Table 4. CAROTENOIDS

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

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
A	**CEREALS AND MILLETS**									
A001	**Amaranth seed, black** *(Amaranthus cruentus)*	1	10.25							121
A002	**Amaranth seed, pale brown** *(Amaranthus cruentus)*	6	4.11±1.16							59.68±3.09
A003	**Bajra** *(Pennisetum typhoideum)*	6	29.69±8.72	9.30±1.23					28.23±9.42	293±55.7
A004	**Barley** *(Hordeum vulgare)*	6	5.39±2.77	1.90±0.35						69.87±28.88
A005	**Jowar** *(Sorghum vulgare)*	6	9.08±1.77	7.48±2.41					8.29±1.30	212±48.9
A006	**Maize, dry** *(Zea mays)*	6	186±19.4	42.4±15.7		110±10.1			186±19.2	893±154
A007	**Maize, tender, local** *(Zea mays)*	6	110±28.1	26.53±3.59		37.26±4.60			36.27±11.33	1428±225
A008	**Maize, tender, sweet** *(Zea mays)*	4	108±25.0	28.19±4.22		58.41±4.60			47.01±6.23	1035±154
A009	**Quinoa** *(Chenopodium quinoa)*	1	11.88	10.05					5.12	153
A010	**Ragi** *(Eleusine coracana)*	5	25.53±5.82	1.45±0.23					1.53±0.25	154±25.6
A011	**Rice flakes** *(Oryza sativa)*	6	1.46±0.25							33.61±4.26
A012	**Rice puffed** *(Oryza sativa)*	6	1.51±0.31							50.46±4.52
A013	**Rice, raw, brown** *(Oryza sativa)*	6	13.15±4.03							159±13.9
A014	**Rice, parboiled, milled** *(Oryza sativa)*	6	1.46±0.72							46.90±8.29
A015	**Rice, raw, milled** *(Oryza sativa)*	6	1.49±0.46							16.87±5.61
A016	**Samai** *(Panicum miliare)*	6	7.82±1.76	5.24±1.66					1.91±0.89	120±9.0
A017	**Varagu** *(Setaria italica)*	5	59.40±7.01	3.91±1.08					1.41±0.29	272±25.1
A018	**Wheat flour, refined** *(Triticum aestivum)*	6	24.41±9.21	1.30±0.72					1.97±0.80	270±69.0

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
A019	**Wheat flour, atta** *(Triticum aestivum)*	6	42.12±11.27	1.31±0.69					2.67±1.29	284±31.9
A020	**Wheat, whole** *(Triticum aestivum)*	6	52.56±5.67	1.47±0.68					3.03±2.13	287±40.5
A021	**Wheat, bulgur** *(Triticum aestivum)*	6	47.67±13.64	1.06±0.80					2.55±0.85	191±15.1
A022	**Wheat, semolina** *(Triticum aestivum)*	6	29.94±7.39	1.13±0.66					1.60±0.59	276±29.9
A023	**Wheat, vermicelli** *(Triticum aestivum)*	6	19.31±5.80	0.89±0.57					1.68±0.31	39.54±5.33
A024	**Wheat, vermicelli, roasted** *(Triticum aestivum)*	6	12.89±4.12	1.08±0.42					0.92±0.58	21.33±5.71
B	**GRAIN LEGUMES**									
B001	**Bengal gram, dal** *(Cicer arietinum)*	6	314±82.4	1.05±0.44					165±22.8	1018±16.9
B002	**Bengal gram, whole** *(Cicer arietinum)*	6	385±39.4	24.74±12.0					172±21.0	999±240
B003	**Black gram, dal** *(Phaseolus mungo)*	6	83.87±22.87						10.11±2.10	279±54.8
B004	**Black gram, whole** *(Phaseolus mungo)*	6	95.42±2.13						12.80±0.50	463±34.2
B005	**Cowpea, brown** *(Vigna catjang)*	6	83.34±26.30						7.08±1.58	218±16.8
B006	**Cowpea, white** *(Vigna catjang)*	1	78.52						8.21	250
B007	**Field bean, black** *(Phaseolus vulgaris)*	1	48.99							207
B008	**Field bean, brown** *(Phaseolus vulgaris)*	1	53.18							254
B009	**Field bean, white** *(Phaseolus vulgaris)*	5	58.47±4.55							256±33.2
B010	**Green gram, dal** *(Phaseolus aureus)*	6	113±22.6	2.98±1.73					122±2.7	619±61.9
B011	**Green gram, whole** (*Phaseolus aureus)*	6	187±20.7	5.63±2.50					137±33.5	889±106
B012	**Horse gram, whole** *(Dolicus biflorus)*	6	67.26±9.84	2.92±1.81					58.57±9.13	267±42.8
B013	**Lentil dal** *(Lens culinaris)*	6	5.92±3.05						6.34±0.82	812±93.3

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
B014	**Lentil whole, brown** *(Lens culinaris)*	6	6.85±2.24						10.29±1.09	924±89.0
B015	**Lentil whole, yellowish** *(Lens culinaris)*	2	7.76						12.64	939
B016	**Moth bean** *(Vigna aconitifolia)*	6	148±21.2						3.57±1.03	622±72.9
B017	**Peas, dry** *(Pisum sativum)*	6	474±35.6	23.41±7.12					65.71±8.07	933±94.1
B018	**Rajmah, black** *(Phaseolus vulgaris)*	2	6.38						1.95	86.67
B019	**Rajmah, brown** *(Phaseolus vulgaris)*	6	7.18±1.82						2.16±0.50	90.26±14.96
B020	**Rajmah, red** *(Phaseolus vulgaris)*	3	6.76±2.55						1.60±0.24	103±29.2
B021	**Red gram, dal** *(Cajanus cajan)*	6	11.69±1.31						127±26.3	484±90.6
B022	**Red gram, whole** *(Cajanus cajan)*	6	25.25±6.15						149±21.0	579±44.8
B023	**Ricebean** (*Vigna umbellata*)	1	6.88							29.02
B024	**Soya bean, brown** *(Glycine max)*	6	35.47±13.69						3.50±1.01	262±22.4
B025	**Soya bean, white** *(Glycine max)*	1	28.50						2.82	282
C	**GREEN LEAFY VEGETABLES**									
C001	**Agathi leaves** *(Sesbania grandiflora)*	1	12941	559					12582	36087
C002	**Amaranth leaves, green** *(Amaranthus gangeticus)*	6	8397±1005	164±32.3					8553±1813	20473±1060
C003	**Amaranth leaves, red** *(Amaranthus gangeticus)*	1	7439	118					8457	21449
C004	**Amaranth leaves, red and green** *(Amaranthus gangeticus)*	4	7390±1361	148±30.0					8464±1753	20181±1961
C005	**Amaranth spinosus, leaves, green** *(Amaranthus spinosus)*	4	1861±203	126±16.3					1594±315	4174±815
C006	**Amaranth spinosus, leaves, red and green** *(Amaranthus spinosus)*	2	1748	160					1487	4540
C007	**Basella leaves** *(Basella alba)*	2	2962	241					2473	5824

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
C008	**Bathua leaves** *(Chenopodium album)*	2	1795	132					1075	3469
C009	**Beet greens** *(Beta vulgaris)*	6	1495±329.1	146±53.2					1703±146	3340.97±143.39
C010	**Betel leaves, big (kolkata)** *(Piper betle)*	6	4253±1026	60.31±18.37				191±39.0	4186±524	13735±1594
C011	**Betel leaves, small** *(Piper betle)*	4	5783±460	79.80±13.41				427±64.0	4676±622	16563±1292
C012	**Brussels sprouts** *(Brassica oleracea* var. *gemmifera)*	1	1653	35.64					360	2564
C013	**Cabbage, Chinese** *(Brassica rupa)*	1	58.00	1.50					5.50	103
C014	**Cabbage, collard greens** *(Brassica oleracea* var. *viridis)*	1	143	2.68					104	358
C015	**Cabbage, green** *(Brassica oleracea* var. *capitata* f. *alba)*	6	3.98±1.34						20.48±2.21	273±7.3
C016	**Cabbage, violet** *(Brassica oleracea* var. *capitata* f. *rubra)*	2	44.50	2.20					31.17	339
C017	**Cauliflower leaves** *(Brassica oleracea* var. *botrytis)*	6	152±21.2	1.97±0.39					146±15.6	1742±9.4
C018	**Colocasia leaves, green** *(Colocasia anti-quorum)*	6	5222±1363	136±28.9					5758±1836	26820±3413
C019	**Drumstick leaves** *(Moringa oleifera)*	3	15580±3760	235±19.4					17542±1425	38765±7172
C020	**Fenugreek leaves** *(Trigonella foenum graecum)*	5	2275±754	28.28±9.53					9245±974	12755±1221
C021	**Garden cress** *(Lepidium sativum)*	2	1354	16.63					88.72	5048
C022	**Gogu leaves, green** *(Hibiscus cannabinus)*	4	5276±985	18.72±10.90					5285±856	16088±3497
C023	**Gogu leaves, red** *(Hibiscus cannabinus)*	1	4782	20.50					5143	15934
C024	**Knol-Khol, leaves** *(Brassica oleracea* var. *gongylodes)*	2	15.62	2.77					12.04	154
C025	**Lettuce** *(Lactuca sativa)*	3	1858±322	5.64±2.79					1285±167	7532±1363
C026	**Mustard leaves** *(Brassica juncea)*	3	2939±562	8.13±3.96					2619±372	6397±1014
C027	**Pak Choi leaves** *(Brassica rapa* var. *Chinensis)*	1	2655	5.50					2450	5111
C028	**Parsley** *(Petroselinum crispum)*	3	3574±455	11.92±7.28					2710±349	6558±578

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			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
C029	**Ponnaganni** *(Alternanthera sessilis)*	2	5201	105					5288	24206
C030	**Pumpkin leaves, tender** *(Cucurbita maxima)*	6	6139±982	45.28±17.23					1455±146	8247±720
C031	**Radish leaves** *(Raphanus sativus)*	6	1741±190	22.71±10.72					2591±572	9339±854
C032	**Rumex leaves** *(Rumex patientia)*	2	2370	18.98					2754	8290
C033	**Spinach** *(Spinacia oleracea)*	6	3850±926	17.23±5.40					2605±521	9553±1491
C034	**Tamarind leaves, tender** (*Tamarindus indica)*	3	58.83±10.16	1.88±0.26					168±21.2	4002±389
D	**OTHER VEGETABLES**									
D001	**Ash gourd** *(Benincasa hispida)*	6	18.29±4.23	5.76±2.93						66.67±10.19
D002	**Bamboo shoot, tender** *(Bambusa vulgaris)*	1	2.50							11.60
D003	**Bean scarlet, tender** *(Phaseolus coccineus)*	5	98.51±21.39	2.67±0.33					35.52±3.88	1055±156
D004	**Bitter gourd, jagged, teeth ridges, elongate** *(Momordica charantia)*	6	282±101	5.83±2.55					122±10.9	717±179
D005	**Bitter gourd, jagged, teeth ridges, short** *(Momordica charantia)*	4	244±82.0	6.96±2.53					126±7.10	505±86
D006	**Bitter gourd, jagged, smooth ridges, elongate** *(Momordica charantia)*	1	313	7.20					130	481
D007	**Bottle gourd, elongate, pale green** *(Lagenaria vulgaris)*	6	28.88±8.19						44.05±11.68	95.12±13.56
D008	**Bottle gourd, round, pale green** *(Lagenaria vulgaris)*	5	29.64±2.98	8.60±2.23					47.13±3.49	92.56±17.23
D009	**Bottle gourd, elongate, dark green** *(Lagenaria vulgaris)*	1	28.98	2.50					44.82	97.02
D010	**Brinjal-1** *(Solanum melongena)*	1	126	1.90					126	186
D011	**Brinjal-2** *(Solanum melongena)*	1	130	2.80					130	167
D012	**Brinjal-3** *(Solanum melongena)*	2	131	3.29					138	155
D013	**Brinjal-4** *(Solanum melongena)*	4	142±18.5	3.90±1.39					140±15.0	138±34.2

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			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
D014	**Brinjal-5** *(Solanum melongena)*	3	122±10.1	2.78±1.52					123±12.7	136±3.9
D015	**Brinjal-6** *(Solanum melongena)*	2	126	4.16					129	168
D016	**Brinjal-7** *(Solanum melongena)*	1	155	4.50					155	166
D017	**Brinjal-8** *(Solanum melongena)*	3	162±19.2	3.77±1.89					162±16.1	190±12.3
D018	**Brinjal-9** *(Solanum melongena)*	2	160	2.89					158	232
D019	**Brinjal-10** *(Solanum melongena)*	2	161	2.39					161	162
D020	**Brinjal-11** *(Solanum melongena)*	6	152±11.5	2.02±0.63					162±22.2	227±28.0
D021	**Brinjal-12** *(Solanum melongena)*	2	147	2.89					144	217
D022	**Brinjal-13** *(Solanum melongena)*	1	138	3.90					138	116
D023	**Brinjal-14** *(Solanum melongena)*	3	137±12.2	4.12±2.23					134±21.4	493±142
D024	**Brinjal-15** *(Solanum melongena)*	4	169±24.2	4.35±1.76					162±41.9	346±84.4
D025	**Brinjal-16** *(Solanum melongena)*	1	155	1.80					155	364
D026	**Brinjal-17** *(Solanum melongena)*	1	146	1.90					146	564
D027	**Brinjal-18** *(Solanum melongena)*	3	128±15.1	2.88±1.48					130±11.4	364±94.2
D028	**Brinjal-19** *(Solanum melongena)*	3	119±14.7	3.68±1.70					119±16.8	552±90.6
D029	**Brinjal-20** *(Solanum melongena)*	5	139±12.6	4.08±1.72					139±18.5	651±37.7
D030	**Brinjal-21** *(Solanum melongena)*	2	156	4.44					155	670
D031	**Brinjal - all varieties** *(Solanum melongena)*	6	144±18.7	3.21±1.55					146±24.0	309±188
D032	**Broad beans** *(Vicia faba)*	3	106±33.5	24.25±8.69					6.38±0.62	574±5.14
D033	**Capsicum, green** *(Capsicum annuum)*	6	164±43.9	21.41±8.02					328±61.7	2511±776
D034	**Capsicum, red** *(Capsicum annuum)*	4	165±33.2	18.28±6.66					246±47.2	3047±785
D035	**Capsicum, yellow** *(Capsicum annuum)*	4	280±57.2	17.95±5.26					166±15.0	2717±203

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D036	**Cauliflower** *(Brassica oleracea)*	6	31.3±7.69	5.77±2.61					1.59±0.66	50.48±4.22
D037	**Celery stalk** *(Apium graveolens)*	3	161±15.4	2.61±1.56					465±57.3	2439±280
D038	**Cho-cho-marrow** *(Sechium edule)*	4	8.56±1.67	1.80±1.29					1.57±0.31	24.53±9.12
D039	**Cluster beans** *(Cyamopsis tetragonobola)*	6	538±164	21.49±8.50					241±32.8	1192±250
D040	**Colocasia, stem, black** *(Colocasia antiquorum)*	1	97.12	5.30					4.97	631
D041	**Colocasia, stem, green** *(Colocasia antiquorum)*	5	99.6±19.5	1.96±0.90					2.30±1.25	597±153
D042	**Corn, Baby** *(Zea mays)*	6	5.79±3.45	1.90±0.84					1.52±0.33	72.89±13.79
D043	**Cucumber, green, elongate** *(Cucumis sativus)*	6	2.22±1.12						5.33±0.93	171±46.8
D044	**Cucumber, green, short** *(Cucumis sativus)*	6	4.86±1.82						4.80±1.45	172±44.8
D045	**Cucumber, orange, round** *(Cucumis sativus)*	2	3.19						5.55	134
D046	**Drumstick** *(Moringa oleifera)*	6	145±18.8	5.52±3.79					17.28±1.85	350±62.0
D047	**Field beans, tender, broad** *(Vicia faba)*	2	467	21.54				83.48	555	1738
D048	**Field beans, tender, lean** *(Vicia faba)*	6	297±55.7	2.79±2.18				74.32±6.96	556±6.0	1837±86.5
D049	**French beans, country** *(Phaseolus vulgaris)*	5	235±71.8	21.21±10.10				3.57±0.71	413±10.4	1501±171
D050	**French beans, hybrid** *(Phaseolus vulgaris)*	2	228	13.35				3.18	388	1449
D051	**Jack fruit, raw** *(Artocarpus heterophyllus)*	5	4.86±2.54	2.92±1.65						17.66±1.17
D052	**Jack fruit, seed, mature** *(Artocarpus heterophyllus)*	5	2.13±0.82	1.56±1.11						19.63±2.17
D053	**Knol - Khol** *(Brassica oleracea)*	6	2.51±0.83	1.55±1.24						28.82±2.36
D054	**Kovai, big** *(Coccinia cordifolia)*	6	170±14.3	5.74±2.43					134±9.8	498±66.2
D055	**Kovai, small** *(Coccinia cordifolia)*	1	157	4.50					147	586
D056	**Ladies finger** *(Abelmoschus esculentus)*	6	798±83.0	3.53±1.91					69.10±10.41	1223±118

Table 4. Carotenoids

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
D057	**Mango, green, raw** *(Mangifera indica)*	6	122±13.7	1.52±1.18		11.94±0.73			72.37±6.60	517±53.6
D058	**Onion, stalk** *(Allium cepa)*	6	575±175	2.43±0.68					700±2.6	3488±11.1
D059	**Papaya, raw** *(Carica papaya)*	6	266±55.8	7.88±0.32		76.80±18.04			164±60.8	548±67.5
D060	**Parwar** *(Trichosanthes dioica)*	6	322±102	10.77±3.25					13.10±1.50	965±15.0
D061	**Peas, fresh** *(Pisum sativum)*	6	68.6±19.1	11.40±2.54					121±12.5	1286±259
D062	**Plantain, flower** *(Musa x paradisiaca)*	6	75.7±5.0	5.90±2.93					35.36±7.72	149±19.5
D063	**Plantain, green** *(Musa x paradisiaca)*	6	28.9±9.85	3.45±1.94					3.01±1.65	224±29.8
D064	**Plantain, stem** *(Musa x paradisiaca)*	6	26.3±6.75	3.68±1.72					2.39±1.25	69.31±6.73
D065	**Pumpkin, green, cylindrical** *(Cucurbita maxima)*	1	394	26.60				63.91	363	1319
D066	**Pumpkin, orange, round** *(Cucurbita maxima)*	6	161±17.5	34.91±4.73				90.74±12.40	149±16.8	1449±167
D067	**Red gram, tender, fresh** *(Cajanus cajan)*	1	190						165	495
D068	**Ridge gourd** *(Luffa acutangula)*	6	129±20.5	19.50±3.17					348±31.4	838±101
D069	**Ridge gourd, smooth skin** *(Luffa acutangula)*	3	127±25.8	18.83±2.68					349±23.4	851±84.6
D070	**Snake gourd, long, pale green** *(Trichosanthes anguina)*	6	38.9±8.68	3.67±2.30					61.29±2.40	190±18.8
D071	**Snake gourd, long, dark green** *(Trichosanthes anguina)*	2	39.60	5.41					61.64	188
D072	**Snake gourd, short** *(Trichosanthes anguina)*	1	32.75	4.50					62.84	188
D073	**Tinda, tender** *(Praecitrullus fistulosus)*	6	8.19±2.71	2.22±1.62					7.96±1.10	49.81±2.51
D074	**Tomato, green** *(Lycopersicon esculentum)*	6	38.9±8.90	2.48±1.34	35.97±13.4		5.80±0.79		32.33±3.91	546±59.3
D075	**Tomato, ripe, hybrid** *(Lycopersicon esculentum)*	6	1568±530	10.96±2.17	2481±495		7.32±1.16		1513±146	5826±828
D076	**Tomato, ripe, local** *(Lycopersicon esculentum)*	6	965±167	17.52±6.44	1736±278		9.37±0.53		905±58.4	4656±636
D077	**Zucchini, green** *(Cucurbita pepo)*	2	87.86	16.23					85.79	963

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
D078	**Zucchini, yellow** *(Cucurbita pepo)*	2	294	25.60					69.90	1177
E	**FRUITS**									
E001	**Apple, big** *(Malus domestica)*	6	36.4±5.19	1.90±0.95					2.41±2.13	229±98.5
E002	**Apple, green** *(Malus domestica)*	6	40.2±18.8	1.91±0.77					2.20±0.93	196±47.5
E003	**Apple, small** *(Malus domestica)*	6	38.8±2.95	1.71±0.48					2.08±0.82	198±25.6
E004	**Apple, small, Kashmir** *(Malus domestica)*	1	46.26	1.98					2.11	344
E005	**Apricot, dried** *(Prunus armeniaca)*	6	4.98±2.79	2.33±1.08					1806±106	4313±123
E006	**Apricot, processed** *(Prunus armeniaca)*	3	3.07±1.49	1.98±0.62					1372±198	3357±748
E007	**Avocado fruit** *(Persea americana)*	1	25.13	2.50					12.00	321
E008	**Bael fruit** *(Aegle marmelos)*	1	36.12	2.20					2.50	172
E009	**Banana, ripe, montham** *(Musa x paradisiaca)*	1	47.32	1.90				3.57	53.06	260
E010	**Banana, ripe, poovam** *(Musa x paradisiaca)*	2	34.67	2.75				1.71	57.33	252
E011	**Banana, ripe, red** *(Musa x paradisiaca)*	1	47.08	2.50				2.12	51.52	261
E012	**Banana, ripe, robusta** *(Musa x paradisiaca)*	6	26.9±6.18	2.33±0.87				3.57±1.67	56.78±11.56	314±64.8
E013	**Black berry** *(Rubus fruticosus)*	5	105±17.5	2.37±0.98					52.32±2.65	166±2.4
E014	**Cherries, red** *(Prunus cerasus)*	4	92.9±12.4	5.69±2.12					40.78±1.15	259±36.4
E015	**Currants, black** *(Ribes nigrum)*	1	242	12.90					62.48	453
E016	**Custard apple** *(Annona squamosa)*	1	12.45	1.80						142
E017	**Dates, dry, pale brown** *(Phoenix dactylifera)*	6	281±77.8	8.95±1.88					2700±345	3483±551
E018	**Dates, dry, dark brown** *(Phoenix dactylifera)*	2	285	4.83					2705	3280
E019	**Dates, processed** *(Phoenix dactylifera)*	2	305	86.34					2781	3288

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
E020	**Fig** *(Ficus carica)*	6	19.0±2.27	2.01±0.64					2.40±0.59	454±51.3
E021	**Goosberry** *(Emblica officinalis)*	5	38.7±9.78	2.86±1.61					1.58±0.09	62.01±6.45
E022	**Grapes, seeded, round, black** *(Vitis vinifera)*	4	27.8±8.85	3.59±2.20					29.36±8.37	213±29.4
E023	**Grapes, seeded, round, green** *(Vitis vinifera)*	5	31.3±8.77	4.06±1.60					30.77±11.10	208±28.8
E024	**Grapes, seeded, round, red** *(Vitis vinifera)*	5	17.2±3.04	7.58±2.28					19.94±1.29	314±99.9
E025	**Grapes, seedless, oval, black** *(Vitis vinifera)*	5	19.4±3.07	8.14±1.73					19.73±1.76	321±50.6
E026	**Grapes, seedless, round, green** *(Vitis vinifera)*	5	25.8±7.90	6.82±3.77					25.46±6.66	216±31.3
E027	**Grapes, seedless, round, black** *(Vitis vinifera)*	5	16.1±2.90	7.95±1.73					20.58±2.36	232±27.9
E028	**Guava, white flesh** *(Psidium guajava)*	5	19.7±4.59	5.92±3.06					298±32.8	996±108
E029	**Guava, pink flesh** *(Psidium guajava)*	5	90.3±11.5	8.94±2.21	2843±340				267±88.2	4078±477
E030	**Jack fruit, ripe** *(Artocarpus heterophyllus)*	5	19.3±6.91	2.42±1.27					23.53±1.24	59.61±4.90
E031	**Jambu fruit, ripe** *(Syzygium cumini)*	2	18.49	5.68					1.55	66.50
E032	**Karonda fruit** *(Carissa carandas)*	1	6.12	1.14					15.64	55.89
E033	**Lemon, juice** *(Citrus limon)*	6	9.68±2.22	1.72±0.50					2.62±0.34	85.99±3.36
E034	**Lime, sweet,pulp** *(Citrus limetta)*	6	13.2±3.54	1.89±0.44					2.54±0.30	85.13±10.71
E035	**Litchi** *(Nephelium litchi)*	4	27.33±9.81	1.61±0.62					1.47±0.21	129±15.1
E036	**Mango, ripe, banganapalli** *(Mangifera indica)*	6	3.19±1.51	1.62±0.22		2.72±1.31			1168±141	1424±308
E037	**Mango, ripe, gulabkhas** *(Mangifera indica)*	2	4.18	1.64		4.58			666	1350
E038	**Mango, ripe, himsagar** *(Mangifera indica)*	3	6.26±2.09	1.19±0.14		5.60±3.84			1181±136	1423±201
E039	**Mango, ripe, kesar** *(Mangifera indica)*	4	3.71±2.21	2.33±0.17		6.96±3.31			1264±172	1438±314
E040	**Mango, ripe, neelam** *(Mangifera indica)*	2	2.95	1.67		2.51			1291	1376
E041	**Mango, ripe, paheri** *(Mangifera indica)*	2	2.51	7.19		2.49			1061	1210

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
E042	**Mango, ripe, totapari** *(Mangifera indica)*	1	13.27	2.86		4.56			602	1632
E043	**Mangosteen** *(Garcinia mangostana)*	1	16.81	5.40					1.80	181
E044	**Manila tamarind** *(Pithecellobium dulce)*	1	36.50	10.50					2.20	154
E045	**Musk melon, orange flesh** *(Cucumis melon)*	5	20.17±3.03	2.52±0.84					771±96.4	925±43.6
E046	**Musk melon, yellow flesh** *(Cucumis melon)*	6	22.48±9.44	2.69±1.16					6.87±0.36	92.15±6.04
E047	**Orange, pulp** *(Citrus aurantium)*	6	13.8±1.83	31.88±6.66		44.02±13.91		5.76±1.79	31.94±2.12	675±11.0
E048	**Palm fruit, tender** *(Borassus flabellifer)*	1	5.80	1.50						50.00
E049	**Papaya, ripe** *(Carcia papaya)*	6	5.43±0.87	280±43.9	833±82.9	648±85.2			694±84.5	2472±81.1
E050	**Peach** *(Prunus communis)*	1	5.80	1.50						50.00
E051	**Pear** *(Pyrus* sp.*)*	6	14.7±1.34	2.77±1.18		1.44±0.28			13.16±1.78	92.30±8.23
E052	**Phalsa** *(Grewia asiatica)*	2	157	3.11				5.68	1.71	396
E053	**Pineapple** *(Ananas comosus)*	6	8.11±1.14	1.80±1.23					31.21±4.33	86.31±10.74
E054	**Plum** *(Prunus domestica)*	3	5.67±0.98	2.39±1.04					1.32±0.22	430±82.9
E055	**Pomegranate, maroon seeds** *(Punica granatum)*	6	27.8±7.62	2.51±0.82					2.05±0.58	47.28±7.09
E056	**Pummelo** *(Citrus maxima)*	3	22.5±8.14	5.90±1.56		10.43±1.83			1.55±0.35	337±83.6
E057	**Raisins, dried, black** *(Vitis vinifera)*	6	9.13±1.70	2.18±0.95					3.71±1.08	207±44.7
E058	**Raisins, dried, golden** *(Vitis vinifera)*	6	28.3±4.93	3.53±1.13					2.53±0.63	272±38.6
E059	**Rambutan** *(Nephelium lappaceum)*	1	16.80	2.50					2.90	175
E060	**Sapota** *(Achras sapota)*	6	22.6±7.22	2.09±0.64					80.70±5.96	229±17.3
E061	**Soursop** *(Annona muricata)*	1	29.80	5.30					2.20	78.00
E062	**Star fruit** *(Averrhoa carambola)*	1	26.80	2.60					1.40	152
E063	**Strawberry** *(Fragaria ananassa)*	6	19.3±4.86	1.45±0.22					2.19±0.17	218±71.1

Table 4: Carotenoids

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
E064	**Tamarind, pulp** *(Tamarindus indicus)*	6	28.4±2.99	11.61±5.64					1.54±0.42	188±21.3
E065	**Water melon, dark green (sugar baby)** *(Citrullus vulgaris)*	6	914±211	25.95±11.73	1477±347				605±121	4176±537
E066	**Water melon, pale green** *(Citrullus vulgaris)*	6	981±124	23.40±8.65	1257±408				576±119	4300±379
E067	**Wood Apple** *(Limonia acidissima)*	3	11.0±1.56	2.57±0.83					3.81±1.28	77.06±7.46
E068	**Zizyphus** *(Zizyphus jujube)*	1	10.70	1.60					1.50	76.80
F	**ROOTS AND TUBERS**									
F001	**Beet root** *(Beta vulgaris)*	6	28.6±10.9	4.57±2.69					10.14±2.52	12.88±1.58
F002	**Carrot, orange** *(Dacus carota)*	6	257±63.1	13.93±4.31	157±44.9			2654±524	5423±450	9377±1093
F003	**Carrot, red** *(Dacus carota)*	4	224±45.1	15.49±4.61	871±95.9			1128±179	2706±298	7570±412
F004	**Colocasia** *(Colocasia antiquorum)*	6	5.87±1.78	2.07±0.69					6.50±1.16	21.72±2.75
F005	**Lotus root** *(Nelumbium nelumbo)*	3	13.0±1.58							156±19.5
F006	**Potato, brown skin, big** *(Solanum tuberosum)*	6	8.07±0.98	122±4.9						208±19.3
F007	**Potato, brown skin, small** *(Solanum tuberosum)*	1	7.86	125						224
F008	**Potato, red skin** *(Solanum tuberosum)*	1	8.12	123						226
F009	**Radish, elongate, red skin** *(Raphanus sativus)*	3	8.68±1.90	2.38±0.93					1.62±0.37	17.61±5.77
F010	**Radish, elongate, white skin** *(Raphanus sativus)*	6	5.34±0.84	2.08±0.84						10.60±1.22
F011	**Radish, round, red skin** *(Raphanus sativus)*	1	7.80	2.50					1.20	13.07
F012	**Radish, round, white skin** *(Raphanus sativus)*	2	6.36	1.66						23.69
F013	**Sweet potato, brown skin** *(Ipomoes batatas)*	4	282±56.1	146±22.7					5376±816	8653±749
F014	**Sweet potato, pink skin** *(Ipomoes batatas)*	3	208±54.2	133±11.7					11.12±1.45	95.93±16.07

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
F015	**Tapioca** *(Manihot esculenta)*	3	5.93±1.86	2.38±0.95						60.90±8.50
F016	**Water Chestnut** *(Eleocharis dulcis)*	1	8.12	2.50						93.08
F017	**Yam, elephant** *(Amorphophallus campanulatus)*	6	168±14.8	10.43±2.76				32.32±3.56	176±19.3	599±70.0
F018	**Yam, ordinary** *(Amorphophallus campanulatus)*	4	273±51.3	8.69±3.43					158±31.8	51.04±7.68
F019	**Yam, wild** *(Dioscorea versicolor)*	2	11.39	1.20				8.95	230	94.53
G	**CONDIMENTS AND SPICES-FRESH**									
G001	**Chillies, green-1** *(Capsicum annum)*	5	255±44.6	18.92±3.74					31.69±9.15	1135±403
G002	**Chillies, green-2** *(Capsicum annum)*	3	283±66.7	24.48±6.29					232±91.3	1336±100
G003	**Chillies, green-3** *(Capsicum annum)*	5	285±79.9	34.74±11.55					158±45.8	1107±317
G004	**Chillies, green-4** *(Capsicum annum)*	3	207±56.1	45.64±13.89					67.84±5.44	1761±178
G005	**Chillies, green-5** *(Capsicum annum)*	2	278±93.3	41.40±25.80					45.41±11.38	1539±477
G006	**Chillies, green-6** *(Capsicum annum)*	1	234	35.50					508	1478
G007	**Chillies, green-7** *(Capsicum annum)*	1	294	28.50					44.00	1891
G008	**Chillies, green - all varieties** *(Capsicum annum)*	6	261±60.9	31.47±13.46					125±122	1347±382
G009	**Coriander leaves** *(Coriandrum sativum)*	6	6351±1069	28.30±14.89					3808±891	13808±2107
G010	**Curry leaves** *(Murraya koenigii)*	6	2945±381	36.13±12.13				144±14.5	7663±704	21862±2168
G011	**Garlic, big clove** *(Allium sativum)*	6	4.02±1.61	1.55±0.28						33.91±6.10
G012	**Garlic, small clove** *(Allium sativum)*	3	5.09±1.50	1.57±0.37						30.48±6.94
G013	**Garlic, single clove, Kashmir** *(Allium sativum)*	1	2.52	1.36						26.58

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
G014	**Ginger, fresh** *(Zinziber officinale)*	6	15.0±4.48	5.97±3.00					88.85±0.92	329±53.7
G015	**Mango ginger** *(Curcuma amada)*	3	23.6±3.99	3.09±1.50					76.62±13.12	250±5.3
G016	**Mint leaves** *(Mentha spicata)*	4	2526±730	300±51.2					4602±553	18693±1938
G017	**Onion, big** *(Allium cepa)*	6	1.77±0.64	1.81±0.69					1.08±0.28	89.10±6.38
G018	**Onion, small** *(Allium cepa)*	5	15.3±0.92	1.69±0.09					1.10±0.06	31.04±12.49
G	**CONDIMENTS AND SPICES-DRY**									
G019	**Asafoetida** *(Ferula assa-foetida)*	6	23.8±6.80	1.52±0.29					6.42±0.75	168±24.7
G020	**Cardamom, green** *(Elettaria cardamomum)*	6	37.0±10.0	32.85±4.78					21.91±2.31	366±22.6
G021	**Cardamom, black** *(Elettaria cardamomum)*	4	56.9±17.6	10.31±2.62					77.48±13.27	1137±95.2
G022	**Chillies, red** *(Capsicum annum)*	6	1843±342	2712±789	36.44±10.4	1599±203			1542±288	101812±5619
G023	**Cloves** *(Syzygium aromaticum)*	6	16.9±3.39	1.55±0.23				8.55±0.71	73.51±2.74	356±38.2
G024	**Coriander seeds** *(Coriandrum sativum)*	6	225±34.0	10.96±2.23					122±13.5	996±50.0
G025	**Cumin seeds** *(Cuminum cyminum)*	6	170±10.8	42.60±6.86					89.19±19.24	553±32.5
G026	**Fenugreek seeds** *(Trigonella foenum graecum)*	6	586±91.3	201±12.0					142±1.5	1210±162
G027	**Mace** *(Myristica fragrans)*	6	135±26.7	196±22.4					2322±157	9203±880
G028	**Nutmeg** *(Myristica fragrans)*	6	4.01±1.18	1.33±0.26					15.37±1.11	80.91±9.87
G029	**Omum** *(Trachyspermum ammi)*	6	494±61.2	8.30±2.99		51.37±9.37			746±17.7	1836±22.1
G030	**Pippali** *(Piper longum)*	6	666±92.3	479±54.8		110±10.5		278±28.4	545±50.4	2401±205
G031	**Pepper, black** *(Piper nigrum)*	6	650±62.3	158±15.4		165±11.6		157±10.1	767±65.5	2219±56
G032	**Poppy seeds** *(Papaver somniferum)*	6	23.5±15.0	1.76±0.79					3.51±0.66	34.45±10.70

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
G033	**Turmeric powder** *(Curcuma domestica)*	6	99.8±16.0	3.56±1.60					55.20±1.77	427±85.8
H	**NUTS AND OIL SEEDS**									
H001	**Almond** *(Prunus amygdalus)*	6	5.93±1.89	1.79±0.12						11.31±1.57
H002	**Arecanut, dried, brown** *(Areca catechu)*	6	21.3±6.13	3.83±2.00						41.96±3.23
H003	**Arecanut, dried, red color** *(Areca catechu)*	3	27.5±7.24	3.12±1.66						63.72±3.91
H004	**Arecanut, fresh** *(Areca catechu)*	2	31.65	6.23						47.78
H005	**Cashew nut** *(Anacardium occidentale)*	6	5.87±1.91	3.21±1.77						16.94±3.30
H006	**Coconut, kernal, dry** *(Cocos nucifera)*	6	62.5±9.59	3.12±1.03						176±9.4
H007	**Coconut, kernel, fresh** *(Cocos nucifera)*	6	122±15.4	4.84±1.66					2.66±0.28	204±11.3
H008	**Garden cress, seeds** *(Lepidium sativum)*	5	22.5±7.41	33.93±10.2						559±34.6
H009	**Gingelly seeds, black** *(Sesamum indicum)*	6	22.9±11.0	2.67±1.21					13.09±2.67	60.78±13.60
H010	**Gingelly seeds, brown** *(Sesamum indicum)*	4	17.0±4.46	2.40±0.61					5.41±0.57	86.72±3.90
H011	**Gingelly seeds, white** *(Sesamum indicum)*	5	19.7±5.45	1.88±0.33					12.94±1.55	57.06±19.48
H012	**Ground nut** *(Arachis hypogea)*	6	4.42±1.04	8.07±2.32					22.75±2.13	82.80±6.06
H013	**Mustard seeds** *(Brassica juncea)*	6	192±16.3	6.54±2.42					36.72±7.07	675±77.0
H014	**Linseeds** *(Linum usitatissimum)*	6	5.67±0.81	7.22±0.70					1.05±0.03	92±22.8
H015	**Niger seeds, black** *(Guizotia abyssinica)*	4	22.1±4.41	9.61±1.59					2.15±0.81	295±39.1
H016	**Niger seeds, gray** *(Guizotia abyssinica)*	5	6.00±0.54	2.38±1.13		2.73±0.91			8.49±0.83	187±21.6
H017	**Pine seed** *(Pinus gerardiana)*	5	97.0±17.4	11.55±1.53					1.98±0.52	297±40.4
H018	**Pistachio nuts** *(Pistacla vera)*	6	171±6.8						110±10.4	519±31.3
H019	**Safflower seeds** *(Carthamus tinctorius)*	5	27.6±7.88	11.04±2.45					2.07±0.58	142±13.8

Food code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β-Cryptoxanthin	γ-Carotene	α-Carotene	β-Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
H020	**Sunflower seeds** *(Helianthus annuus)*	5	20.0±2.52	2.48±0.71					8.15±1.18	249±12.0
H021	**Walnut** *(Juglans regia)*	6	21.7±10.05	2.30±0.82		4.94±0.79			9.53±0.91	122±5.8
I	**SUGARS**									
I001	**Jaggery, cane** *(Saccharum officinarum)*	6	5.90±1.83							18.49±2.26
I002	**Sugarcane, juice** *(Saccharum officinarum)*	6	8.36±2.40						7.87±0.37	41.23±4.16
J	**MUSHROOMS**									
J001	**Button mushroom, fresh** (*Agaricus* sp.)	1								
J002	**Chicken mushroom, fresh** *(Lactiporus* sp.*)*	1								
J003	**Shiitake mushroom, fresh** *(Lentinula* sp.*)*	1								
J004	**Oyster mushroom, dried** *(Pleurotus* sp.*)*	1								
K	**MISCELLANEOUS FOODS**									
K001	**Toddy**	10								
K002	**Coconut Water**	6	4.53±2.12							46.12±7.32
L	**MILK AND MILK PRODUCTS**									
L001	**Milk, whole, Buffalo**	6	8.78±2.21						8.42±0.40	80.87±1.41
L002	**Milk, whole, Cow**	6	9.62±1.51	5.01±1.15					13.67±3.79	200±55.9
L003	**Panner**	6	7.58±0.97						4.39±1.44	194±1.7
L004	**Khoa**	6	2.70±0.69						3.52±1.16	190±8.0

Food Code	Food Name	No. of Regions	Lutein	Zeaxanthin	Lycopene	β - Cryptoxanthin	γ - Carotene	α - Carotene	β - Carotene	Total Carotenoids
			← µg →							
			LUTN	ZEA	LYCPN	CRYPXB	CARTG	CARTA	CARTB	CARTOID
M	**EGG AND EGG PRODUCTS**									
M001	**Egg, poultry, whole, raw**	6	17.61±2.89	37.23±7.16		0.97±0.44			13.60±2.04	135±2.6
M002	**Egg, poultry, white, raw**	6								
M003	**Egg, poultry, yolk, raw**	6	27.29±1.29	56.60±15.23		2.09±0.78			88.87±0.94	241±6.7
M004	**Egg, poultry, whole, boiled**	6	14.69±3.40	26.29±11.09		1.07±0.53			13.19±0.49	136±7.3
M005	**Egg, poultry, white, boiled**	6								5.30±0.31
M006	**Egg, poultry, yolk, boiled**	6	19.36±3.98	54.75±12.66		1.69±0.77			68.59±2.93	218±9.8
M007	**Egg, poultry, omlet**	3	14.47±0.35	19.03±0.96		0.75±0.10			11.36±0.84	111±1.0
M008	**Egg, country hen, whole, raw**	1	26.86	47.26		1.56			18.55	191
M009	**Egg, country hen, whole, boiled**	1	23.61	37.85		1.06			17.45	166
M010	**Egg, country hen, omlet**	1	20.55	30.85		0.95			14.75	161
M011	**Egg, duck, whole, boiled**	1	22.21	10.16		9.25			34.59	228
M012	**Egg, duck, whole, raw**	1	29.50	17.96		11.08			35.66	249
M013	**Egg, duck, whole, omlet**	1	20.05	9.55		8.98			30.08	213
M014	**Egg, quial, whole, raw**	1	14.83	28.48		3.57			12.96	242
M015	**Egg, quial, whole, boiled**	1	12.55	14.75		1.86			10.55	230

Table 4. Carotenoids