →									
							CITAC	FUMAC	MALAC		SUCAC	TARAC
E053	Pineapple (<i>Ananas comosus</i>)	6	3.39±0.60	2.55±0.10	0.84±0.61	4.89±0.95	605±11.3	0.04±0.01	92.39±1.61	3.71±0.69	4.89±0.95	
E054	Plum (<i>Prunus domestica</i>)	3	0.74±0.13	0.19±0.13	0.70±0.13	87.64±7.75	62.32±11.93	0.83±0.21	96.33±14.39		87.64±7.75	
E055	Pomegranate, maroon seeds (<i>Punica granatum</i>)	6	253±53.6	178±52.9	75.75±13.77		1239±8.9	0.05±0.01	123±2.0	5.94±0.76		0.39±0.19
E056	Pummelo (<i>Citrus maxima</i>)	3	16.25±5.51	8.78±3.02	7.47±2.62		2013±0.0	0.84±0.00	74.78±0.00			
E057	Raisins, dried, black (<i>Vitis vinifera</i>)	6	10.71±1.36	5.24±0.75	5.47±1.00	5.89±1.11	24.92±1.60	1.13±0.20	61.00±9.45	63.62±8.66	5.89±1.11	
E058	Raisins, dried, golden (<i>Vitis vinifera</i>)	6	10.90±4.02	5.32±0.72	5.86±3.60	5.43±1.52	17.47±4.66	0.23±0.06	33.86±3.60	338±8.7	5.43±1.52	
E059	Rambutan (<i>Nephelium lappaceum</i>)	1	1.89	1.24	0.65		12.65	1.77				
E060	Sapota (<i>Achras sapota</i>)	6	8.97±2.09	6.68±2.67	2.28±0.75	440±3.7	355±4.2	3.26±1.10	17.94±1.68	44.00±0.88	440±3.7	
E061	Soursop (<i>Annona muricata</i>)	1	1.07	0.31	0.76		12.33					2.25
E062	Star fruit (<i>Averrhoa carambola</i>)	1	1.23	0.97	0.26	0.15	886	1.23			0.15	
E063	Strawberry (<i>Fragaria ananassa</i>)	6	2.04±0.44	1.50±0.37	0.52±0.32		0.11±0.11	0.19±0.07	2.55±1.35		0.82±0.14	
E064	Tamarind, pulp (<i>Tamarindus indicus</i>)	6	48.91±16.19	21.42±1.80	27.50±16.79		0.06±0.02	0.18±0.03	2.81±1.16		0.80±0.26	12.25±2.11
E065	Water melon, dark green (sugar baby) (<i>Citrullus vulgaris</i>)	6	0.72±0.40	0.47±0.35	0.25±0.18	0.92±0.04	47.35±2.04	14.58±0.90	7.27±0.46			
E066	Water melon, pale green (<i>Citrullus vulgaris</i>)	6	0.55±0.31	0.31±0.19	0.24±0.13	0.86±0.07	52.65±3.06	15.18±1.06	7.55±1.04			
E067	Wood Apple (<i>Limonia acidissima</i>)	3	55.80±8.41	7.91±0.35	47.88±8.06	0.26±0.03	257±6.4	0.65±0.11	13.83±1.00	4.86±1.00	18.49±0.93	2.90±0.47
E068	Zizyphus (<i>Zizyphus jujube</i>)	1	2.89	1.33	1.56		19.93	1.37	1.21	141	89.70	129

F ROOTS AND TUBERS												
F001	Beet root (<i>Beta vulgaris</i>)	6	71.37±13.10	30.15±1.79	41.21±12.20	45.43±3.34	134±16.2	0.02±0.01	0.33±0.18		0.29±0.12	
F002	Carrot, orange (<i>Dacus carota</i>)	6	17.45±6.32	12.63±5.24	4.82±4.30	37.50±1.80	222±11.2	5.62±0.33	4.83±1.42		5.58±1.00	
F003	Carrot, red (<i>Dacus carota</i>)	4	16.41±7.00	15.43±7.09	0.98±0.09	39.15±2.74	105±0.8		5.01±1.22		5.13±0.01	

Food Name			Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble							
← mg →												
			CITAC		FUMAC		MALAC		SUCAC		TARAC	
F004	Colocasia (Colocasia antiquorum)	6	48.73±0.41	26.60±9.45	22.13±9.27	0.44±0.12	12.17±1.04	7.03±0.87	3.69±1.05	42.18±1.61		
F005	Lotus root (Nelumbium nelumbo)	3	364±33.9	26.03±2.84	116±186	0.85±0.03	55.38±1.77	1.48±0.33	84.39±1.25		4.89±0.77	85.92±3.20
F006	Potato, brown skin, big (Solanum tuberosum)	6	12.24±2.48	9.71±0.27	2.64±0.16	10.97±1.46	55.38±1.77	1.48±0.33	84.10±6.07		4.89±0.77	
F007	Potato, brown skin, small (Solanum tuberosum)	1	13.63	10.71	2.92	15.63	56.81	1.82	94.52		7.11	
F008	Potato, red skin (Solanum tuberosum)	1	12.37	10.21	2.16	14.52	57.82	1.52	93.80		6.81	
F009	Radish, elongate, red skin (Raphanus sativus)	3	12.73±2.11	5.37±1.13	7.36±1.01	4.20±1.14	2.94±0.52	1.34±0.27	4.53±1.12		2.59±0.39	
F010	Radish, elongate, white skin (Raphanus sativus)	6	12.72±3.34	8.06±3.60	4.66±2.09	4.35±1.07	3.65±0.68	1.35±0.17	4.90±1.31		1.84±0.83	
F011	Radish, round, red skin (Raphanus sativus)	1	12.27	9.12	3.15	3.27	6.12	1.36	6.41		2.82	
F012	Radish, round, white skin (Raphanus sativus)	2	15.49	8.88	6.61	3.49	2.97	1.61	5.58		2.07	
F013	Sweet potato, brown skin (Ipomoees batatas)	4	14.39±4.70	6.56±1.55	6.27±4.47		15.66±0.41	1.92±0.64	127±3.2		652±8.2	6.42±0.76
F014	Sweet potato, pink skin (Ipomoees batatas)	3	14.14±3.58	9.04±2.43	5.10±1.16		25.69±1.12	0.23±0.01	147±4.8	0.08±0.01	334±8.0	17.95±0.61
F015	Tapioca (Manihot esculenta)	3	16.86±3.83	10.93±1.91	5.93±1.94	1.21±0.07	8.83±0.41	1.87±0.89	8.82±1.50	167±1.9	18.23±1.38	
F016	Water Chestnut (Eleocharis dulcis)	1	16.54	8.66	7.88		4.86	1.05	2.07	15.07	17.22	
F017	Yam, elephant (Amorphophallus campanulatus)	6	15.58±3.80	12.39±4.77	3.18±1.93	1.63±0.23	354±5.3	5.92±0.90	122±1.5	15.88±1.71	16.18±4.13	
F018	Yam, ordinary (Amorphophallus campanulatus)	4	13.99±4.21	11.21±4.28	2.78±0.26	4.55±1.51	556±2.7	1.62±0.50	50.48±5.36	13.37±4.92	18.56±0.71	
F019	Yam, wild (Dioscorea versicolor)	2	13.45	3.63	9.82		286	1.11	138	10.48	20.65	
G	CONDIMENTS AND SPICES-FRESH											
G001	Chillies, green-1 (Capsicum annum)	5	28.86±8.82	24.35±5.41	4.94±1.64	1.48±0.65	4.85±2.17	3.12±2.40	27.49±10.16		131±13.1	15.81±3.86
G002	Chillies, green-2 (Capsicum annum)	3	26.32±2.26	20.87±3.49	5.45±1.34	1.43±0.48	5.89±1.91	3.19±1.89	29.52±4.88		127±8.3	18.15±4.76

Food code	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid							
			Total	Soluble	Insoluble														
			← mg →																
						CITAC	FUMAC	MALAC			SUCAC	TARAC							
G003	Chillies, green-3 (<i>Capsicum annum</i>)	5	27.68±5.51	22.10±4.92	5.58±1.39	1.33±0.24	6.44±3.13	3.43±0.97	31.64±2.63		123±4.8	19.99±4.06							
G004	Chillies, green-4 (<i>Capsicum annum</i>)	3	23.85±7.46	20.50±7.84	3.35±3.07	1.92±0.78	4.43±1.98	3.52±0.78	33.22±2.15		118±5.2	16.24±2.74							
G005	Chillies, green-5 (<i>Capsicum annum</i>)	2	38.30±8.99	22.73±5.95	4.33±0.95	1.37±0.82	4.86±1.49	3.94±1.05	33.47±2.26		129±7.9	24.64±7.08							
G006	Chillies, green-6 (<i>Capsicum annum</i>)	1	30.12	24.31	5.82	0.73	1.13	3.28	30.79		121	20.91							
G007	Chillies, green-7 (<i>Capsicum annum</i>)	1	29.37	25.40	3.97	1.57	5.69	4.04	34.69		131	19.55							
G008	Chillies, green - all varieties (<i>Capsicum annum</i>)	6	28.54±8.17	22.66±6.46	4.92±1.68	1.43±0.57	5.13±2.46	3.42±1.46	30.91±5.46		126±9.0	18.88±4.33							
G009	Coriander leaves (<i>Coriandrum sativum</i>)	6	20.42±9.35	15.75±9.45	4.68±1.97	11.59±1.59	546±3.9	23.95±3.20	65.96±1.91	16.17±1.24									
G010	Curry leaves (<i>Murraya koenigii</i>)	6	154±84.6	10.93±0.38	143±84.4	0.73±0.06	65.27±1.25	1.62±0.46	7.45±1.11	13.66±1.11	37.87±2.28	7.21±1.28							
G011	Garlic, big clove (<i>Allium sativum</i>)	6	159±38.1	130±30.8	28.47±14.59		0.64±0.16	0.05±0.02			20.73±1.90								
G012	Garlic, small clove (<i>Allium sativum</i>)	3	143±56.6	115±51.2	27.98±9.57		1.15±0.53	0.07±0.02			23.11±2.29								
G013	Garlic, single clove, Kashmir (<i>Allium sativum</i>)	1	127	119	7.33		0.12				20.11								
G014	Ginger, fresh (<i>Zinziber officinale</i>)	6	259±73.9	18.26±1.86	241±75.5		5.95±0.74	1.43±0.38			2.16±0.39								
G015	Mango ginger (<i>Curcuma amada</i>)	3	307±127	228±7.8	79.22±5.81		53.42±1.94	0.40±0.04	33.20±1.80	3.13±1.06	3.80±1.77								
G016	Mint leaves (<i>Mentha spicata</i>)	4	97.07±12.11	8.30±5.87	88.76±11.05		25.86±1.24	3.83±0.21	14.80±0.79	26.33±0.55	27.22±0.52								
G017	Onion, big (<i>Allium cepa</i>)	6	4.03±1.85	3.42±0.35	0.61±2.10	43.05±3.98	33.89±1.32	0.63±0.20	392±4.5		105±16.3	12.21±1.79							
G018	Onion, small (<i>Allium cepa</i>)	5	11.11±2.04	9.69±1.69	1.27±0.27		76.07±6.07	0.04±0.01	117±5.5	165±1.5	135±9.8								
G	CONDIMENTS AND SPICES-DRY																		
G019	Asafoetida (<i>Ferula assa-foetida</i>)	6	23.82±7.75	3.27±0.11	20.55±7.82	1.66±0.30	6.35±0.86	0.02±0.01	0.46±0.10	4.72±0.72		1.64±0.48							
G020	Cardamom, green (<i>Elettaria cardamomum</i>)	6	1961±174	1191±54.8	770±148		73.83±0.87	0.85±0.06	22.21±1.41	4.85±0.54	5.41±0.79								
G021	Cardamom, black (<i>Elettaria cardamomum</i>)	4	2472±683	1471±619	1001±170		156±2.1	0.81±0.10	36.77±1.54	4.28±0.04	6.11±0.58								

Food No	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid							
			Total	Soluble	Insoluble														
			← mg →																
						CITAC	FUMAC	MALAC		SUCAC	TARAC								
G022	Chillies, red (<i>Capsicum annum</i>)	6	87.17±15.16	65.69±1.85	21.48±15.48		0.62±0.11	13.67±1.36	68.38±4.48		22.00±5.86								
G023	Cloves (<i>Syzygium aromaticum</i>)	6	1845±73.8	353±24.6	1492±55.5	1.54±0.38	427±5.5	0.46±0.05	177±3.3			20.28±1.30							
G024	Coriander seeds (<i>Coriandrum sativum</i>)	6	809±90.9	118±9.6	692±90.8	1.41±0.19	53.84±1.47	6.53±1.43	13.51±2.08										
G025	Cumin seeds (<i>Cuminum cyminum</i>)	6	817±117	40.43±2.45	777±117	2.43±0.97	47.00±1.25	2.38±0.98	40.76±6.76										
G026	Fenugreek seeds (<i>Trigonella foenum graecum</i>)	6	31.75±8.12	10.55±0.64	21.20±7.89	0.24±0.04	4.99±1.43			2.47±0.63		2.19±0.61							
G027	Mace (<i>Myristica fragrans</i>)	6	28.22±10.42	0.28±0.06	27.94±10.43		98.68±2.00	2.36±0.32	173±2.4	345±7.5									
G028	Nutmeg (<i>Myristica fragrans</i>)	6	194±87.7	48.20±1.59	146±87.5		59.31±2.23	55.90±6.21	15.70±1.69	231±8.9	16.52±1.22								
G029	Omum (<i>Trachyspermum ammi</i>)	6	1020±30.7	34.19±2.01	985±30.8		47.73±2.03		199±3.2	26.16±1.21	5.55±0.93								
G030	Pippali (<i>Piper longum</i>)	6	367±57.9	21.22±1.17	346±58.3	0.16±0.01	37.97±0.98	0.05±0.02	0.52±0.09		121±7.0	154±2.8							
G031	Pepper, black (<i>Piper nigrum</i>)	6	431±63.7	33.74±8.11	398±65.2	4.39±0.83	136±1.5	1.65±0.14	13.93±1.08		119±11.7	1.92±0.44							
G032	Poppy seeds (<i>Papaver somniferum</i>)	6	1631±54.9	32.08±1.42	1599±54.0	3.92±0.31	21.79±1.60		24.18±0.60	557±4.7	24.40±1.45								
G033	Turmeric powder (<i>Curcuma domestica</i>)	6	1531±146	1221±77.5	310±84.1		2.63±0.36	0.17±0.05	40.62±5.02		33.24±2.25								
H	NUTS AND OIL SEEDS																		
H001	Almond (<i>Prunus amygdalus</i>)	6	344±55.7	110±4.9	235±54.2		11.88±0.66	0.29±0.07	97.52±0.93		1.31±0.15	1.18±0.29							
H002	Arecanut, dried, brown (<i>Areca catechu</i>)	6					7.93±0.45	0.14±0.02	47.16±1.64	75.06±0.57	1.89±0.13								
H003	Arecanut, dried, red color (<i>Areca catechu</i>)	3					8.76±0.35	0.20±0.05	45.71±2.49	74.62±2.16	2.03±0.60								
H004	Arecanut, fresh (<i>Areca catechu</i>)	2					12.56	24.80			26.62								
H005	Cashew nut (<i>Anacardium occidentale</i>)	6	189±11.8	149±11.4	39.52±17.31		7.73±0.46	34.66±1.06			27.73±2.55								
H006	Coconut, kernal, dry (<i>Cocos nucifera</i>)	6	6.83±1.21	3.10±0.04	3.73±1.20		117±1.4	0.41±0.10	1.83±0.64	13.84±1.58	10.17±0.48	6.38±0.81							

Table 9. Organic Acids

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Food Code	Food Name	No. of Regions	Oxalate			Cis-Aconitic Acid	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid							
			Total	Soluble	Insoluble														
			← mg →																
						CITAC	FUMAC	MALAC		SUCAC	TARAC								
H007	Coconut, kernel, fresh (<i>Cocos nucifera</i>)	6	3.44±1.52	1.68±0.33	1.76±1.33	1.71±0.75	1.82±0.20		15.15±0.49		119±1.4								
H008	Garden cress, seeds (<i>Lepidium sativum</i>)	5	60.04±5.04	33.30±5.55	26.74±2.45		2.08±1.11	1.73±0.25	94.12±1.04		25.42±2.35	0.84±0.09							
H009	Gingelly seeds, black (<i>Sesamum indicum</i>)	6	2156±199	78.58±5.76	2078±200	0.22±0.03	4.56±2.11	1.77±0.32		10.45±0.15	104±2.5	3.84±0.89							
H010	Gingelly seeds, brown (<i>Sesamum indicum</i>)	4	2030±794	83.13±4.87	1947±792	0.64±0.09	54.18±16.15	3.27±0.46	34.68±1.45	11.90±3.25	10.72±1.12	139±12.7							
H011	Gingelly seeds, white (<i>Sesamum indicum</i>)	5	2004±123	73.51±3.34	1931±122	0.77±0.06	56.42±2.93	0.42±0.04	0.12±0.01			93.82±1.11							
H012	Ground nut (<i>Arachis hypogea</i>)	6	60.98±11.01	39.67±3.31	21.31±10.21		61.34±11.36	1.05±0.38	6.21±0.77	12.48±0.64	9.70±1.98	154±7.8							
H013	Mustard seeds (<i>Brassica juncea</i>)	6	6.92±1.59	5.28±0.21	1.64±1.65		67.49±13.38	0.39±0.04	16.04±0.64	14.12±0.72	5.95±0.53	149±2.2							
H014	Linseeds (<i>Linum usitatissimum</i>)	6	5.85±1.00	1.91±0.34	3.95±1.09		9.73±0.53	7.06±1.03	11.46±2.65		1.87±0.19								
H015	Niger seeds, black (<i>Guizotia abyssinica</i>)	4	1913±123	93.94±12.22	1819±134	0.35±0.08	102±3.7		41.54±2.58		41.73±2.64	371±2.9							
H016	Niger seeds, gray (<i>Guizotia abyssinica</i>)	5	1544±224	90.22±3.55	1453±222	0.74±0.03	343±4.5		13.80±1.99										
H017	Pine seed (<i>Pinus gerardiana</i>)	5	159±19.3	94.00±4.91	64.99±15.30		15.26±0.52	23.06±0.60			34.32±1.13								
H018	Pistachio nuts (<i>Pistacia vera</i>)	6	46.42±7.95	22.88±2.45	23.54±7.90		3.24±0.34	1.22±0.21	139±3.6	53.79±2.27	6.12±0.37	4.21±1.04							
H019	Safflower seeds (<i>Carthamus tinctorius</i>)	5	215±27.2	92.57±6.98	122±33.5		1.95±0.53	1.94±0.93	133±7.0	25.63±0.79	9.02±0.62	5.67±0.64							
H020	Sunflower seeds (<i>Helianthus annuus</i>)	5	23.70±5.39	6.13±0.72	17.57±5.94		33.42±1.26	1.46±0.23	7.47±1.05		0.60±0.05	57.95±9.16							
H021	Walnut (<i>Juglans regia</i>)	6	37.03±9.41	27.31±4.89	9.72±5.45	3.33±0.85	15.32±0.80		24.59±0.82		279±3.7	81.29±11.73							
I	SUGARS																		
I001	Jaggery, cane (<i>Saccharum officinarum</i>)	6					5.24±1.14	3.31±0.70	36.91±1.90	60.69±2.73	46.62±2.59	3.21±0.98							
I002	Sugarcane, juice (<i>Saccharum officinarum</i>)	6					3.55±1.01		2.04±0.49	132±6.2	459±5.4								

Foodcode	Food Name		Oxalate			Cis-Aconitic	Citric Acid	Fumaric Acid	Mallic Acid	Quinic Acid	Succinic Acid	Tartaric Acid
			Total	Soluble	Insoluble	Acid						
←						mg	→					
</												