

FINDING NUTRITIVE VALUE OF FOODSTUFFS

HOW TO STUDY THIS SECTION

The main focus of this section is on learning the salient features and the use of the food composition tables for the purpose of finding the nutritive value of foodstuffs. The section is divided into three subsections—each discussing some aspect of food composition tables.

The use of food composition tables involves simple mathematical calculations. In this section steps related to these calculations are explained by means of examples. Do spend sufficient time on each step.

After reading this section, read through Blocks 1, 2 and 3 and find out places where food composition tables are made use of/any reference is made to them/you can make use of them. This will enable you to become familiar with the various ways in which food composition tables are used in the study of nutrition.

SKILL TO LEARN FROM THIS SECTION

How to use the food composition tables for determining the nutritive value of foodstuffs.

Structure

- 2.0 Introduction
- 2.1 What are Food Composition Tables ?
- 2.2 Finding the Nutritive Value of Foodstuffs Using Food Composition Tables
- 2.3 Things which Food Composition Tables Can't Tell
- 2.4 Summing Up

2.0 INTRODUCTION

When you open up your practical Manual/a magazine or a recipe book, you get tempted to try out the recipes given there. You can easily measure the ingredients of a given recipe using your practical kit and prepare the dish accordingly. Supposing someone at this stage asks you — Is this dish prepared by you nutritious? How much energy and protein does it provide? Is it rich in iron also? What will be your answer?

For answering these questions you should have the information regarding the nutritive value of different foods i.e., the amount of energy, protein and other nutrients contained in different foodstuffs.

You can get this information from the 'Food Composition Tables'. The Food Composition Tables for Indian foods give the nutrient content or composition of almost all common Indian foodstuffs available in different parts of India (See Annexure 2).

How are these tables made? Let us find out. The pioneer institution which has worked in this field in India is the National Institute of Nutrition, Hyderabad (a unit of Indian Council of Medical Research). A group of scientists from this institute analyzed different foodstuffs in their laboratory. They used scientific procedures and techniques to determine the energy, protein, fat, carbohydrate, vitamin and mineral content of each foodstuff. In this way, the scientists determined the nutrient content of almost all common Indian foodstuffs. All the information obtained from the

laboratory tests was then compiled in the form of food composition tables. The Indian Council of Medical Research published these tables in a book titled "Nutritive Value of Indian Foods". The book was prepared by C. Gopalan, B.V. Ramasastri and S. C. Balasubramanian and was first published in 1975. It has been revised by B. S. Narasinga Rao, Y. G. Deosthale and K.C. Pant in 1989. The new revised and updated edition (1989) is now available.

A part of the food composition tables from the book is given in Annexure 2. However, the style of presentation in this section is different from that given in the book. This modification is made to make things simpler for you.

If you want to use the book "Nutritive Value of Indian Foods" as a crosscheck for the information provided in Annexure 2 or for further reference, you can get it from the library at your Study Centre or buy a copy from Indian Council of Medical Research, Ansari Road, New Delhi. The book costs Rs. 18.

The present section deals with the study of salient features of the food composition tables and how to use them for the purpose of finding the nutritive value of foodstuffs. You will also find the discussion on certain limitations of these tables useful.

Objectives

After going through this section, you will be able to :

- identify the salient features of food composition tables
- make use of food composition tables for
 - finding out nutritive value of different foodstuffs
 - comparing nutritive value of foodstuffs and
 - calculating and comparing nutritive value of dishes/snacks.

2.1 WHAT ARE FOOD COMPOSITION TABLES ?

You can find your way through the food composition tables by carefully looking at them. Observe the food composition tables given in Annexure 2 and look for some of its salient features.

- The first thing which you will notice is that the tables provide information regarding the energy, protein, fat, carbohydrate, fibre, mineral (calcium, phosphorus, iron) and vitamin (vitamin A, vitamin C, thiamine, riboflavin, niacin, and folic acid) content of commonly used foodstuffs in Indian households.
- Another important point which you can note by carefully looking at the tables is the classification of foodstuffs into food groups. You are familiar with these food groups. These are energy-giving foods, body-building foods and protective/regulatory foods. The various categories of foodstuffs included in each food group are listed below :

Energy-giving foods

Cereals
Roots and tubers
Sugars
Fats and oils

Body-building foods

Milk and milk products
Pulses
Flesh foods

Protective/regulatory foods

Leafy vegetables
Other vegetables
Fruits

Miscellaneous

Nuts and oilseeds
Condiments and spices

- You should also become familiar with the various columns of the food composition tables. Here is a small extract of the table (from Annexure 2) indicating the columns). As you can see, it has 17 columns.

Column 1 indicates serial number and column 2 gives name of foodstuff under each food group.

Columns 3 – 17 tell you the amount of various nutrients in 100 g edible portion of raw foodstuffs.

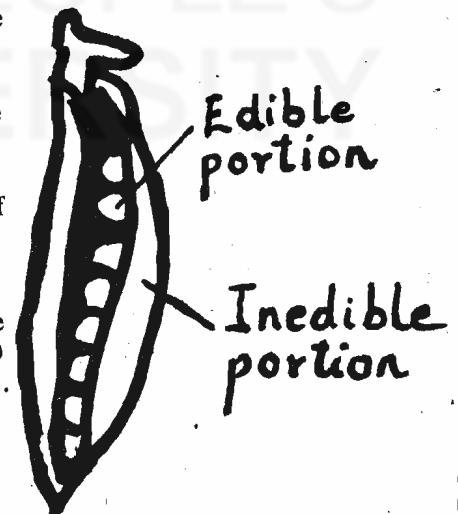
S. No.	Name of the Foodstuff	Moisture g	Protein g	Fat g	Fibre g	Carbo-hydrate g	Energy Kcal
1	2	3	4	5	6	7	8
9	10	11	12	13	14		
15	16	17					

- What is the meaning of the term edible portion mentioned in the table? When we buy foodstuffs like vegetables, fruits or nuts from the market, we usually do not consume them as such. We throw away the skin or seeds/stalks and consume only the rest. Similarly, when we buy peas from the market, we actually consume seeds/peas and throw away the pods/shells. We throw away thick stalks from spinach and consume only the leaves. While in the case of other foodstuffs like milk, sugar, atta, maida and suji, we consume all of what we buy. The portions of the foodstuffs which are really consumed/eaten are known as edible portion. Inedible portions are not consumed or eaten and are thrown away.

It means that foodstuffs like milk, atta, maida, suji, rice, pulses, sugar, jaggery, etc. are 100 per cent edible. While others like vegetables, fruits, nuts and oilseeds are not 100 per cent edible.

Remember that the nutrient content of foodstuffs given in the food composition tables is based only on the 100 g edible portion of the raw foodstuffs.

After learning about the salient features of food composition tables, let us focus our attention on various ways in which you can make use of food composition tables.



2.2 FINDING THE NUTRITIVE VALUE OF FOODSTUFFS USING FOOD COMPOSITION TABLES

You can make use of food composition tables in any one of the following ways.

- Comparison of the nutrient content of 100 g edible portion of raw foodstuffs
- Calculation of the nutrient content of edible portions of foodstuffs for amounts other than 100 g.

C) Calculation of the nutrient content of a meal/dish.

Let us understand each of the above mentioned uses of the food composition tables.

A) COMPARISON OF THE NUTRIENT CONTENT OF 100 g EDIBLE PORTION OF RAW FOODSTUFFS

This aspect is explained here by means of the following example :

Compare the energy, and protein and carotene values of 100 g edible portion of wheat and spinach.

For answering the question open the food composition tables given in Annexure 2 and look for the following :

- IDENTIFY THE FOOD GROUP TO WHICH THEY BELONG
Wheat is an energy-giving food and placed in the category of cereals. Spinach is a protective/regulatory food placed in the category of leafy vegetables.
- FIND OUT THE RELEVANT PAGE NO. AND SERIAL NO.
Values for wheat are on page 43 Serial no. 15. Values for spinach are on page 45 Serial No. 116.
- REFER TO THE APPROPRIATE COLUMNS
Column 8 (energy), column 4 (Protein) and column 12 (carotene)

ANSWER: 100 g edible portion of wheat has 364 Kcal, 4.8 g protein and 29 µg carotene while 100 g edible portion of spinach has 26 Kcal, 2 g protein and 5580 µg carotene.

You have to follow similar steps for determining the nutrient content of 100 g edible portion of any other foodstuff.

ACTIVITY 1

Find out the protein, thiamine, calcium, iron and vitamin C content of 100 g edible portion of rice, wheat, jaggery, egg, spinach, groundnut and butter (using the food composition tables given in Annexure 2). Note down your results in the given chart.

Foodstuff	per 100 g edible portion of foodstuffs				
	Protein (g)	Thiamine (mg)	Calcium (mg)	Iron (mg)	Vitamin C (mg)
Rice					
Wheat					
Jaggery					
Egg					
Spinach					
Groundnut					
Butter					

Answer the following on the basis of results obtained

- a) Which foodstuff among these has maximum protein ?
.....
- b) Which foodstuffs among these are rich in almost all nutrients ?
.....
.....
- c) Which foodstuffs among these are rich in energy but poor in other nutrients ?
.....
.....

B) CALCULATION OF NUTRIENT CONTENT OF FOODSTUFFS FOR AMOUNTS OTHER THAN 100 g

You know that the food composition tables give nutrient content of only the

100 g edible portion of foodstuffs. If you want to calculate energy and protein content of 75 g spinach and 150 g wheat, how will you do it? Here you will have to apply simple mathematical calculations. Let us see how.

Wheat

a) 100 g wheat has = 346 Kcal
 150 g wheat has = $\frac{346 \times 150}{100}$
 = 529 Kcal

Spinach

a) 100 g spinach has = 26 Kcal
 75 g spinach has = $\frac{26 \times 75}{100}$
 = 19.50 Kcal

b) 100 g wheat = 4.8 g protein
 150 g wheat = $\frac{4.8 \times 150}{100}$
 = 7.2 g protein

b) 100 g spinach has = 2 g protein
 75 g spinach has = $\frac{2 \times 75}{100}$
 = 1.5 g protein

Ans. 150 g wheat has 529 Kcal and
7.2 g protein

75 g spinach has 19.50 Kcal
and 1.5 g protein

Similarly, you can use the information given in the table for calculating the nutrient content of any foodstuff in any amount. While doing these calculations, you should also know how to express the values for various nutrients and how to record the results. Let us pay attention to these aspects also.

i) *How to express the values for various nutrients:* By carefully analyzing food composition tables (Annexure 2), you will find that values for some nutrients are expressed in round figures and others till the first decimal place or second decimal place (as shown in the following Chart).

CHART 1

Nutrient	Way to express values	Example
Energy (Kcal)	only in round figures	346 348
Protein (g)	till first decimal place	2.4 20.5
Minerals		
Calcium (mg)	only in round figures	50 45
Iron (mg)	till first decimal place	12.1 10.2
Vitamins		
Vitamin A - beta carotene (µg)	only in round figures	4228 5425
- Retinol (µg)	only in round figures	900 400
Vitamins of the B complex group (mg)	till second decimal place (except folic acid)	0.26 0.23
Vitamin C (mg)	only in round figures	26 13

Do remember that you have to express your results for each nutrient in the same form and same unit as is given in food composition tables or shown in this chart.

While calculating the nutritive value of foodstuffs, you would notice that you may not get results/numerical values in a form expressed in food composition tables or Chart 1. For example, energy content of 75 g spinach came to 19.5 Kcal. However, as you know energy values are expressed in round figures (see Chart 1). You will write that energy content of 75 g spinach is 20 Kcal instead of 19.5 Kcal. Similarly you need rounding off to express the values for other nutrients also, if needed. If iron value

comes to 12.21 mg, you will make it 12.2 mg (till first decimal place). Go through Box 2.1, if you want to know how to round off the numerical values.

Box 2.1 Mathematical Jugglery — Rounding Off the Figures

You must have observed that while doing calculations you often get values/results till second, third or fourth decimal place. You have to round off these values either in round figures/till first decimal place or second decimal place in order to present them in a proper form. Rounding off involves simple mathematical jugglery. You should know how to go about it.

For rounding off, always look at the last digit of the numerical value—

- If it is less than 5, remove the last digit from the numerical value and let the remaining figure remain as it is.
- If the last digit is 5 or more than 5 remove the last digit and add 1 to the second last digit.

Let us try to understand this by the following examples:

A) Rounding off till the second decimal place.

1.025	1.026	1.023
↓	↓	↓
1.03	1.03	1.02

B) Rounding off till the first decimal place.

11.25	11.29	11.21
↓	↓	↓
11.3	11.3	11.2

C) Rounding off to whole (round) figures.

19.2	19.5	19.8
↓	↓	↓
19	20	20

ii) *How to record your results*: In practice all related calculations can be done on a rough page or in the rough column on the same page and results can be presented in tabular form as shown here :

Foodstuff	Amount (g)	Energy (Kcal)	Protein (g)	Other nutrients	Rough column
Wheat	150	529	7.2		$\frac{346 \times 150}{100} = 529 \text{ Kcal}$ $\frac{4.8 \times 150}{100} = 7.2 \text{ g protein}$
Spinach	75	20	1.5		$\frac{26 \times 75}{100} = 19.5 \text{ Kcal}$ $\frac{2 \times 75}{100} = 1.5 \text{ g protein}$

ACTIVITY 2

Calculate the energy, protein, carotene and iron content of the specific amounts of the edible portion of the following foodstuffs:

- Rice (g) — 30
- Jaggery (g) — 25
- Egg (g) — 50
- Groundnut (g) — 20
- Butter (g) — 80

Foodstuff	Amount (g)	Energ. (Kcal)	Protein (g)	Carotene (μ g)	Iron (mg)	Rough Column
Rice	30					
Jaggery	25					
Egg	50					
Groundnut	20					
Butter	80					

C) CALCULATION OF THE NUTRIENT CONTENT OF A SNACK OR A DISH

So far you have learnt calculation of nutrient content of foodstuffs. However, the meals you consume do not consist of individual foodstuffs like rice, egg, jaggery, wheat or spinach. Instead, these foodstuffs are a part of various dishes/snacks included in a meal. If you want to calculate the nutritive value of a meal/dish, you will be required to note down each ingredient of a dish/snack and then calculate the nutritive value. Given below is the proforma which you can use for recording your results.

Name of the dish/snack _____

Ingredients	Amount (g)	Nutrient content		
		Energy (Kcal)	Protein (g)	Others -
1.				
2.				
3.				

ACTIVITY 3

Alka is pregnant. She has been asked by her doctor to eat energy/protein rich snacks (providing at least 200 Kcal energy and 8-10 g protein per serving) in between the main meals. Given below are names (and ingredients) of some snacks gathered by her from the various books/magazines. Using the food composition table calculate the energy and protein content of these snacks and indicate which of them is suitable/not suitable for her.

- 1) Besan-spinach cheela (besan-50 g, spinach 50 g, onion 30 g, oil 10 g)
- 2) Bread roll (bread 2 large pieces (60 g), potato 60 g, onion 20 g, oil 10 g).
- 3) Bread pakora (bread 30 g, besan 20 g, potato 50 g, oil 10 g)

Use the following proforma for recording your results

Name of — Besan spinach cheela
the dish

Ingredients	Amount (g)	Energy (Kcal)	Protein (g)
Besan	40		
Spinach	50		
Onion	30		
Oil	10		
Total			

Total energy content _____ Total protein content _____

The dish is suitable/not suitable for Alka (put a \checkmark mark against the right choice)

2) Name of the dish — Bread roll

Ingredients	Amount (g)	Energy (Kcal)	Protein (g)
Bread	60		
Potato	60		
Onion	20		
Oil	10		
Total			

Total energy content _____ g. Total protein content _____ g.

The dish is suitable/not suitable for Alka (put a ✓ mark against the right choice)

3) Name of the dish — Bread pakora

Ingredients	Amount (g)	Energy (Kcal)	Protein (g)
Bread	30		
Besan	20		
Potato	50		
Oil	10		
Total			

2.3 THINGS WHICH FOOD COMPOSITION TABLES CAN'T TELL

We hope by now you can use food composition tables for finding the nutritive value of any foodstuff mentioned in Annexure 2. However, while making use of the food composition tables you should be aware of the fact that food composition tables have certain limitations also. They cannot tell you all you want to know for meal planning.

Let us see what these limitations are ?

1) You may be surprised to know that the nutrient content of the rice which you bought last year is not exactly similar to the nutrient content of the rice bought this year or to the nutrient content of the samples of rice whose values are given in food composition tables.

There are various factors responsible for these differences — like the variety of plant from which it is obtained, the region where it is grown, type of soil, the method of cultivation used and season in which it is best available.

It means if, you analyse different samples of the same foodstuff in a laboratory, you may not get the similar values of protein or vitamin A for all the samples. Although the variation will be negligible in most cases. On the basis of this, you can say that the food composition tables give only the approximate nutrient content of foodstuffs rather than the exact values. As the difference between the exact values and values

given in the tables is not very significant; you can use these tables as such without any modification.

2) When you determine the nutrient content of a dish/or a snack, you calculate only the nutrient content of raw foodstuffs. This is because the food composition tables give only the nutrient content of raw foodstuffs. They do not take into account the losses of various nutrients in cooking and processing. If you find out that raw ingredients of besan-spinach cheela have 12 mg vitamin C, you may not get the same amount after cooking. The losses of the nutrients will depend on the type of method used for cooking (you will learn more about the losses of nutrients in cooking in Section 3).

You should take precautions to prevent the loss of nutrients in pre-preparation as well as cooking. Planning diets/meals on the basis of recommended dietary intakes can also be helpful. You have learnt that recommended dietary intakes have enough margin of safety for nutrient losses. How to make use of food composition tables and RDIs in planning balanced diets is discussed in Sections 5 and 6 of this manual.

3) Remember that the presence of a nutrient in a particular foodstuff does not mean that the body will get it in the same amounts after ingestion. This is because some of the nutrients like calcium, iron, beta carotene, protein, etc. are not completely absorbed in the body. You have learnt about the factors affecting the absorption of these nutrients in Units 4 and 5 of Block 2. The recommended dietary intakes also make allowances for the bioavailability of the particular nutrient in the body after absorption of nutrients. By planning diets/meals/snacks according to recommended dietary intakes, you can take care of this point also.

2.4 SUMMING UP

In this section, you have acquainted yourself with the various aspects of food composition tables. On the basis of the information provided in the section, you can make use of the tables for finding the nutritive value of foodstuffs. A part of food composition tables from the book titled 'Nutritive Value of Indian foods' (1989) is given in Annexure 2. Let us revise all what you have read about the tables.

The tables provide information regarding the energy, protein, vitamin and mineral content of commonly eaten Indian foodstuffs. The values for various nutrients are given only for the 100 g edible portion of raw foodstuffs. The foodstuffs have been classified into three groups: energy-giving foods (cereal, roots and tubers, sugar, fats and oils); body-building foods (milk and milk products, pulses, flesh foods, fish and sea foods); protective/regulatory foods (leafy vegetables, other vegetables, fruits). In addition, some of the foodstuffs like nuts and oilseeds and condiments/spices are placed in the category of miscellaneous foodstuffs.

All what you have read about the tables can be used for finding the nutritive value of 100 g edible portion of raw foodstuffs. You can also use the tables for finding the nutritive value of foodstuffs in amounts other than 100 g. You have to do simple mathematical calculations, as explained in the section. On this basis, you can also use the food composition tables for finding the nutrient content of a dish/snack or a meal (if you know all the ingredients and their amounts) needed for the preparations.

The section also talks about certain aspects of food composition tables which can be called its limitations. The limitations can be taken care of, if you plan diets/meals/snacks/according to recommended dietary intakes and select the right method of cooking.

ANNEXURE 2
THE FOOD COMPOSITION TABLES
All Values are per 100 g edible portion of raw foodstuffs

S. No.	Name of the foodstuff	Moisture	Protein	Fat	Fibre	Carbohy- drate	Ener- gy	Cal- cium	Phos- phorus	Iron	Vita- min A Caro- tene	Reti- nol	Thia- mine	Ribo- flavin	Nia- cin	Folic Acid	Vita- min C
		g	g	g	g	g	Kcal	mg	mg	mg	µg	µg	mg	mg	mg	µg	mg

ENERGY-GIVING FOODS**Cereals**

1.	Bajra	12.4	11.6	5	1.2	67.5	361	42	296	8.0	132	0	0.33	0.25	2.3	45.5	0
2.	Barley	12.5	11.5	1.3	3.9	69.6	336	26	215	1.67	10	0	0.47	0.20	5.4	—	0
3.	Bread (wheat White)	39	7.8	0.7	0.2	51.9	245	11	—	1.1	—	—	0.07	—	0.7	—	—
4.	Bread (wheat Brown)	39	8.8	1.4	1.2	49.0	244	18	—	2.2	—	—	0.21	—	2.5	—	—
5.	Jowar	11.9	10.4	1.9	1.6	72.6	349	25	222	4.1	47	0	0.37	0.13	3.1	20	0
6.	Maize, dry	14.9	11.1	3.6	2.7	66.2	342	10	348	2.3	90	0	0.42	0.10	1.8	20.0	0
7.	Maize, tender	67.1	4.7	0.9	1.9	24.6	125	9	121	1.1	32	0	0.11	0.17	0.6	—	6
8.	Ragi	13.1	7.3	1.3	3.6	72	328	344	283	3.9	42	0	0.42	0.19	1.1	18.3	0
9.	Rice, Parboiled hand pounded	12.6	8.5	0.6	—	77.4	349	10	280	2.8	9	0	0.27	0.12	4.0	—	0
10.	Rice, parboiled milled	13.3	6.4	0.4	0.2	79.0	346	9	143	1.0	—	0	0.21	0.05	3.8	11.0	0
11.	Rice, raw hand pounded	13.3	7.5	1.0	0.6	76.7	346	10	190	3.2	2	0	0.21	0.16	3.9	—	0
12.	Rice, raw milled	13.7	6.8	0.5	0.2	78.2	345	10	160	0.7	0	0	0.06	0.06	1.9	8.0	0
13.	Rice, flakes	12.2	6.6	1.2	0.7	77.3	346	20	238	20.0	0	0	0.21	0.05	4.0	—	0
14.	Rice, puffed	14.7	7.5	0.1	0.3	73.6	325	23	150	6.6	0	0	0.21	0.01	4.1	—	0
15.	Wheat, whole	12.8	11.8	1.5	1.2	71.2	346	41	306	5.3	64	0	0.45	0.17	5.5	36.6	0
16.	Wheat flour, whole	12.2	12.1	1.7	1.9	69.4	341	48	355	4.9	29	0	0.49	0.17	4.3	35.8	0
17.	Wheat flour, refined	13.3	11.0	0.9	0.3	73.9	348	23	121	2.7	25	0	0.12	0.07	2.4	—	0
18.	Wheat, semolina	—	10.4	0.8	0.2	74.8	348	16	102	1.6	—	—	0.12	0.03	1.6	—	0
19.	Wheat, vermicelli	11.7	8.7	0.4	0.2	78.3	352	22	92	2.0	0	0	0.19	0.05	1.8	—	0

Roots and Tubers

20.	Potato	74.7	1.6	0.1	0.4	22.6	97	10	40	0.5	24	0	0.1	0.01	1.2	7.0	17
21.	Sweet potato	68.5	1.2	0.3	0.8	28.2	120	46	50	0.2	6	0	0.08	0.04	0.7	—	24
22.	Tapioca	59.4	0.7	0.2	0.6	38.1	157	50	40	0.9	—	—	0.05	0.1	0.3	—	25
23.	Yam, elephant	78.7	1.2	0.1	0.8	18.4	79	50	34	0.6	260	0	0.06	0.07	0.7	—	0
24.	Yam, ordinary	69.9	1.4	0.1	1.0	26.0	111	35	20	1.2	78	0	0.07	—	0.7	17.5	—
25.	Yam, white	12.2	0.2	0.2	—	87.1	351	10	10	1.3	—	—	—	—	—	—	—

Sugar

26.	Sugar	0.4	0.1	0	—	99.4	398	12	1	0.2	—	—	—	—	—	—	—
27.	Honey	20.6	0.3	0	—	79.5	319	5	16	0.7	—	—	—	—	—	—	—
28.	Jaggery, cane	3.9	0.4	0.1	—	95	383	80	40	2.6	—	—	—	—	—	—	—
29.	Jaggery, coconut Palm	10.3	1.0	0.2	—	83.5	340	1638	62	—	—	—	—	—	—	—	—
30.	Jaggery, date Palm	9.6	1.5	0.3	—	86.1	353	363	62	—	—	—	—	—	—	—	—
31.	Jaggery, fan Palm	8.6	1.0	0.1	—	98.5	359	225	44	—	—	—	—	—	—	—	—
32.	Jaggery, sago Palm	9.2	2.3	0.1	—	84.7	349	1252	372	—	—	—	—	—	—	—	—

Fats and Edible Oils

33.	Butter	19	—	81.0	—	—	729	—	—	—	—	960	—	—	—	—	—
34.	Ghee (cow)	—	—	100.0	—	—	900	—	—	—	—	600	—	—	—	—	—
35.	Ghee (buffalo)	—	—	100.0	—	—	900	—	—	—	—	270	—	—	—	—	—
36.	Cooking oil (groundnut, gingelly, palmolein, mustard, coconut etc.)	—	—	100.0	—	—	900	—	—	—	0	0	—	—	—	—	—
46 37.	Hydrogenated oil	—	—	100.0	—	—	900	—	—	—	—	750	—	—	—	—	—

**Finding Nutritive Value
of Foodstuffs**

S. No.	Name of the foodstuff	Mois- ture	Pro- tein	Fat	Fibre	Carbo- hy- drate	Ener- gy	Cal- cium	Phos- phorus	Iron	Vita- min A caro- tene	Reti- nol	Thia- mine	Ribo- flavin	Nia- cin	Folic Acid	Vita- min C
		g	g	g	g	g	Kcal	mg	mg	mg	µg	µg	mg	mg	mg	µg	mg

BODY-BUILDING FOODS

Milk and milk products

38.	Milk, buffalo's	81.0	4.3	6.5	—	5.0	117	210	130	0.2	0	48	0.04	0.10	0.1	5.6	1
39.	Milk, cow's	87.5	3.2	4.1	—	4.4	67	120	90	0.2	6	52	0.05	0.19	0.1	8.5	2
40.	Milk, goat's	86.8	3.3	4.5	—	4.6	72	170	120	0.3	0	55	0.05	0.04	0.3	1.3	1
41.	Milk, human	88.0	1.1	3.4	—	7.4	65	28	11	—	0	41	0.21	0.02	—	—	3
42.	Curds, cow's milk	89.1	3.1	4.0	—	3.0	60	149	93	0.2	0	31	0.05	0.16	0.1	12.5	1
43.	Butter milk	97.5	0.8	1.1	—	0.5	15	30	30	0.1	—	—	—	—	—	—	—
44.	Skimmed milk	92.1	2.5	0.1	—	4.6	29	120	90	0.2	—	—	—	—	—	0.1	1
45.	Channa, cow's milk	57.1	18.3	20.8	—	1.2	265	208	138	—	0	110	0.07	0.02	—	—	3
46.	Channa, buffalo's milk	54.1	13.4	23	—	7.9	292	480	277	—	—	—	—	—	—	—	—
47.	Cheese	40.3	24.1	25.1	—	6.3	348	790	520	2.1	0	82	—	—	—	—	—
48.	Khoa, whole buffalo milk	30.6	14.6	31.2	20.5	421	650	420	5.8	—	—	—	—	—	—	—	—
49.	Khoa, cow's milk	25.2	20.0	25.9	—	24.9	413	956	613	—	0	149	0.23	0.41	0.4	—	6
50.	Khoa, skimmed buffalo milk	46.1	22.3	1.6	—	25.7	206	990	650	2.7	—	—	—	—	—	—	—

Pulses

51.	Bengal gram, whole	9.8	17.1	5.3	3.9	60.9	360	202	312	4.6	189	0	0.3	0.15	2.9	186	3
52.	Bengal gram, dal	9.9	20.8	5.6	1.2	59.8	372	56	331	5.3	129	0	0.48	0.18	2.4	147.5	1
53.	Bengal gram, roasted	10.7	22.5	5.2	1.0	58.1	369	58	340	9.5	113	0	0.2	—	1.3	139	0
54.	Black gram, dal	10.9	24.0	1.4	0.9	59.6	347	154	385	3.8	38	0	0.42	0.2	2	132	0
55.	Cow pea	13.4	24.1	1.0	3.8	54.5	323	77	414	8.6	12	0	0.51	0.2	1.3	133	0
56.	Green gram, whole	12.4	24.0	1.3	4.1	56.7	331	124	326	4.4	94	0	0.47	0.27	2.1	—	0
57.	Green gram, dal	10.1	24.5	1.2	0.8	59.9	348	75	405	3.9	49	0	0.47	0.21	2.4	140	0
58.	Horse gram, whole	11.8	22.0	0.9	5.3	57.2	321	287	311	6.8	71	0	0.42	0.20	1.5	—	1
59.	Lentil	12.4	25.1	3.7	0.7	59.0	343	69	293	7.6	270	0	0.45	0.20	2.6	36	0
60.	Moth beans	10.8	23.6	1.1	6.5	50.5	330	202	230	9.5	9	0	0.45	1.5	—	2	—
61.	Rajmah	12.0	22.7	1.3	7.8	60.6	346	260	410	5.1	—	—	—	—	—	—	—
62.	Red gram, dal	13.4	22.3	1.7	1.1	59.0	335	73	304	2.7	132	0	0.45	0.19	2.9	103	0
63.	Soyabean	8.1	43.2	19.5	3.7	20.9	432	240	690	10.4	426	0	0.73	0.39	3.2	100	—

Meat and Poultry

64.	Beef (muscle)	74.3	22.6	2.6	—	—	114	10	190	0.8	0	18	0.15	0.04	6.4	—	2
65.	Buffalo meat	78.7	19.4	0.9	—	—	86	3	189	—	—	—	—	—	—	7.8	—
66.	Egg, duck	71.0	13.5	13.7	—	0.8	181	70	260	2.5	540	360	0.12	0.26	0.2	80	—
67.	Egg, hen	73.7	13.3	13.3	—	—	173	60	220	2.1	600	360	0.1	0.4	0.1	78.3	—
68.	Fowl (chicken)	72.2	25.9	0.6	—	—	109	25	245	—	—	—	—	0.14	—	6.8	—
69.	Goat meat (lean)	74.2	21.4	3.6	—	—	118	12	193	—	—	—	—	—	—	4.5	—
70.	Liver (goat)	76.3	20.0	3.0	—	—	107	17	279	—	—	—	—	—	—	176.2	—
71.	Liver (sheep)	70.4	19.3	7.5	—	1.3	150	10	380	6.3	0	6690	0.36	1.70	17.6	188.0	20
72.	Mutton (muscle)	71.5	18.5	13.3	—	—	194	150	150	2.5	0	9	0.18	1.14	6.8	5.8	—
73.	Pork (muscle)	77.4	18.7	4.4	—	—	114	30	200	2.2	0	0	0.54	0.09	2.8	—	2

Fish and other sea foods

74.	Anchovy	69.3	19.3	9.6	—	0.2	164	143	174	1.5	—	—	—	—	—	—	—
75.	Bhakti, fresh	79.9	14.9	0.8	—	3.0	79	480	350	3.1	—	—	—	—	0.7	—	10
76.	Bhakti, dried	20.1	60.2	2.0	—	1.8	266	939	347	15.0	—	—	—	—	—	—	—
77.	Bombay duck, dried	16.7	61.7	4.0	—	2.5	293	1389	240	19.1	—	—	—	—	—	—	—
78.	Cat fish	77.1	21.4	—	—	—	86	10	230	—	—	—	—	—	2.5	—	—

Practical Manual -- Part I

S. No.	Name of the foodstuff	Moisture	Protein	Fat	Fibre	Carbo-hydrate	Ener-gy	Cal-	Phos-cium	Iron	Vita-min A	Thia-mine	Ribo-flavin	Nia-cin	Folic Acid	Vita-min C	
		g	g	g	g	g	Kcal	mg	mg	mg	µg	µg	mg	mg	µg	mg	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
79.	Crab (muscle)	83.5	8.9	1.1	—	3.3	59	1370	150	21.2	780	0	—	—	3.1	—	—
80.	Crab, small	65.3	11.2	9.8	—	9.1	169	1606	253	—	—	—	—	—	—	—	—
81.	Herring, Indian	72.8	23.3	23.2	—	2.2	119	429	305	9.3	—	—	—	—	—	—	—
82.	Herring, Ox-eyed	73.7	20.7	2.2	—	0.8	106	429	131	6.3	—	—	—	—	—	—	—
83.	Hilsa	53.7	21.8	19.4	—	2.9	273	180	280	2.1	—	—	—	—	2.8	—	24
84.	Indian Whiting	77.1	19.2	0.6	—	1.6	89	71	262	2.2	—	—	—	—	—	—	—
85.	Katla	73.7	19.5	2.4	—	2.9	111	530	235	0.9	—	—	—	—	0.8	—	—
86.	Lobster	77.3	20.5	0.9	—	0	90	16	279	—	—	—	—	—	—	—	—
87.	Mackerel	77.3	18.9	1.7	—	0.5	93	429	305	4.5	—	—	—	—	—	—	—
88.	Mullet	69.9	19.1	7.8	—	2.1	155	357	175	4.4	—	—	—	—	2.6	—	—
89.	Mussel, fresh water	79.5	14.5	1.6	—	2.1	81	592	406	—	—	—	—	—	—	—	—
90.	Oil Sardine	76.5	19.6	2.0	—	0.1	97	357	349	6.1	—	—	—	—	—	—	—
91.	Pomfret, black	74.5	20.3	2.6	—	1.5	111	286	306	2.3	—	—	—	—	—	—	—
92.	Pomfret, white	78.4	17.0	1.3	—	1.8	87	200	290	8.9	—	—	—	0.15	2.6	—	—
93.	Prawn	77.4	19.1	1.0	—	0.8	89	323	278	5.3	0	0.01	0.1	4.8	—	—	—
94.	Rohu	76.7	16.6	1.4	—	4.4	97	650	175	1.0	—	—	0.05	0.07	0.7	—	22
95.	Sardine	78.1	21.0	1.9	—	—	101	90	360	2.5	—	—	—	—	2.6	—	—
96.	Shrimp, small dried	6.0	68.1	8.5	—	—	349	4384	1160	—	—	—	—	—	—	18.6	—
97.	Singhala	61.0	20.9	3.1	—	13.9	167	98	152	1.8	—	—	—	—	—	—	—
98.	Surmai, fresh	63.0	19.9	1.4	—	—	92	92	161	2	—	—	—	—	—	—	—
99.	Surmai, dried	43.3	38.6	6.2	—	—	210	148	172	4.4	—	—	—	—	—	—	—

PROTECTIVE/REGULATORY FOODS

Leafy Vegetables

100.	Amaranth, tender	85.7	4.0	0.5	1.0	6.1	45	397	83	3.5	5520	0	0.03	0.3	1.2	149	99
101.	Bathua leaves	89.6	3.7	0.4	0.8	2.9	30	150	80	4.2	1740	0	0.01	0.14	0.6	—	35
102.	Cabbage	91.9	1.8	0.1	1.0	4.6	27	39	44	0.8	120	0	0.06	0.09	0.04	23	124
103.	Cellery leaves	88.0	6.3	0.6	1.4	1.6	37	230	140	6.3	3990	0	0	0.11	1.2	—	62
104.	Colocasia leaves (black variety)	78.8	6.8	2.0	1.8	8.1	77	460	125	1.0	12000	0	0.06	0.45	1.9	—	63
105.	Colocasia leaves (green variety)	82.7	3.9	1.5	2.9	6.8	56	227	82	10	10278	0	0.22	0.26	1.1	—	12
106.	Coriander leaves	86.3	3.3	0.6	1.2	6.3	44	184	71	1.4	6918	0	0.05	0.06	0.8	—	135
107.	Curry Leaves	63.8	6.1	1.0	6.4	18.7	108	830	57	0.9	7560	0	0.08	0.21	2.3	93.9	4
108.	Drumstick leaves	75.9	6.7	1.7	0.9	12.5	92	440	70	0.9	6780	0	0.06	0.05	0.8	—	220
109.	Fenugreek leaves	86.1	4.4	—	1.1	6	49	395	51	1.9	2340	0	0.04	0.31	0.8	—	52
110.	Knol Khol greens	86.7	3.5	0.4	1.8	6.4	43	740	50	13.3	4146	0	0.25	—	3.0	—	157
111.	Lettuce	93.4	2.1	0.3	0.5	2.5	21	50	28	2.4	990	0	0.09	0.13	0.5	—	10
112.	Mint	84.9	4.8	0.6	2.0	5.8	48	200	62	15.6	1620	0	0.05	0.26	1.0	114	27
113.	Mustard leaves	89.8	4.0	0.6	0.8	3.2	34	155	26	16.3	2622	0	0.03	—	—	—	33
114.	Parsley	74.6	5.9	1.0	1.8	13.5	87	390	175	17.9	1920	0	0.04	0.18	0.5	—	281
115.	Radish leaves	90.8	3.8	0.4	1.0	2.4	28	265	59	0.1	5295	0	0.18	0.47	0.8	—	81
116.	Spinach	92.1	2.0	0.7	0.6	2.9	26	73	21	1.1	5580	0	0.03	0.26	0.5	123	28

Other vegetables

117.	Ash gourd	96.5	0.4	0.1	0.8	1.9	10	30	20	0.8	0	0	0.06	0.01	0.4	—	1
118.	Bitter gourd	92.4	1.6	0.2	0.8	4.2	25	20	70	0.6	126	0	0.07	0.09	0.5	—	88
119.	Bottle gourd	96.1	0.2	0.1	0.6	2.5	12	20	10	0.5	0	0	0.03	0.01	0.2	—	0
120.	Brinjal	92.7	1.4	0.3	1.3	4	24	18	47	0.4	74	0	0.04	0.11	0.9	34	12

S. No.	Name of the foodstuff	Mois- ture	Pro- tein	Fat	Fibre	Carbo- hyd- rate	Ener- gy	Cal- cium	Phos- phorus	Iron	Vita- min A	Thia- mine	Ribo- flavin	Nia- cin	Folic Acid	Vita- min C	
		g	g	g	g	g	Kcal	mg	mg	mg	µg	µg	mg	mg	mg	µg	mg
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
121.	Broad beans	85.4	4.5	0.1	2.0	7.2	48	50	64	1.4	9	0	0.08	—	0.8	—	12
122.	Cauliflower	90.8	2.6	0.4	1.2	4.0	30	33	57	1.2	30	0	0.04	0.10	1.0	—	56
123.	Cluster beans	81.0	3.2	0.4	3.2	10.8	16	130	57	1.1	198	0	0.09	0.03	0.6	144	49
124.	Cowpea pods	85.3	3.5	0.2	2.0	8.1	48	72	59	2.5	564	0	0.07	0.09	0.9	—	14
125.	Cucumber	96.3	0.4	0.1	0.4	2.5	13	10	25	0.6	0	0	0.03	0	0.2	14.7	7
126.	Double beans	73.8	8.3	0.3	4.3	12.3	85	40	140	2.3	—	—	—	—	—	—	22
127.	Drumstick	86.9	2.5	0.1	4.8	3.7	26	30	110	0.2	110	0	0.05	0.7	0.2	—	120
128.	Drumstick flowers	85.9	3.6	0.8	1.3	7.1	50	51	90	—	—	—	—	—	—	—	—
129.	Field beans, tender	86.1	3.8	0.7	1.8	6.7	48	210	68	0.8	187	0	0.10	0.06	0.7	—	9
130.	French beans	91.4	1.7	0.1	1.8	4.5	26	50	28	0.6	132	0	0.08	0.06	0.3	45.5	24
131.	Capsicum	92.4	1.3	0.3	1.0	4.3	24	10	30	0.6	427	0	0.55	0.05	0.1	—	137
132.	Jack tender	84.0	2.6	0.3	2.8	9.4	51	30	40	1.7	0	0	0.05	0.04	0.2	—	14
133.	Knol khol	92.7	1.1	0.2	1.5	3.8	21	20	35	1.5	21	0	0.05	0.09	0.5	—	85
134.	Ladies finger	89.6	1.9	0.2	1.2	6.4	35	66	56	0.4	52	0	0.07	0.1	0.6	105.1	13
135.	Lotus stem, dry	9.5	4.1	1.3	25.0	51.4	234	405	128	60.6	0	0	0.82	1.21	1.9	—	3
136.	Mango, green	87.5	0.7	0.1	1.2	10.1	44	10	19	0.3	90	0	0.04	0.01	0.2	—	3
137.	Onion stalk	87.6	0.9	0.2	1.6	8.9	41	50	50	7.4	595	0	0	0.03	0.3	—	17
138.	Parwar	92.0	2.0	0.3	3.0	2.2	20	30	40	1.7	153	0	0.05	0.06	0.5	—	29
139.	Plantain (green)	83.2	1.4	0.2	0.7	14.0	64	10	29	6.3	30	0	0.05	0.02	0.3	16.4	24
140.	Plantain (flower)	89.9	1.7	0.7	1.3	5.1	34	32	42	1.6	27	0	0.05	0.02	0.4	—	16
141.	Pumpkin	92.6	1.4	0.1	0.7	4.6	25	10	30	0.4	50	0	0.06	0.04	0.5	13.0	2
142.	Ridge gourd	95.2	0.5	0.1	0.5	3.4	17	18	26	0.4	33	0	—	0.1	0.2	—	5
143.	Snake gourd	94.6	0.5	0.3	0.8	3.3	18	26	20	1.5	96	0	0.04	0.06	6.3	15.5	0
144.	Tinda, tender	93.5	1.4	0.2	1.0	3.4	21	25	24	0.9	13	0	0.04	0.08	0.3	—	18
145.	Vegetable marrow	94.8	0.5	0.1	0.8	3.5	17	10	30	0.6	—	—	0.02	0	0.4	—	18
146.	Tomato	94.0	0.9	0.2	0.8	3.6	20	48	20	0.6	351	0	0.12	0.06	0.4	30	27
Fruits																	
147.	Amla	81.8	0.5	0.1	3.4	13.7	58	50	20	1.2	9	0	0.03	0.01	0.2	—	600
148.	Apple	84.6	0.2	0.5	1.0	13.4	59	10	14	0.7	0.9	0	—	—	0	—	1
149.	Apricot, fresh	85.3	1	0.3	1.1	11.6	53	20	25	2.2	2160	0	0.04	0.13	0.6	—	6
150.	Apricot, dry	19.4	1.6	0.7	2.1	73.4	306	110	70	4.6	58	0	0.22	—	2.3	—	2
151.	Bael fruit	61.5	1.8	0.3	2.9	31.8	137	85	50	0.6	55	0	0.13	0.03	1.1	—	8
152.	Banana, ripe	70.1	1.2	0.3	0.4	27.2	116	17	36	0.4	78	0	0.05	0.08	0.5	—	7
153.	Cape gooseberry	82.9	1.8	0.2	3.2	11.1	53	10	67	2	1428	0	0.05	0.02	0.3	—	49
154.	Cherries (red)	83.4	1.1	0.5	0.4	13.8	64	24	25	0.6	0	0	0.08	0.08	0.3	—	7
155.	Currants (black)	18.4	2.7	0.5	1.0	75.2	316	130	110	8.5	21	0	0.03	0.14	0.4	—	1
156.	Dates (dried)	15.3	2.5	0.4	3.9	75.8	317	120	50	7.3	26	0	0.01	0.02	0.9	—	3
157.	Dates (fresh)	59.2	1.2	0.4	3.7	33.8	144	22	38	1.0	—	—	—	—	—	—	—
158.	Grapes (blue variety)	82.2	0.6	0.4	2.8	13.1	58	20	23	0.5	3	0	0.04	0.03	0.2	—	1
159.	Grapes (pale variety)	79.2	0.5	0.3	2.9	16.5	71	20	30	0.5	0	0	—	—	0	—	1
160.	Grape fruit (triumph)	92	0.7	0.1	—	7	32	20	20	0.2	—	0	0.12	0.02	0.3	—	31
161.	Guava (country)	81.7	0.9	0.3	5.2	11.2	51	10	28	0.3	0	0	0.03	0.03	0.4	—	212
162.	Guava (hill)	85.3	0.1	0.2	4.8	9	38	50	20	1.2	0	0	0.02	0.02	0.3	—	15
163.	Jackfruit:	76.2	1.9	0.1	1.1	19.8	88	20	41	0.6	175	0	0.03	0.13	0.4	—	7
164.	Lemon	85.0	1.0	0.9	1.7	11.1	57	70	10	0.3	0	0	0.02	0.01	0.1	—	39
165.	Lemon (sweet)	90.5	0.7	0.3	0.7	3	35	30	20	0.7	—	—	—	0.04	0	—	45

S. No.	Name of the foodstuff	Mois- ture	Pro- tein	Fat	Fibre	Carbo- hy- drate	Ener- gy	Cal- cium	Phos- phorus	Iron	Vita- min A	Thia- mine	Ribo- flavin	Nia- cin	Folic Acid	Vita- min C	
		g	g	g	g	g	Kcal	mg	mg	mg	µg	µg	mg	mg	mg	µg	mg
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
166.	Lichi	84.1	1.1	0.2	0.5	13.6	61	10	35	0.7	0	0	0.02	0.06	0.4	—	31
167.	Lime	84.6	1.5	1.0	1.3	10.9	59	90	20	0.3	15	0	0.02	0.03	0.1	—	63
168.	Lime (sweet, malta)	90.3	8.7	0.2	0.6	7.8	36	30	20	1.0	0	0	—	—	0	—	54
169.	Lime (sweet, Musambi)	88.4	0.8	0.3	0.5	9.3	43	40	30	0.7	0	0	—	—	0	—	50
170.	Loquat	88.2	0.60	0.3	0.8	9.6	43	30	20	1.3	559	0	—	—	0	—	0
171.	Mango (ripe)	81.0	0.6	0.4	0.7	16.9	74	14	16	1.3	2743	0	0.08	0.09	0.9	—	16
172.	Melon musk	95.2	0.3	0.2	0.4	3.5	17	32	14	1.4	169	0	0.11	0.08	0.3	—	26
173.	Melon water	95.8	0.2	0.2	0.22	3.3	16	11	12	7.9	0	0	0.02	0.04	0.1	—	1
174.	Mulberry	86.5	1.1	0.4	1.1	10.3	49	70	30	2.3	57	0	0.04	0.13	0.5	—	12
175.	Orange	87.6	0.7	0.2	0.3	10.9	48	26	20	0.3	1104	0	—	—	—	—	30
176.	Orange Juice	97.7	0.2	0.1	—	1.9	9	5	9	0.7	15	0	0.06	0.02	0.4	—	64
177.	Papaya	90.8	0.6	0.1	0.8	7.2	32	17	13	0.5	666	0	0.04	0.25	0.2	—	57
178.	Peaches	86.0	1.2	0.3	1.2	10.5	50	15	41	2.4	0	0	0.02	0.03	0.5	—	6
179.	Pears	86.0	0.6	0.2	1.0	11.9	52	8	15	0.5	28	0	0.06	0.03	0.2	—	0
180.	Phalsa	80.8	1.3	0.9	1.2	14.7	72	129	39	3.1	419	0	—	—	0.3	—	22
181.	Pineapple	87.8	0.4	0.1	0.5	10.8	46	20	9	2.4	18	0	0.2	0.12	0.1	—	39
182.	Plum	86.9	0.7	0.5	0.4	11.1	52	10	12	0.6	166	—	0.04	0.1	0.3	—	5
183.	Pomegranate	78.0	1.6	0.1	5.1	14.5	65	10	70	1.8	0	0	0.06	0.1	0.3	—	16
184.	Raisins	20.2	1.8	0.3	1.1	74.6	308	87	80	7.7	2.4	0	0.07	0.19	0.7	—	1
185.	Raspberry	84.8	1.0	0.6	1.0	11.7	56	40	110	2.3	1248	0	—	—	0.8	—	30
186.	Sapota	73.7	0.7	1.1	2.6	21.4	98	28	27	1.3	97	0	0.02	0.03	0.2	—	6
187.	Strawberry	87.8	0.7	0.2	1.1	9.8	44	30	30	1.8	18	0	0.03	0.02	0.2	—	52
MISCELLANEOUS																	
Nuts and Oilseeds																	
188.	Almond	5.2	20.8	58.9	1.7	10.5	655	230	490	5.1	0	0	0.24	0.57	4.4	—	0
189.	Cashewnut	5.9	21.2	46.9	1.3	22.3	596	50	450	5.8	60	0	0.63	0.19	1.2	—	0
190.	Chilgoza	4.0	13.9	49.3	1.0	29.0	615	91	494	3.6	—	—	0.32	0.3	3.6	—	0
191.	Coconut dry	4.3	6.8	62.3	6.6	18.4	662	400	210	7.8	0	0	0.08	0.01	3.0	16.5	7
192.	Coconut fresh	36.3	4.5	41.6	3.6	13.0	444	10	240	1.7	0	0	0.05	0.10	0.8	12.5	1
193.	Coconut tender	90.8	0.9	1.4	—	6.3	41	10	30	0.9	—	—	—	—	—	—	—
194.	Coconut milk	42.8	3.4	41.0	0	11.9	430	15	140	1.6	0	0	0.08	0.04	0.6	—	3
195.	Coconut water	93.8	1.4	0.1	0	4.4	24	24	10	0.1	0	0	0.01	0	0.1	—	2
196.	Gingelly seeds	5.3	18.3	43.3	2.9	25.0	563	1450	570	9.3	60	0	1.01	0.34	4.4	134	0
197.	Groundnut	3.0	25.3	40.1	3.1	26.1	567	90	350	2.5	37	0	0.90	0.13	19.9	20	0
198.	Groundnut roasted	1.7	26.2	39.8	3.1	26.7	570	77	370	3.1	0	0	0.39	0.13	22.1	—	0
199.	Mustard seeds	8.5	20.0	39.7	1.8	23.8	541	490	700	7.9	162	0	0.65	0.26	4.0	—	0
200.	Pistachio nut	5.6	19.8	53.5	2.1	16.2	626	140	430	7.7	144	0	0.67	0.28	2.3	—	—
201.	Walnut	4.5	15.6	64.5	2.6	11.0	687	100	380	2.6	6	0	0.45	0.40	1.0	—	0
202.	Watermelon seeds	4.3	34.1	52.6	0.8	4.5	628	100	937	7.4	—	—	—	—	—	—	—
Condiments and spices																	
203.	Asafoetida	16.0	4.10	1.1	4.1	67.8	297	690	50	39.4	4	0	0	0.04	0.3	—	0
204.	Cardamom	20.0	10.2	2.2	20.1	42.1	229	130	160	4.6	0	0	0.22	0.17	0.8	—	0
205.	Chillies, dry	10.0	15.9	6.2	30.2	31.6	246	160	370	2.3	345	0	0.93	0.43	9.5	—	50
206.	Chillies, green	85.7	2.9	0.6	6.8	3.0	29	30	80	4.4	175	0	0.19	0.39	0.9	29	111
207.	Cloves, dry	25.2	5.2	8.9	9.5	46.0	286	740	100	11.7	253	0	0.08	0.13	0	—	0
208.	Coriander	11.2	14.1	16.1	32.6	21.6	288	630	393	7.1	942	0	0.22	0.35	1.1	32	0
50	209. Cumin seeds	11.9	18.7	15.0	12.0	36.6	356	1080	511	11.7	522	0	0.55	0.36	2.6	—	3

**Finding Nutritive Value
of Foodstuffs**

210. Fenugreek	13.7	26.2	5.8	7.2	44.1	333	160	370	6.5	96	0	0.34	0.29	1.1	84	0
211. Garlic, dry	62.0	6.3	0.1	0.8	29.8	145	30	310	1.2	0	0	0.06	0.23	0.4	—	13
212. Ginger, fresh	80.9	2.3	0.9	2.4	12.3	67	20	60	3.5	40	0	0.06	0.03	0.6	—	6
213. Mango powder	6.8	2.8	7.8	13.7	64.0	337	180	16	45.2	—	—	—	—	—	—	—
214. Nutmeg fruit	14.3	7.5	36.4	11.6	28.5	472	120	240	2.0	0	0	0.33	0.01	1.4	—	0
215. Omum	7.4	17.1	21.8	21.2	24.6	363	1525	443	12.5	71	0	0.21	0.28	2.1	—	—
216. Pepper, dry (black)	18.2	11.5	6.8	14.9	49.2	304	460	198	12.4	1080	0	0.09	0.14	1.4	—	—
217. Tamarind pulp	20.9	3.1	0.1	5.6	67.4	283	170	110	17	60	0	—	0.07	0.7	—	3
218. Turmeric	13.1	6.3	5.1	2.6	69.4	349	150	282	67.8	30	0	0.03	0	2.3	18.0	0

Source : Nutritive value of Indian Foods by C. Gopalan, B. V. Rama Sastri, S. C. Balasubramanian, revised and updated by B.S. Narasinga Rao, Y.G. Deosthale and K.C. Pant, NIN, 1989.

Note : Indication (-) here means - Values not found
Indication (0) here means - does not contain any.



ignou
THE PEOPLE'S
UNIVERSITY