

**Food  
and  
Nutrition  
in India**

# **Food and Nutrition in India**

**By**

**An Indian Dietarian**

**FIRST EDITION**

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BY

DR. D. N. CHATTERJEE,

3/2, College Street,

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*To*

The starving millions of India,  
whose silent tears and sorrows  
have deeply moved our thinkers  
to-day, particularly Mahatma  
Gandhi—a thinker for all ages.

## P R E F A C E

In presenting this book to his countrymen, the author feels happy at the thought that its publication somehow or other synchronises with a time when there is a universal cry for more and more food. Whether this coincidence has any significance or not, the author feels that literature on the subject of nutrition in various forms, should be made available to the general public in increasing numbers, so that they may acquire a first-hand knowledge of what to eat and how to eat. It has been well said "Food properly chosen, properly cooked, and properly eaten is half the battle of life". If this aphorism was true in the past, how much more it is now? It is no longer a secret that the world is faced with food shortage of a tremendous dimension. A crisis of such extent and magnitude has never confronted the world before, and of all countries, India seems to be the hardest hit. Even in pre-war days, India was not self-sufficient in the production of her staple foodstuffs, let alone such "protective foods" as milk and its products, eggs, meat, fish, etc. She could, however, then count upon supplies from outside, but the position is changed to-day as the result of the economic disruption caused by the recent devastating war, and India can hardly expect anything like unrestricted imports of foodgrains for some time to come. The situation is further complicated by the increasing pressure of population on land, and all these suggest that the problem of food has come to stay more or less as a permanent feature in India's economy. On a rough estimate, the population of India is increasing at the rate of 5 millions per annum with the agricultural position remaining more or less stationary, and if this phenomenon continues for some time, India will soon be faced with a crisis which will strike at the very root of her social economy. Evidently the situation can be saved only by well-planned activities in various directions, and the one which bears special significance at this stage, is to make the most efficient use of the foodstuffs just

within our reach, in the light of the fundamental truths of nutrition. Here arises the necessity of utilising to the full extent the 'newer' knowledge of nutrition brought forth by Science, and this little book is intended only to be an aid to the study of the subject in all its practical aspects.

A study of the subject of nutrition, however, pre-supposes a knowledge of the fundamentals of Physiology, and naturally the first part of the book is devoted to the elucidation of the elementary principles of this fascinating subject. The writer would point out here that he has taken proper care to present the subject in a readable form to the average man in the street, for whom the book is mainly intended.

The second part of the book covers a fairly wide area dealing with fundamental principles of nutrition, the different constituents of food, their uses in the human body, the properties and composition of foodstuffs, the requirements of a balanced diet, and many other incidental matters, so that any layman of average intelligence can utilise his foodstuffs to the best advantage from the point of nutrition. In developing the subject which is more or less technical in nature, the writer submits that he has done his best to make it intelligible to general readers, and if in doing so, he has given his discourse a turn of class-room study with elaborate explanations and repetitions, he tenders an apology to his more advanced readers.

While the author does not pretend to be an expert on the subject of nutrition, he strongly believes in the dissemination of the knowledge of nutrition as a means to fight what looks like a serious menace to the health and vigour of the rising generation of India. The whole mass has to be made nutrition-conscious if India is to survive in the present struggle for existence. As has been previously noted, the book is particularly written for the illumination of the average laymen, and if they derive any benefit from reading

it, and in their turn, feels an urge to instruct and guide their ignorant countrymen along the right line, the humble author will consider that his labour has not been spent in vain.

In preparing the book, the writer had naturally to consult many standard authors, and he takes this opportunity to express his gratitude to them and apologise for making free use of their publications in bringing the benefits of their rich knowledge and experience within the reach of the general public; and if this book succeeds to some extent in arousing public interest in the subject of nutrition, he should confess that the credit belongs not to him, but to that brilliant band of nutrition workers who have made the fruits of their labour of love more or less public property for the benefits of humanity at large.

The author is also grateful to his numerous friends and well-wishers for the sincere support and guidance he has received from them in writing the book, and finally placing it in the hands of his worthy readers. Thanks are particularly due to Dr. N. K. Brahmachari, M.Sc., M.B., Hony. Visiting Physician to Campbell Medical School & Hospitals, and to National Medical Institution & Chittaranjan Hospitals; to Dr. D. N. Ganguli, M.B., Member, Food Industries Planning, Panel No. 1 (Government of India), Member, International Milk Sanitarians, New York, Director and Technical Adviser, National Nutriments Ltd., Calcutta; and last but not least, to Dr. S. P. Das Gupta, B.Sc., M.B., D. T. M., Bacteriologist to Messrs. Albert David of Calcutta—each of whom revised one or the other portion of the manuscript, giving constructive suggestions for improvement—and all these with good graces. Needless to say that none of them are responsible for such shortcomings that can hardly be avoided in writing a technical subject for the consumption of readers, many of whom lack the background of scientific education.

In this connection, the writer feels that he would fail in his duty if he did not publicly acknowledge his special obligations to two of his personal friends—Babu Bankim Chandra Ghosh of Kidderpore, and Dr. D. N. Chatterjee of 3/2, College Street, Calcutta. It is only in a spirit of duty that they have all along stood by the author in his onerous task, and if the book fulfils its promise, they will have that rare joy which springs from a success with no motive of any personal gain behind it.

In closing, the author should very much like to express his sincere admiration for Babu Monoranjan Sen, B.A., in charge of the Calcutta Printing Co., Ltd., who has only done justice to his old tie with the author as a chum, by taking the publication as his own, and seeing it through the press with that alacrity and promptitude which has raised him in the estimation of the author's associates.

**AUTHOR.**

*January 1, 1947.*



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## APPENDIX I

### \*TABLES OF COMPOSITION OF FOODSTUFFS.

(Percentage of fibres present not shown.)

#### MILK AND ITS PRODUCTS.

Name of Foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Min- eral.	Calories per 100 gms.
Milk Ass ...	91.0	1.7	1.0	6.5	0.4	47
Milk Cows ...	87.6	3.3	3.6	4.8	0.7	65
Milk Buffalo's ...	81.0	4.3	3.8	5.1	0.8	117
Milk Goat's ...	85.2	3.7	5.6	4.7	0.8	84
Milk Human ...	88.0	1.0	3.9	7.0	0.1	67
Curd (Dadhi) ...	90.3	2.9	2.9	3.3	0.6	51
Butter ...	12.0	1.5	85.0	....	1.5	790
Butter Milk ...	97.5	0.8	1.1	0.5	0.1	15
Skimmed Milk ...	92.1	2.5	0.1	4.6	0.7	29
Skimmed milk Powder ...	4.1	38.0	0.1	51.0	6.8	357
Cheese ...	40.3	24.1	25.1	6.3	4.2	348
Cream ...	70.0	2.5	24.0	3.5	1.75	245
Casein (channa) ...	57.5	21.5	17.5	0.75	1.75	252
Sandesh ...	20.0	19.5	20.2	40.0	1.50	330

#### FLESH FOOD.

Beef (Muscle) ...	74.3	22.6	2.6	....	1.0	114
Crab (muscle) ...	83.5	8.9	1.1	3.4	3.2	60
Eggs (Duck) ...	71.0	13.5	13.7	0.7	1.0	180
Eggs (Fowl) ...	73.7	13.3	13.3	....	1.0	174
Fish (Rohit) ...	72	18.35	7.55	....	1.40	140
.. (Vetki) ...	75	16.25	4.10	....	0.85	105
.. (Hilsha) ...	75	14.85	9.20	....	0.95	150
.. (Mango) ...	80	16.75	4.10	....	0.85	109
.. (Magoor) ...	78	19.50	0.50	....	1.30	85
.. (Kai) ...	80	17.75	0.45	....	1.00	79
.. (Tangra) ...	82	17.30	0.30	....	1.10	72
.. (Parshe) ...	77	15.75	6.2	....	1.0	120

\*Most of the figures are taken from Bulletin No. 23 published by the Government of India.

## APPENDIX I

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Name of Foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Fish (Mangalore, big)	78.4	22.6	0.6	....	0.8	90
,, (Mangalore, small)	77.9	21.5	1.6	....	2.0	100
Chicken	... 74.0	21.0	3.0	....	1.0	114
Liver (Sheep)	... 70.4	19.3	7.5	1.4	1.5	150
Mutton (Muscle)	... 71.5	18.5	13.3	....	1.3	195
Mutton (Lean)	... 74.0	17.0	3.0	....	4.0	100
Mutton (Fat)	... 56.0	11.0	28.0	....	3.0	300
Prawn (Muscle)	... 77.9	20.8	0.3	....	1.4	85

## CEREALS.

Bajra or cambu	... 12.4	11.6	5.0	67.1	2.7	360
Barley	... 12.5	11.5	1.2	69.3	1.5	335
Cholam	... 11.9	10.4	1.9	74.0	1.8	355
Maize, tender	... 79.4	4.3	0.5	15.1	0.7	82
Maize, dry	... 14.9	11.1	3.6	66.2	1.5	342
Maize, Flour	... 11.5	0.6	0.6	87.0	0.4	355
Oatmeal	... 10.7	13.6	7.6	62.8	1.9	374
Ragi	... 13.1	7.1	1.3	76.3	2.2	345
Rice, raw, home-pounded	12.2	8.5	0.6	78.0	0.7	351
Rice, par-boiled, home-pounded	... 12.6	8.5	0.6	77.4	0.9	349
Rice, raw, milled	... 13.0	6.9	0.4	79.2	0.5	348
Rice, par-boiled, milled	13.3	6.4	0.4	79.1	0.8	346
Rice, flakes	... 12.2	6.6	1.2	78.2	1.8	350
Rice, beaten (Chira)	12.5	7.8	0.01	77.5	3.2	344
Rice puffed (Muri)	... 14.7	7.5	0.1	74.2	3.4	328
Samai	... 11.5	7.7	4.7	63.7	4.8	328
Fried paddy (Khai)	... 14.0	7.2	0.2	77.0	1.8	342
Sati flour (Palo)	... 15.0	3.4	3.5	75.0	....	360
Wheat, whole	... 12.8	11.8	1.5	71.2	1.5	340
Wheat, flour, whole (atta)	... 12.2	12.1	1.7	72.2	1.8	353
Wheat, flour, refined	... 13.3	11.0	0.9	74.1	0.4	349
Bread	... 40.0	8.8	1.5	50.0	1.3	248
Boiled rice (Bhat)	... 50.0	4.8	0.8	45.0	0.4	215
Biscuit	... 8.0	15.5	1.3	73.5	1.6	370
Chapati (Atta Ruti)	... 17.0	10.0	1.6	68.0	1.7	330
Loochi	... 20.0	7.0	22.5	50.0	0.5	440

## LEGUMES (Pulses).

Name of Foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Bengal gram (with outer husk) ...	9.8	17.1	5.3	61.2	2.7	361
Bengal Gram, roasted (without outer husk)	11.2	22.5	5.2	58.9	2.2	372
Black Gram (without outer husk) ...	10.9	24.0	1.4	60.3	3.4	350
Cow Gram ...	12.0	24.6	0.7	55.7	3.2	327
Field Bean, dry ...	9.6	24.9	0.8	60.1	3.2	347
Green Gram (with outer husk) ...	10.4	24.0	1.3	56.6	3.6	334
Horse Gram ...	11.8	22.0	0.5	57.3	3.1	322
"Khesari" ...	10.0	28.2	0.6	58.2	3.0	351
Lentil (Masur dal) ...	12.4	25.1	0.7	59.7	2.1	346
Peas, dried ...	16.0	19.7	1.1	56.6	2.1	315
Peas, roasted ...	9.9	22.9	1.4	63.5	2.3	358
Red Gram (Dal arhar) (without outer husk)	15.2	22.3	1.7	57.2	3.6	333
Soya bean ...	8.1	43.2	19.5	20.9	4.6	432

## LEAFY VEGETABLES.

Amaranth, tender ...	85.8	4.9	0.5	5.7	3.1	47
Amaranth, spined ...	85.0	3.0	0.3	8.1	3.6	47
Bamboo, tender shoots	87.1	3.9	0.5	7.5	1.4	47
"Bathua" Leaves ...	87.9	4.7	0.4	3.7	3.3	37
Bengal Gram leaves ...	77.8	7.0	1.4	11.7	2.1	87
Brussels sprouts ...	84.6	4.7	0.5	9.2	1.0	60
Cabbage ...	90.2	1.8	0.1	6.3	0.6	33
Carrot leaves ...	83.3	5.1	0.5	8.3	2.8	58
Celery ...	81.3	6.0	0.6	8.6	2.1	64
Coriander ...	87.9	3.3	0.6	6.5	1.7	45
Curry leaves ...	66.3	6.1	1.0	16.0	4.2	97
Drumstick ...	75.0	6.7	1.7	13.4	2.3	96
Fenugreek ...	81.8	4.9	0.9	9.8	1.6	67
Garden Cress ...	82.3	5.8	1.0	8.7	2.2	67
Gram leaves ...	60.6	8.2	0.5	27.2	3.5	146
Ipomoea ...	90.3	2.9	0.4	4.3	2.1	32
Khesari leaves ...	84.2	6.1	1.0	7.6	1.1	64
Lettuce ...	92.9	2.1	0.3	3.0	1.2	23

Name of Foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Mint ...	83.0	4.8	0.6	8.0	1.6	57
Neem, mature ...	59.4	7.1	1.0	22.9	3.4	129
Neem, tender ...	59.4	1.6	3.0	21.2	2.6	158
Parsley ...	68.4	5.9	1.0	19.7	3.2	111
Rape leaves ...	84.9	5.1	0.4	7.1	2.5	52
Safflower leaves ...	89.9	3.3	0.7	5.1	1.0	40
Spinach ...	91.7	1.9	0.9	4.0	1.5	32
Soya leaves ...	79.5	6.0	0.5	10.8	3.2	72
Water cress ...	89.2	2.9	0.2	5.5	2.2	35

## ROOTS AND TUBERS.

Beet root ...	83.8	1.7	0.1	13.6	0.8	62
Carrot ...	86.0	0.9	0.1	10.7	1.1	47
Colocasia ...	73.1	3.0	0.1	22.1	1.7	101
Onion, big ...	86.9	1.2	0.1	11.6	0.4	51
Onion, small ...	84.3	1.8	0.1	13.2	0.6	61
Parsnip ...	72.4	1.3	0.3	23.2	1.1	101
Potato ...	74.7	1.6	0.1	22.9	0.6	99
Radish (pink) ...	90.8	0.6	0.3	7.4	0.9	35
Radish (white) ...	94.4	0.7	0.1	4.2	0.6	21
Sweet potato ...	66.5	1.2	0.3	31.0	1.0	132
Tapioca ...	59.4	0.7	0.2	38.7	1.0	159
Yam (elephant) ...	78.7	1.2	0.1	18.4	0.8	79
Yam (ordinary) ...	69.9	1.4	0.1	27.0	1.6	115

## OTHER VEGETABLES.

Amaranth stem ...	92.5	0.9	0.1	3.5	1.8	19
Artichoke ...	77.3	3.6	0.1	16.0	1.8	79
Ash gourd ...	96.0	0.4	0.1	3.2	0.3	15
Bitter gourd ...	92.4	1.6	0.2	4.2	0.8	25
Bitter gourd (small variety) ...	83.2	2.9	1.0	9.8	1.4	60
Brinjal ...	91.5	1.3	0.3	6.4	0.5	34
Broad beans ...	82.4	4.5	0.1	10.0	1.0	59
Calabash cucumber ...	96.3	0.2	0.1	2.9	0.5	13
Cauliflower ...	89.4	3.5	0.4	5.3	1.4	39
Celery stalks ...	93.5	0.8	0.1	3.5	0.9	18
Cluster beans ...	82.5	3.7	0.2	9.9	1.4	56

## FOOD AND NUTRITION IN INDIA

Name of foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Coiocasia stems ...	93.4	0.3	0.3	4.1	1.2	21
Cucumber ...	96.4	0.4	0.1	2.8	0.3	14
Double beans ...	73.8	8.3	0.3	12.3	1.0	85
Drumstick ...	86.9	2.5	0.1	3.7	2.0	26
French beans ...	91.4	1.7	0.1	4.5	0.5	26
Ipomoea stems ...	93.7	0.9	0.2	3.4	1.8	19
Jack, tender ...	84.0	2.6	0.3	9.4	0.9	51
Jack fruit seeds ...	51.6	6.6	0.4	38.4	1.5	184
"Kovai" fruit, tender ...	93.1	1.2	0.1	3.5	0.5	20
Knol-knol ...	92.1	1.1	0.2	5.9	0.7	30
Ladies fingers ...	88.0	2.2	0.2	7.7	0.7	41
Leeks ...	78.9	1.8	0.1	17.2	0.7	77
Mango, green ...	90.0	0.7	0.1	8.8	0.4	39
"Nellikai" Amla ...	81.2	0.5	0.1	14.1	0.7	59
Onion stalks ...	87.6	0.9	0.2	8.9	0.8	41
"Parwar" ...	92.3	2.0	0.3	1.9	0.5	18
Peas, English ...	72.1	7.2	0.1	19.8	0.8	109
Plantain flower ...	90.2	1.5	0.2	5.0	1.2	23
Plantain, green ...	83.2	1.4	0.2	14.7	0.5	66
Plantain stem ...	88.3	0.5	0.1	9.7	0.6	42
Pumpkin ...	92.6	1.4	0.1	5.3	0.6	28
Rhubarb stalks ...	92.7	1.1	0.5	3.7	1.1	24
Ridge Gourd ...	95.4	0.5	0.1	3.7	0.3	18
"Singhara" or water chestnut ...	70.0	4.7	0.3	23.9	1.1	117
Snake-gourd ...	94.1	0.5	0.3	4.4	0.7	22
Spinach stalks ...	93.4	0.9	0.1	3.8	1.8	20
Sword beans ...	88.6	2.7	0.2	6.4	0.6	38
Tomato, green ...	92.8	1.9	0.1	4.5	0.7	27
Turnip ...	91.1	0.5	0.2	7.6	0.6	34
Vegetable marrow ...	94.8	0.5	0.1	4.3	0.3	20

## FRUITS.

Apple ...	85.9	0.3	0.1	13.4	0.3	56
Banana ...	61.4	1.3	0.2	36.4	0.7	153
Billimb' ...	93.9	0.5	0.2	4.8	0.2	23
Cashew fruit ...	87.9	0.2	0.1	11.6	0.2	48
Dates (Persian) ...	26.1	3.0	0.2	67.3	1.3	283
Figs ...	89.8	1.3	0.2	17.1	0.6	75



Name of foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Grapes (Blue Variety) ...	85.5	0.8	0.1	10.2	0.4	45
Grape fruit (Triumph) ...	92.0	0.7	0.1	7.1	0.2	32
Grape fruit (Marsh's seedless) ...	85.5	1.0	0.1	10.0	0.4	45
Guava, country ...	6.1	1.5	0.2	14.5	0.8	66
Guava, hill... ...	85.3	0.1	0.2	8.1	0.6	38
Jack fruit ...	77.2	1.9	0.1	18.9	0.8	84
Jambu fruit (Rose apple)	78.2	0.7	0.1	19.7	0.4	3
Korukkapalli ...	80.8	2.6	0.3	15.9	0.4	77
Lemon ...	85.0	1.0	0.9	11.1	0.3	57
Lime ...	84.6	1.5	1.0	10.9	0.7	59
Mango, green ...	90.0	0.7	0.1	8.8	0.4	39
Mango, ripe ...	86.1	0.6	0.1	11.8	0.3	50
Mango, "Ankola" ...	85.9	1.0	0.1	12.5	0.5	55
Mangosteen ...	84.9	0.5	0.1	14.3	0.2	60
Melon, water ...	95.7	0.1	0.2	3.8	0.2	17
Orange ...	87.8	0.9	0.3	10.6	0.4	49
Palmyra fruit, tender	92.7	0.6	0.1	6.5	0.2	28
Papaya, ripe ...	89.6	0.5	0.1	9.5	0.4	40
Peaches ...	90.1	1.5	0.2	7.6	0.6	38
Pears, country ...	6.9	0.2	0.1	11.5	0.3	47
Pears, English ...	85.8	0.9	0.2	12.9	0.2	57
Pine apple ...	86.5	0.6	0.1	12.0	0.5	50
Plantain (ordinary) ...	73.4	1.1	0.1	24.7	0.7	104
Plantain (Red variety)	74.1	1.6	0.1	23.4	0.8	101
Plums (red variety) ...	89.8	0.7	0.2	8.9	0.4	40
Pomegranate ...	78.0	1.6	10.1	14.6	0.7	65
Pomeloe ...	88.0	0.6	10.1	10.2	0.5	44
Quince ...	85.7	0.3	0.1	11.9	0.3	49
Radish fruit ...	91.2	2.3	0.3	5.4	0.8	34
Raisins (preserved) ...	18.5	2.0	0.2	77.3	2.0	319
"Seetha Pazham" or Custard apple ...	73.5	1.6	0.3	23.9	0.7	105
Strawberry ...	87.8	0.7	0.2	9.8	0.4	44
Tomato, ripe ...	94.5	1.0	0.1	3.9	0.5	21
"Vikki Pazaham" or Wild olive ...	63.9	1.4	0.1	33.7	0.9	141
Wood apple ...	69.5	7.3	0.6	15.5	1.9	97
Tamarind, pulp ...	20.9	2.1	0.1	67.4	2.9	283
Zizyphus (Indian plum)	85.9	0.8	0.1	12.8	0.4	55

## NUTS AND OIL SEEDS.

Name of foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.	
Almond ...	...	5.2	20.8	58.9	10.5	2.9	655
Cashew nut ...	...	5.9	21.2	46.9	22.3	2.4	596
Cocoanut ...	...	36.3	4.5	41.6	13.0	1.0	444
Gingally seeds ...	...	5.1	18.3	43.3	25.2	5.2	564
Ground nut ...	...	7.9	26.7	40.1	20.3	1.9	549
Ground nut roasted ...	...	4.0	31.5	39.8	19.3	2.3	561
Linseed seeds ...	...	6.6	20.3	37.1	28.8	2.4	530
Mustard seeds ...	...	8.5	22.0	39.7	23.8	4.2	541
Pistachio nut ...	...	5.6	19.8	53.5	16.2	2.8	626
Walnut ...	...	4.5	15.6	64.5	11.0	1.8	637

## MISCELLANEOUS FOODSTUFFS.

Arecanut ...	...	31.3	4.9	4.4	47.2	1.0	249
Arrow-root flour ( West Indian) ...	...	16.5	0.2	0.1	83.1	0.1	334
Betel leaves (piper betel)	...	85.4	3.1	0.8	6.1	2.3	44
Cocoanut, tender ...	...	90.8	0.9	1.4	6.3	0.6	40
Cocoanut water ...	...	95.5	0.1	0.1	4.0	0.4	17
Cooking oil ...	...	2.0	....	98.0	....	....	895
Cod liver oil ...	...	....	....	100.0	....	....	900
Halibut liver oil ...	...	....	....	100.0	....	....	900
Honey ...	...	26.0	0.5	....	73.0	0.3	325
Jaggery (Gur) ...	...	3.9	0.4	0.1	95.0	0.6	333
Jam ...	...	25.0	0.3	....	75.0	0.2	315
"Makhana" ...	...	12.8	9.7	0.1	76.9	0.5	348
Red Palm oil ...	...	....	....	100.0	....	....	900
Sago ...	...	12.2	0.2	0.2	87.1	0.3	351
Sugar ...	...	3.5	....	....	96.5	....	390
Sugar cane juice ...	...	90.2	0.1	0.2	9.1	0.4	39
Sugar cane preserves ...	...	8.1	0.6	0.1	78.4	1.8	317
Toddy, sweet ...	...	84.7	0.1	0.2	14.3	0.7	59
Toddy, sweet (cocoanut)	...	96.2	0.1	0.1	3.5	0.2	15
Toddy, fermented (cocoanut) ...	...	98.3	0.2	0.1	1.3	0.1	7
Yeast, dried ...	...	13.6	39.5	0.6	39.1	7.0	320

## CONDIMENTS, SPICES, ETC.

Name of foodstuff.	Water.	Protein.	Fat.	Carbo- hydrate.	Mi- neral.	Calories per 100 gms.
Asafœtida	... 18.0	4.0	1.1	67.8	7.0	297
Cardamom	... 20.0	10.2	2.2	42.1	5.4	229
Cloves, dry	... 23.3	5.2	8.9	47.9	5.2	293
Cloves, green	... 65.5	2.3	5.9	24.1	2.2	159
Coriander	... 11.2	14.1	16.1	21.6	4.4	288
Cumin	... 11.9	18.7	15.0	36.6	5.8	356
Fenugreek seeds	... 13.7	26.2	5.8	44.1	3.0	333
Garlic	... 62.3	6.3	0.1	29.0	1.0	142
Ginger	... 80.9	2.3	0.9	12.3	1.2	67
Kandanthippili pepper) (Long	... 12.2	6.4	2.3	65.8	4.8	310
Lime peel	... 66.5	1.8	0.5	29.4	1.8	129
Mace	... 15.9	6.5	24.4	47.8	1.6	437
Mustard	... 8.5	22.0	39.7	23.8	4.2	541
Nutmeg	... 14.3	7.5	36.4	28.5	1.7	472
Onum	... 8.9	15.4	18.1	38.6	7.1	379
Pepper, green	... 63.4	4.8	2.7	27.3	1.8	153
Pepper, dry	... 12.9	11.6	6.8	49.5	4.4	305
Tamarind, pulp	... 20.9	3.1	0.1	67.4	2.9	283
Turmeric	... 13.1	6.3	5.1	69.4	3.5	349

## APPENDIX II

### HINDUSTHANI AND BENGALI NOMENCLATURES OF SOME COMMON FOODSTUFFS

#### LEAFY VEGETABLES

ENGLISH	HINDUSTHANI	BENGALI
Amarnath, tender	... Lal Choalai	... Banopata Nate
Amarnath, Spined (Prickly)	... Kantewali Choalai	... Kanta Nate
Bengal Gram Leaves	... Chana sag	... Chola sag
Brussels Sprouts (a kind of cabbage)	... Kobee	... Kobee
Carrot leaves	... Gajar sag	... Gajar sag.
Celery	... Ajwan Ka pata	... Randhuni sag, chanu
Coriander leaves	... Dhania sag	... Dhane sag
Curry leaves	... Gaudhela	... Bursunga
Drumstic leaves	... Saijan pata	... Saijna pata
Fenugreek leaves	... Methi sag	... Methi sag
Garden cress	... Halim	... Halim (Chandra- sura)
Ipomea leaves	... Kalmi sag	... Kalmi sag
Lettuce	... Salad sag	... Salad pata
Mint	... Paudina sag	... Paudina sag
Puing (Red Malabar Night shade)	... Puika sag	... Pui sag
Rape leaves	... Sarsoon sag	... Sarisa sag
Safflower leaves	... Kusambar	... Kusamphul, kajireh
Spinach	... Palagka sag	... Palang sag
Water cress	... Halim	... Halim

#### ROOTS AND TUBERS

Beet root	... Chukander	... Beet
Carrot	... Gajar	... Gajar
Colocasia	... Arwi	... Kachu (Kalo kachu, Mankachu)
Radish	... Muli	... Mula

## APPENDIX II

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ENGLISH	...	HINDUSTHANI	...	BENGALI
Tapioca	...	Simla Alu, Sakarkanda	...	Simla alu
Yam (elephant)	...	Jangli alu, Zamin kand	...	OI
Yam (Ordinary)	...	Ratalu	...	Ghet Kachu

### OTHER VEGETABLES

Artichoke	...	Hatichak	...	Hatichak
Ash gourd	...	Golkadu, Petha	...	Kumra
Bitter gourd	...	Karela	...	Karela
Bitter gourd (Small variety)	...	Karela	...	Uchchhe
Brinjal	...	Baingan	...	Begun
Broad beans	...	Sem	...	Makhan sim
Calabash cucumber (bottle or white gourd)	...	Ghia kadu	...	Lau
Kovai fruit	...	Konduri	...	Telakucha
Knol khol	...	Kabi	...	Kapi
Ladies fingers	...	Bhindi	...	Dherash
Leeks (Onion)	...	Payaj	...	Payaj
Nellikaj (Amla)	...	Amlika	...	Amlaki
Parwar	...	Kondree	...	Telakucha
Plantain flower	...	Kelaka phul	...	Mocha
Plantain stem	...	Keleka Tana	...	Thor, Bharail
Pumpkin	...	Kaddu	...	Kumra
Pubul	...	Parbal	...	Patal
Rhubarb	...	Revanchini	...	Reuchini
Ridge gourd	...	Torai	...	Jhinga
Snake gourd	...	Chachinda	...	Chichinga
Sword beans	...	Sem	...	Kathsim
Turnip	...	Shalgham	...	Shalgom
Vegetable marrow	...	Safed Kaddu	...	Chalkumra
Water chestnut	...	Singhara	...	Singhara

### CEREALS

Cambu	...	Bajra	...	Bajra
Cholam	...	Juar	...	Juar
Maize, tender	...	Makai, Makka	...	Bhuttee

ENGLISH	HINDUSTHANI	BENGALI
Millet ...	... Chin ...	... China
Oat ...	... Jai ...	... Jai
Ragi ...	... Mandua, Makra	... Bajri, Murooa
Rice (raw) ...	... Alwa chawal	... Atap chowl
Rice (parboiled) ...	... Usna chawal	... Siddha chowl
Rice (puffed) ...	... Marmura	... Muri
Samai (Little millet)	... Kutki ...	... Kangni

## PULSES

Bengal Gram ...	... Chana ...	... Boot, chola
Black gram ...	... Urd ...	... Mashkalai
Cow gram ...	... Labia bada	... Barbati
Green gram ...	... Mung ...	... Mug
Horse gram ...	... Kulthi ...	... Kulti
Lentil ...	... Masur ...	... Musari
Peas ...	... Matar ...	... Matar
Red gram ...	... Arhar ...	... Arhar
Soya bean ...	... Bhatwan ...	... Gari Kalai

## MILK AND ITS PRODUCTS

Butter-milk ...	... Matha. ...	... Matha, Ghol
Curd ...	... Dahi. ...	... Dadhi
Cheese ...	... Panir. ...	... Panir

## FRUITS

Banana ...	... Kela ...	... Kala
Bilimbi ...	... Kamrach	... Kamranga
Cashew fruit ...	... Kajuka phal	... Hijli badam
Grape fruit ...	... Bilati Batabi	... Bilati Batabi, or Jambura
Jambu fruit ...	... Gulabjamam	... Gulab jam
Melon, water ...	... Turbuz. ...	... Tarmuj
Papayya ...	... Papita ...	... Pepa
Pomeloe ...	... Batabi, chakatra	... Batabi, Jambura
Quince ...	... Bihi ...	... Quince

## NUTS AND OIL SEEDS

ENGLISH		HINDUSTHANI		BENGALI
Wood apple	...	Kaith	...	Badari, Kul
Zizyphus (Indian plum)	...	Baer	...	Kathbael
Almond	...	Badam	...	Bilati badam
Cashew nut	...	Kaju	...	Hijli badam
Gingelly seeds	...	Cash Til	...	Til
Linseed seeds	...	Alsi	...	Tishi
Pistachio nut	...	Pista	...	Pesta
Walnut	...	Akhrot	...	Akhrot

## MISCELLANEOUS FOODSTUFFS

Arecanut	...	Supari	...	Supari
Jaggery	...	Gur	...	Gur
Toddy	...	Tari	...	Tari

## CONDIMENTS AND SPICES

Asafoetida	...	Hing	...	Hing
Cardamom	...	Elaychi	...	Elachi
Cloves	...	Laung	...	Laung
Coriander	...	Dhania	...	Dhania
Cumin	...	Zira	...	Zira
Fenugreek seeds	...	Methi	...	Methi
Garlic	...	Lashun	...	Rashun
Ginger	...	Adrak	...	Ada
Long pepper	...	Pipli	...	Pipli
Mace	...	Javitri	...	Jayitri
Nutmeg	...	Jaiphal	...	Jaiphal
Omum	...	Ajwan	...	Joan
Pepper	...	Kall mirich	...	Gol mirich
Turmeric	...	Haldi	...	Halud

### APPENDIX III

## LIST OF COMMON FOODSTUFFS RICH IN CALCIUM AND IRON.

### Foodstuffs particularly rich both in Calcium and Iron:—

*Cereals*—Whole wheat flour, Ragi (Makra, Bajri).

*Animal foods*—Egg-yolk, Crab muscle.

*Legumes*—Dried beans—Bengal gram (Chola), Black gram (Kalai), Green gram (Mung), Khesari, Lentil (Musur), Red gram (Arahar), Soyabean.

*Vegetables (Leafy)*—Amarnath leaves (Lal sag), Gram leaves (Chola sag), Betel leaves (Pan), Cabbage-outer green leaves, Carrot leaves (Gajar pata), Celery (Ajwan pata, Randhuni sag), Coriander leaves (Dhania sag), Drumstick leaves (Saijna pata), Fenugreek leaves (Methi sag), Garden cress (Halim), Mint (Paudina), Neem leaves-tender, Parsley, Rape leaves (Sarisa sag), Spinach (Palang sag), Yeast.

*Dried fruits and Seeds*—Apricot (Khubani), Pestachio nut (Pesta), Walnut (Akhrot), Dates (Khejur), Gingelly seeds (Til), Mustard seeds (Sarisa), Tamarind pulp (Tetul).

*Condiments*—Asfoetida (Hing), Cardamom (Elachi), Cloves (Laung), Coriander (Dhania), Cumin (Jira), Fenugreek seed (Methi), Long pepper (pipili), Black pepper (Gol marich), Mace (Javitri), Omum (Joan), Turmeric (Halud).

### Foodstuffs particularly rich only in Calcium:—

*Animal foods*—Milk (Cow, Buffalo, Goat), Curd (Dahi), Skimmed milk powder, Cheese.

*Vegetables and Dried fruits*—Artichoke (Hatichak), Beet-root, Curry leaves (Bursunga), Ipomea leaves (Kalmi sag), Lettuce-tender, Onion-big, Parsnips, Turnip tops (Salgom pata), Carrots (Gajar), Jack fruit seeds, Wood apple (Kathbael), Almonds, Currants.  
apple (Kathbael), Almonds, Currants.

### Foodstuffs particularly rich only in Iron:—

*Animal foods*—Glandular tissues (Liver, Spleen, Kidney, Heart).

*Cereals*—Bajra, Barley, Cholam (Juar), Maize flour, Oatmeal, Samai (China).

*Vegetables and Dried fruits*—Beet-green, Onion stalks, Mango-green, Peas-dry, Cashew nut (Hijli badam), Raisins (Kismis), Figs-dry, Prunes-dry, Coconut-dry, Jaggery (Gur).



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