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RESEARCH REPORT

NUTRITIVE VALUE OF FOODS OF ZIMBABWE*

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MANY COUNTRIES, BOTH developed and developing, have tables of the nutrient composition of their food. The data are used by research nutritionists to assess the nutritional value of a nation's food supply. Home economics teachers and community nutritionists use the food values to develop educational guidance materials for food selection and improvement of diets. Dietitians and physicians use the tables to estimate the nutrient content of therapeutic diets. Government agencies utilize the information to develop regulatory measures such as fortification of processed foods. Food composition tables are an important tool for the interpretation of diets.

Every nation has its own food consumption patterns that are peculiar to its culture. Some of these patterns change with time. As countries develop and cultures intermix, new foods and eating habits are adopted. Methods of food production, distribution, storage, preparation, housewifery, and social values change with a change in food habits, but certain food consumption patterns will long be retained. It is these that distinguish one nation's eating habits from another's.

The table of nutrient composition of foods commonly used in Zimbabwe which is presented here was developed from data reported in various technical and scientific reports and journals.

SELECTION OF FOOD ITEMS

A list of foods characteristic of the diets of Zimbabwean families was drawn from various sources. These included the author's personal experience as a Zimbabwean. Sources in the literature, including Gelfand (1971) and Colborne (1975), provided a countrywide evaluation of foods important to people in the different regions of Zimbabwe. Information was obtained about the diets of patients in urban and rural government hospitals and in mission hospitals. Lists of foods used in boarding high schools and of foods commonly used in high-school cookery classes were provided. Five Zimbabwean families supplied a list of food items characteristic of the eating patterns of their native provinces.

Two hundred food items were selected from the list of foods compiled from the various sources. These foods were considered to be the important foods of the country because the foods were staple items of the diet and/or were important sources of one or more nutrients in the diet. An effort was made to include in the

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table foods characteristic of the diets of both rural and urban families. Food values for sadza made from different cereal meals have been included; the values are based on an unpublished and undated table compiled by the Ministry of Health of the Federation of Rhodesia and Nyasaland.

As data were collected from the literature a number of details were considered. A food was identified by its scientific name and its source and variety identified. The method of cooking, temperature used, and length of cooking time (where given) were noted for cooked foods. The type and degree of processing for the few processed foods that were included in the table were recorded. Methods of analyses that were used were recorded; however, most authors from whom values were obtained used the methods of the Association of Official Analytical Chemists for their analyses. The method used to express the values was also recorded. For instance, it was noted whether the carbohydrate values reported were for total carbohydrate or available carbohydrate. Values that were reported in a different form from that used in Table I were converted to the appropriate form, when possible; otherwise, those values were not utilized.

SELECTION OF REPRESENTATIVE VALUES FOR THE NUTRIENT CONTENT OF ZIMBABWEAN FOODS

In order to evaluate the reported values for each nutrient in a food, a reference value was selected for the nutrient. Preference was given to analytical values reported on Zimbabwean foods or on foods from countries neighbouring Zimbabwe. If there were no values reported for a food from any of these countries, a reference value was chosen from a country with climatic conditions similar to those of Zimbabwe. A value that was far beyond the range of values from other reports was omitted. The arithmetical mean of the accepted values was reported as the representative value for a nutrient.

SELECTION OF NUTRIENTS AND MODE OF EXPRESSION

The following food groups were selected and arranged in the following sequence:

Grains and grain products
Milk and milk products
Eggs
Fats and oils
Meat, poultry, and edible insects
Fish
Vegetables and vegetable products
Fruit
Nuts and seeds
Sugars and syrups
Beverages

The inclusion of pulses, roots and tubers in the vegetable group eliminated the necessity for cross-referencing many food items, such as peanuts, which would fall into several groups. The only food that required cross-reference in this grouping was coconut. Values for coconut were reported under the section Nuts

and seeds; but the name coconut also appears, without an item number, in the Fruit group and the reader is advised to see items 88 and 89.

Foods within a group were listed in alphabetical order by the common names used in Zimbabwe. Scientific names of the food items are given in Table II. Some foods, such as maize, are consumed in different forms. Values for the different forms were reported under the main heading for that food.

Foods which some people eat with the skin and others peel first, such as guavas, mangoes, apples and others, were considered to be eaten with the skin, unless otherwise stated in the Table.

The nutrients selected for the Food Composition Table included those recommended by Southgate (1974) for national food composition tables. These were: energy, total carbohydrate, total fat, protein, water, calcium, iron, thiamin, riboflavin, niacin, folic acid, vitamin B_{12}, and ascorbic acid. Other nutrients that were considered important to include were sodium, potassium, phosphorous, and vitamin B_6.

All values were expressed on the basis of 100 g of the edible portion of food. Energy is given in kilocalories.

Proximate constituents

The proximate constituents of food included water, protein, carbohydrate, and fat.

Water. The inclusion of the amount of water in each food item allows comparison of values of other nutrients in the same or similar food with those given in other food composition tables.

Protein. Protein values are reported in grams per 100 g.

Carbohydrate. Carbohydrate values are for total carbohydrate obtained by difference. The value given includes both available carbohydrate and dietary fibre. Values for dietary fibre are not given separately because of the paucity of data on dietary fibre. Values are given in grams per 100 g.

Fat. Fat refers to that component of food which is insoluble in water but soluble in organic solvents. It can also be referred to as oil or ether extract. Fat values are expressed in grams per 100 g.

Inorganic constituents

Values were reported for the five selected minerals in the food. No adjustments were made for unavailable portions. The values are expressed in milligrams per 100 g.

Vitamins

Thiamin and riboflavin. Values are reported in milligrams per 100 g.

Niacin. The amino acid tryptophan can be converted in the body to niacin. Therefore, the requirement for niacin in the body is met from both the preformed vitamin and the potential contributions from its precursor. However, in compiling this table it was decided not to convert the niacin values to niacin equivalent because of the paucity of data for tryptophan and niacin determined simultaneously. The preformed niacin values are expressed in milligrams per 100 g.

Vitamin B_6. Vitamin B_6 values represent total vitamin B_6 activity including that derived from pyridoxine, pyridoxal, pyridoxamine, and other conjugate forms and their phosphates. The values are reported in milligrams per 100 g.

Folic acid. Values for folic acid represent the total folic acid present in the food and are expressed in micrograms per 100 g.
Vitamin B_{12}. Information on the vitamin B_{12} content of food was limited but available data were included. Values are expressed in micrograms per 100 g.
Ascorbic acid. Values for ascorbic acid refer to total ascorbic acid which includes both dehydroascorbic acid and reduced ascorbic acid. The values are expressed in milligrams per 100 g.
Vitamin A. Vitamin A activity is expressed in micrograms retinol equivalent per 100 g. The retinol equivalent values included values from carotenoids present in the food. In some sources, the values for carotenoids were for beta carotene only. Other sources gave values for total carotenoids without indicating how much was beta carotene and how much was not. The divisor used to convert carotenoids to micrograms retinol equivalent represents the efficiency with which the particular carotenoids are converted at different rates in the body. Some are not converted at all. The divisor for beta carotene is six and that for all other provitamin A carotenoids is twelve. But, because of lack of information on the proportion of the different carotenoids in the food, six was used as the divisor for all carotenoids. Hence, the value calculated in this Food Table may slightly overestimate the vitamin A potency of foods. Paul and Southgate (1978) stated that the error introduced in this way is small.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used:

— No information was available for the nutrient.
( ) Values are reported without confidence because they are based on a limited number of sources.
Tr Only a trace of the nutrient was known to be present.
0 No detectable amount of the nutrient was known to be present.

CONCLUSION

Appropriate data were not always available for one or more nutrients in an important food. This report, therefore, contains a number of gaps. Information is needed on the nutritional value of processed, cooked, and home-prepared foods of Zimbabwe and on the drought-resistant varieties of maize that are widely used in the low rainfall areas of the country.

Present knowledge of the role of specific amino acids in certain metabolic disorders indicates a need for data on the amino acid composition of foods, especially of low-protein foods like maize.

Finally, there is an urgent need for an estimation of the recommended daily allowances of nutrients for the people of Zimbabwe.

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Table I

NUTRIENT COMPOSITION OF FOODS OF ZIMBABWE (NUTRIENTS PER 100g EDIBLE PORTION)

No.	Foods	Proximate and inorganic						
		Water	*Energy*	*Protein*	*Fat*	*Carbohydrate*	*Calcium*	*Phosphorous*
		g	*kcal*	*g*	*g*	*g*	*mg*	*mg*
GRAINS AND GRAIN PRODUCTS								
	MAIZE, white							
	Fresh, on cob							
1	Raw	69,0	102,3	3,5	1,3	22,2	5,8	62,4
2	Boiled	70,7	89,0	3,0	1,6	18,4	2,5	89,1
3	Dried, uncooked	11,6	355,8	9,6	4,2	72,3	13,0	246,8
	Samp or Mealie-rice							
4	Uncooked	11,6	363,1	8,7	0,7	78,6	8,3	48,7
5	Sadza	70,0	115,0	3,0	1,0	24,0	3,0	—
	Mealie-meal, uncooked							
6	Straight run	12,0	356,3	9,5	3,7	72,8	16,3	241,0
7	Refined 60% (extraction)	12,7	363,2	8,3	1,8	78,6	8,5	49,0
8	Cornflour	12,1	356,2	4,5	2,1	84,0	7,0	45,7
9	Stem	75,0	59,0	0,5	(0)	(14,0)	25,0	—
	MILLET							
	Bulrush (mhunga)							
10	Whole grain, raw	11,6	354,6	12,4	4,9	71,4	31,3	289,7
11	Meal	16,0	349,0	7,5	3,6	77,1	17,3	186,0
12	Sadza	70,0	130,0	4,0	2,0	23,0	8,0	—
	Finger (rapoko)							
13	Whole grain, raw	12,2	333,6	7,2	1,6	75,7	350,6	307,0
14	Meal	12,6	332,0	6,2	1,5	78,8	328,7	213,5
15	Sadza	70,0	120,0	2,0	0,7	26,0	120,0	—
	OATMEAL							
16	Raw	9,2	389,0	13,1	7,2	68,6	48,8	378,3
17	Boiled	86,8	54,3	1,9	1,0	9,6	7,5	50,0
	RICE, white							
18	Raw	12,2	357,4	6,8	0,6	80,6	8,6	109,5
19	Boiled	72,3	111,3	2,1	0,2	25,7	5,5	31,0
20	Brown, raw	12,5	357,0	7,6	1,6	77,5	15,9	161,0
	SORGHUM							
21	Whole grain, raw	11,3	356,4	10,7	3,2	73,4	27,4	293,3

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
0,7	279,7	2,0	80,00	11,33	0,15	0,08	1,70	(0,19)	(0)	37,70
0.7	118,0	13.5	80,00	7.00	0.11	0,08	0,17	(0,16)	(0)	33,00
2,7	299,0	20.0	25,67	0	0.36	0,11	1,98	—	—	(0.90)
2,7	(80,0)	(1,0)	22,50	0	0,08	0,04	0,30	—	—	(3,80)
1,5	—	—	—	—	0,05	0,5	0	—	—	—
3,0	288.0	11,3	24,00	0	0,35	0,10	1,60		—	(6,70)
3,1	—		22,50	0,75	0,17	0,05	0,90		—	(9,00)
1,6	30,5	26,0	0	0	0,01	0	0,10	(Tr)	(0)	(Tr)
2.0	—	—	0	(0)	—	—	—	—	—	—
9.6	(30.0)	(11.0)	30,00	0,75	0.35	0,16	2,03	—	—	
29,0	—	—	—	—	0,20	0,18	1,00	—	—	—
2,0	—	—	—	0	0.50	0,03	1,00		—	—
9,6	(408,0)	(11,0)	15,00	0	0,33	0,10	1,50		—	—
31,2	—	—	—	—	0,24	0,11	0,80		—	—
2,0	—		0	0	0.10	0,02	0.50		—	
4,2	370,7	11,2	0	0	0.50	0.12	1,00	0,16	0	43,70
0,6	51,5	399,0	0	0	0,07	0,02	0,10	(0,01)	(0)	(6,00)
1,2	95,3	14,3	0	0	0,09	0,03	1,58	0,17	0	17,28
0,6	33,0	188,0	0	0	0,03	0,02	0,43	(0,05)	(0)	(6,00)
1,9	117,0	9,0	0	0	0,27	0,06	2,88	0,59	(0)	18,57
5,8	240,5	(7,0)	12,50	0	0,38	0,13	3,47		—	48,95

Table I (cont.)

No.	Foods	Proximate and inorganic						
		Water	*Energy*	*Protein*	*Fat*	*Carbohydrate*	*Calcium*	*Phosphorous*
		g	*kcal*	*g*	*g*	*g*	*mg*	*mg*
22	Meal	12,3	348,0	10,3	2,9	76,3	21,3	207,0
23	Sadza	70,0	120,0	3,0	1,5	23,0	10,0	-
	SWEET SORGHUM							
24	Stem, fresh	75,0	59,0	0,5	(1,7)	(14,0)	25,0	—
	WHEAT							
25	Whole grain, raw							
	Flour	12,5	332,8	13,1	2,0	70,3	40,9	341,8
26	Whole meal	12,3	334,6	12,5	1,8	71,3	41,5	330,0
27	Brown	12,4	348,2	11,7	1,6	72,9	23,6	233,0
28	White, household	12,7	355,7	10,6	1,0	75,4	17,6	97,7
	Macaroni							
29	Raw	10,6	367,8	12,4	1,5	76,3	22,0	161,3
30	Boiled	72,8	108,0	3,8	0,5	22,5	8,0	48,5
	SUGAR CANE							
31	Stem, fresh	84,4	51,3	1,7	0,2	11,2	17,0	43,0
VEGETABLES								
	BEANS							
	Green							
32	Raw	90,0	32,4	2,1	0,2	6,1	45,9	43,2
33	Boiled	92,0	23,2	1,7	0,2	4,8	43,2	37,9
	Dried, raw							
34	Butter	11,3	330,0	21,1	1,4	59,6	78,6	310,0
35	Haricot	10,8	319,4	21,8	1,6	56,4	129,4	332,5
	BEETROOT							
36	Raw	87,9	39,1	1,6	0,1	8,7	20,2	40,2
37	Boiled	88,9	34,5	1,3	0,1	7,8	18,0	26,3
	BLACKJACK							
38	Fresh, raw	85,9	36,8	3,4	0,7	5,4	154,8	49,7
	CABBAGE							
	Common							
39	Raw	92,2	25,0	1,6	0,2	5,2	47,7	33,9
40	Boiled	93,5	19,7	1,4	0,2	3,9	45,1	25,0
	CARROT							
	Peeled							
41	Raw	89,2	35,5	1,0	0,2	8,0	35,7	34,3
42	Boiled	91,2	28,3	0,8	0,2	6,4	34,0	27,5

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
13,5	-	--	0,30	0,40	0,30	0,10	3,20	-		
2,0	-	-	0	0	0,1	0,05	1,20	-		
1,0			0	(0)	--	—			--	
4,7	392,7	3,5	0	0	0,43	0,13	4,76		-	42,95
4,4	365,0	3,0	0	0	0,46	0,10	4,57	0,42	0	49,00
2,6	187,5	3,0	0	0	0,27	0,07	2,16	(0,30)	(0)	51,00
1,5	112,5	2,5	0	0	0,19	0,04	1,26	0,11	0	26,00
1,3	216,7	3,9	0	0	0,12	0,05	1,60	0,06	0	11,00
0,5	64,0	4,5	0	0	0,02	0,02	0,35	(0,01)	(0)	2,00
1,4	—	—	0	17,70	0,05	0,01	0,10	—	—	—
1,0	232,6	5,3	146,90	19,30	0,07	0,11	0,70	0,07	0	40,70
0,7	150,9	3,0	127,30	11,80	0,07	0,09	0,55	(0,04)	(0)	34,00
6,1	1320,7	59,0	3,00	0,40	0,45	0,16	1,96	0,54	0	116,90
8,2	1357,0	22,3	2,13	1,00	0,46	0,17	2,27	0,60	0	161,90
0,8	313,8	91,3	6,00	7,80	0,03	0,04	0,30	0,05	0	52,90
0,5	243,5	50,0	6,00	5,75	0,03	0,04	0,25	(0,03)	(0)	44,00
6,1	—	—	69,00	61,00	0,18	0,35	0,89	—	—	—
0,7	234,0	12,8	44,92	44,90	0,05	0,04	0,30	0,15	0	48,20
0,4	162,1	10,5	34,20	32,04	0,04	0,04	0,27	(0,10)	(0)	26,50
0,8	281,5	91,3	1684,16	5,40	0,05	0,04	0,50	0,15	0	17,65
0,5	188,2	38,6	2825,49	5,40	0,05	0,04	0,50	(0,09)	(0)	16,00

Table 1 (cont.)

No.	Foods	Proximate and inorganic						
		Water	*Energy*	*Protein*	*Fat*	*Carbohydrate*	*Calcium*	*Phosphorous*
		g	*kcal*	*g*	*g*	*g*	*mg*	*mg*
	CAULIFLOWER							
43	Flowers, raw	91,3	27,1	2,4	0,2	4,8	28,3	54,0
	COW PEAS							
	Common							
44	Dried, raw	11,3	340,6	23,0	1,4	59,6	87,6	394,0
45	Leaves, fresh, raw	85,2	50,5	3,8	0,4	7,1	127,5	27,5
	CUCUMBER							
46	Unpared, raw	95,6	13,2	0,7	0,1	2,7	16,6	25,8
	EGG PLANT							
47	Raw	92,1	26,7	1,1	0,2	5,1	12,1	25,3
	GOURD							
48	Immature, raw	94,1	19,7	0,7	0,2	4,3	17,3	(16,0)
	GROUND PEA							
49	Dried, raw	10,5	366,0	17,9	6,2	60,9	69,0	—
	LENTILS							
50	Dried, raw	11,0	340,0	24,2	1,1	58,9	61,3	303,6
	LETTUCE							
51	Raw	95,0	15,9	1,2	0,2	2,4	33,1	30,3
	MOWA							
52	Fresh, raw	86,4	41,4	3,6	0,8	5,9	393,9	78,6
	MUSHAMBA							
53	Fresh, raw	86,8	37,8	3,6	0,6	5,1	162,4	(29,5)
	MUSHROOM							
54	Wild, mixed							
	Fresh, raw	90,0	23,0	1,9	0,4	4,4	10,7	(97,0)
55	Cultivated							
	Fresh, raw	90,7	22,7	2,4	0,4	4,2	10,3	109,8
	OKRA							
	Fresh							
56	Raw	89,2	31,1	2,0	0,2	6,3	76,9	54,3
57	Boiled	90,0	30,9	1,9	0,2	6,2	85,7	41,2
58	Dried, raw	9,4	—	6,0	2,5	(61,7)	756,0	(404,0)
	ONION							
	Mature, dried							
59	Raw	89,6	40,6	1,3	0,2	8,8	29,3	38,8
	Immature leaves and bulb							
60	Fresh, raw	89,9	33,7	1,4	0,2	7,4	57,0	33,9

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
0,9	306.0	17,7	8,78	72,40	0,08	0,08	0,60	0,20	2,00	30,40
5,4	926,0	(127,0)	8,20	1,00	0,71	0,27	2,10	0,40	(0)	319,60
1,2	—	—	1969,00	61,00	0,14	0,18	0,93	—	—	—
0,5	149,5	9,5	11,20	29,10	0,03	0,03	0,25	0,04	0	12,97
0,8	230,1	2,8	5,30	5,80	0,05	0,05	0,65	0,09	(0)	19,50
0,5	(151,0)	(310,0)	2,95	11,50	0,04	0,03	0,45	—	—	—
6,8	—	—	9,00	0,67	0,29	0,11	2,03	—	—	—
6,8	717,3	33,8	17,07	1,20	0,44	0,27	1,07	0,57	0	69,30
0,9	228,3	8,9	419,40	11,10	0,07	0,08	0,35	0,06	0	32,80
3,2	—	—	617,50	76,50	0,06	0,24	1,25	—	—	—
3,2	—	—	(900,00)	(20,00)	(0,10)	(0,30)	(1,50)	—	—	—
1,9	(375,0)	(10,0)	(11,26)	14,43	0,07	0,46	4,60	—	—	—
1,1	381,5	11,3	0	3,90	0,10	0,40	4,70	0,09	0	24,40
1,0	221,4	6,0	115,74	25,70	0,10	0,09	0,90	(0,08)	(0)	26,50
0,7	155,5	3,6	114,10	23,90	0,13	0,17	0,97	(0,08)	(0)	(100,00)
9,0	—	—	—	—	—	—	—	—	—	—
1,4	156,8	9,3	4,42	9,20	0,04	0,04	0,20	0,10	0	16,30
0,9	193,0	4,5	792,40	21,60	0,06	0,09	0,43	—	(0)	12,60

Table I (cont.)

No.	Foods	Proximate and inorganic						
		Water	Energy	Protein	Fat	Carbohydrate	Calcium	Phosphorous
		g	kcal	g	g	g	mg	mg
	PEANUT (GROUNDNUT)							
	Dried, shelled							
61	Raw	5,9	591,0	27,0	47,8	19,7	58,1	404,7
62	Roasted, salted	2,5	580,9	25,4	47,8	21,6	70,9	394,7
63	Butter, smooth	2,5	591,5	25,1	49,1	18,4	53,4	400,0
	PEAS							
	Fresh							
64	Raw	75,7	85,0	6,4	0,4	15,5	28,7	105,8
65	Boiled	81,3	65,8	5,2	0,4	11,0	19,5	91,8
66	Dried, raw	11,8	330,8	22,8	1,4	58,5	70,3	332,8
	PEPPER							
	Sweet, green							
67	Raw	91,5	28,9	1,4	0,4	5,4	13,2	33,1
68	Boiled	94,5	17,7	1,1	0,3	3,4	9,2	17,6
	POTATOES, peeled							
69	Raw	78,3	80,8	2,1	0,1	18,3	8,7	50,8
70	Boiled	82,0	69,8	1,9	0,1	16,0	5,8	39,9
	PUMPKIN, raw							
	All varieties							
71	Mature fruit	91,0	28,8	1,0	0,1	6,1	25,0	32,2
72	Immature fruit	94,3	18,7	0,8	0,1	4,2	17,0	(32,0)
73	Leaves, fresh	86,5	41,0	4,6	0,5	6,0	259,5	(96,0)
74	RADISH, raw	93,7	17,0	0,9	0,1	3,5	32,8	27,0
75	RAPE, raw	86,6	48,0	4,1	0,4	6,2	(370,0)	(110,0)
76	RUNI, fresh, raw	82,2	68,0	5,9	1,0	8,9	410,0	70,0
	SOYABEAN							
77	Dried, raw	8,7	375,3	36,3	18,3	23,8	202,1	592,8
	SPINACH							
78	Raw	91,0	25,3	2,9	0,3	3,8	91,8	50,0
79	Boiled	92,0	22,7	2,9	0,3	3,5	92,9	37,9
	SQUASH, raw							
80	All varieties	92,5	24,1	1,1	0,2	5,1	21,4	30,8
	SWEET POTATOES							
	All varieties							
81	Raw	69,2	112,5	1,9	0,6	26,0	30,7	48,6
82	Boiled	71,1	104,0	1,3	0,4	24,6	29,7	45,5
83	TARO, raw	74,0	94,9	2,1	0,2	22,0	30,9	86,6

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
2,8	672,0	5,3	2,30	0,17	0,85	0,12	16,20	0,48	0	80,60
2,0	672,5	383,7	(0)	0	0,30	0,12	16,90	0,37	0	81,30
2,5	680,0	541,5	(0)	(0)	0,15	0,12	15,40	0,42	0	66,00
1,8	316,5	4,8	179,83	28,70	0,31	0,14	2,30	0,16	0	24,50
1,7	174,3	1,1	167,75	17,03	0,27	0,11	1,95	(0,10)	(0)	—
4,8	1081,3	60,0	29,90	1,30	0,74	0,22	2,83	0,13	0	(33,00)
1,0	211,8	5,5	138,70	124,40	0,06	0,06	0,70	0,22	0	13,30
0,5	154,3	6,7	103,28	86,93	0,05	0,06	0,54	(0,14)	(0)	(11,00)
0,7	408,6	4,9	5,33	19,40	0,09	0,04	1,20	0,24	0	11,50
0,5	292,8	2,3	(Tr)	16,70	0,09	0,04	1,10	(0,18)	(0)	(10,00)
0,9	380,0	4,0	497,31	10,10	0,06	0,05	0,50	(0,06)	(0)	19,80
0,8	—	—	278,63	14,00	0,06	0,04	0,50	—	—	—
4,3	—	—	343,33	99,20	(0,14)	0,14	(1,80)	—	—	—
1,0	215,0	44,5	0	23,60	0,03	0,02	0,23	0,09	0	19,40
6,7	—	—	481.67	107,50	(0.01)	0.22	(0,90)	—	—	—
20,5	—	—	—	(11,00)	—	—	—	—	—	—
8,9	1607,0	9,0	15,37	0	0,79	0,28	2,43	0,73	0	197,50
2,6	533,9	80,1	2558,40	53,30	0,09	0,21	0,66	0,28	(0)	124,40
2,2	323,9	50,0	2429,30	27,93	0,07	0,14	0,50	—	—	—
1,4	196,0	2,0	101,67	15,00	0,07	0,07	0,63	0,08	0,32	22,60
1,1	293,0	27,2	1221,40	26,60	0,10	0,05	0,66	0,24	0	33,30
0,7	282,0	21,0	1075,20	16,00	0,09	0,05	0,60	(0,13)	(0)	21,50
1,1	536,8	7,9	6,00	3,79	0,12	0,03	0,84	—	—	—

Table I (cont.)

No.	Foods	Proximate and inorganic: Water	Energy	Protein	Fat	Carbohydrate	Calcium	Phosphorous
		g	kcal	g	g	g	mg	mg
	TOMATO, ripe							
84	Raw, with skin	94,0	20,5	1,0	0,2	4,0	8,2	20,9
	TURNIP							
85	Raw	90,9	29,0	1,0	0,2	6,1	39,6	26,2
86	Boiled	94,0	20,7	0,7	0,2	4,3	34,9	22,7
NUTS AND SEEDS								
	BAOBAB, seeds							
87	Dried	7,8	452,0	32,6	29,4	(24,7)	265,0	1430,5
	COCONUT, meat							
88	Fresh	45,5	371,4	3,7	36,0	9,4	16,0	90,3
89	Desiccated	3,0	615,0	5,5	55,3	27,5	24,0	173,5
	MARULA, seeds							
90	Dried	(3,6)	(673,0)	25,5	60,4	(7,7)	123,0	763,0
	PUMPKIN, seeds							
91	Dried	5,2	552,9	27,4	44,0	18,3	48,1	846,5
	SESAME, seeds							
92	Dried	5,6	580,7	18,9	51,2	18,9	1118,0	612,5
	WATERMELON, seeds							
93	Dried	4,9	486,2	22,3	39,0	17,8	58,2	(483,0)
FRUITS								
94	APPLE, unpared, raw	84,6	56,2	0,4	0,6	13,1	6,5	10,8
95	AVOCADO PEAR, raw	75,0	180,7	2,5	17,7	8,3	11,5	31,8
96	BANANA, raw	73,9	94,7	1,3	0,3	24,3	7,0	21,7
97	BAOBAB pulp, raw	11,5	(290,0)	(2,2)	0,4	(76,7)	335,5	(118,0)
98	BLACKCURRANT, raw	82,5	50,3	1,4	0,3	11,6	60,0	41,5
	COCONUT, See items nos. 88 and 89							
99	GOOSEBERRY, raw	85,2	49,3	1,5	0,7	10,1	15,8	38,8
100	GRANADILLA, raw	78,8	84,4	1,6	1,0	15,4	13,8	42,0
101	GRAPE, raw	81,8	67,6	0,8	0,9	15,8	14,8	20,0
102	GRAPEFRUIT, raw	88,7	37,5	0,6	0,2	9,0	15,3	17,0
103	GUAVA, raw	81,1	66,0	1,0	0,5	14,6	16,6	26,0
104	LEMON, raw	89,2	34,6	0,8	0,5	7,8	29,7	18,0
105	MANGO, raw	82,8	62,4	0,6	0,3	14,9	10,8	9,8
106	MULBERRY, Black, raw	84,9	54,0	1,4	0,8	11,4	33,8	37,6
107	NAARTJIE, raw	86,5	44,8	0,8	0,2	10,5	30,1	18,5
108	PAWPAW, raw	89,6	37,0	0,6	0,1	8,9	20,5	16,4

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
0,5	233,4	3,3	213,08	22,60	0,06	0,04	0,60	0,10	0	22,60
0,4	226,0	49,0	1,00	30,00	0,04	0,06	0,67	0,09	0	15,90
0,4	180,9	38,3	0	20.70	0,04	0,05	0,33	(0,06)	(0)	(10,00)
13,9	—	—	—	—	1,80	—	—	—	—	—
2,1	348,0	20,0	0	2,00	0,06	0,02	0,40	0,04	0	25,00
3,5	669,0	(28,0)	0	0	0,06	0,04	0,60	(0)	—	—
(8,0)	—	—	—	64,50	—	—	—	—	—	—
9,6	(293,0)	(44,0)	23,32	0,60	0,25	0,18	2,50	—	—	—
9,9	616,5	54,5	4,50	0	0,85	0,22	4,70	—	—	(96,00)
7,3	(606,0)	(36,0)	7,56	0	0,17	0,15	2,20	(70,00)	—	—
0,6	106,2	1,5	13,39	5,40	0,03	0,03	0,15	0,03	0	3,90
0,9	501,2	5,6	62,29	12,10	0,08	0,15	1,30	0,42	0	47,90
0,5	332,0	2,7	54,38	10,90	0,04	0,05	0,70	0,47	0	19,90
(7,4)	—	—	(11,67)	292,50	0,47	(0,06)	(2,10)	—	—	—
1,2	371,0	3,0	51,15	200,00	0,04	0,06	0,30	0,07	0	11
1,1	136,7	1,3	663,85	32,40	0,05	0,03	1,50	0,02	0	—
1,2	(348,0)	(28,0)	83,25	21,50	(0)	0,11	1,40	—	—	—
0,6	192,8	3,6	18,05	3,20	0,05	0,03	0,30	0,09	0	5,70
0,7	(174,0)	1,6	8,36	41,00	0,05	0,02	0,25	0,03	0	7,20
0,9	290,0	4,0	50,00	221,40	0,05	0,04	1,10	—	(0)	—
0,6	135,8	3,6	2,13	45,00	0,04	0,02	0,14	0,09	0	6,50
0,4	189,3	4,8	559,79	37,13	0,05	0,05	0,60	0	0,16	—
2,0	191,5	16,0	21,65	11,00	0,04	0,07	0,50	(0,05)	(0)	—
0,4	181,3	1,7	37,33	48,00	0,08	0,03	0,25	0,05	0	23,20
0,4	214,5	3,8	348,08	57,20	0,03	0,06	0,30	—	(0)	—

Table I (cont.)

No.	Foods	Proximate and inorganic: Water	Energy	Protein	Fat	Carbohydrate	Calcium	Phosphorous
		g	kcal	g	g	g	mg	mg
109	PEACH, raw	86,8	47,0	0,7	0,2	11,2	7,8	17,8
110	PEAR, raw, with skin	83,5	57,3	0,4	0,4	13,6	7,8	10,2
111	PINEAPPLE, raw	86,1	53,5	0,5	0,3	13,1	18,5	11,0
112	PLUM, raw	85,0	50,7	0,6	0,2	12,3	12,4	14,4
113	PRICKLY PEAR, raw	83,9	61,4	1,1	0,8	10,6	41,5	25,0
	PRUNE							
114	Raw	23,9	221,5	2,3	0,6	49,3	42,3	81,7
115	Stewed, unsweetened	64,3	101,0	1,0	0,4	26,2	21,1	36,9
116	RAISINS	21,0	271,0	2,3	0,6	70,7	61,0	72,5
117	RHUBARB, raw	94,0	13,0	0,6	0,1	3,3	103,7	19,0
118	SHAKATA, raw	61,8	(167,5)	(1,2)	(0,5)	(41,9)	—	—
119	STRAWBERRY, raw	89,6	36,0	0,8	0,4	7,8	22,9	21,7
120	WATERMELON, raw	92,7	26,0	0,5	0,1	6,4	8,6	8,6
	SYRUPS AND SUGARS							
121	HONEY	20,0	303,0	0,4	0	77,2	7,2	15,5
122	JAM, fruit	29,3	253,3	0,2	0	66,0	14,7	(9,0)
123	MOLASSES	25,2	240,5	0,1	0	61,7	250,2	(45,0)
	SUGAR							
124	Brown	4,3	377,6	0,4	0,1	94,3	76,5	12,0
125	White, granulated	0,5	387,9	0	0	100,4	2,3	2,5
126	SYRUP	20,0	307,5	0,3	0	79,0	30,7	20,0
	MILK AND MILK PRODUCTS							
	MILK, cow's							
	Whole							
127	Fluid	87,3	66,3	3,5	3,6	4,9	118,5	95,3
128	Dried	3,5	498,0	26,0	27,4	38,1	920,2	751,0
129	Evaporated, unsweetened	72,4	142,8	7,2	8,1	10,0	259,2	209,7
130	Condensed, sweetened	27,4	321,6	7,8	8,5	54,5	278,5	239,2
131	Sterilized	87,6	(65,0)	3,3	3,7	4,7	120,0	(95,0)
	Skimmed							
132	Fluid	90,8	35,5	3,4	0,2	4,9	120,9	97,2
133	Dried	3,9	358,4	35,2	0,9	52,7	1254,9	976,0
134	Condensed, sweetened	28,3	273,8	9,5	0,4	59,4	352,8	(270,0)
135	MILK, goat's	86,7	71,1	3,3	4,3	4,8	136,0	112,0

Table I (cont.)

Constituents			*Vitamins*							
Iron	*Potassium*	*Sodium*	*Vitamin A*	*Ascorbic acid*	*Thiamin*	*Riboflavin*	*Niacin*	*Vitamin B_6*	*Vitamin B_{12}*	*Total folic acid*
mg	*mg*	*mg*	*R.E.*[a]	*mg*	*mg*	*mg*	*mg*	*mg*	*µg*	*µg*
0,6	220,0	3,2	196,45	9,80	0,02	0,05	0,70	0,02	0	4,30
0,4	117,7	1,1	4,91	3,90	0,02	0,03	0,14	0,02	0	9,00
0,4	179,3	1,0	20,53	31,90	0,07	0,03	0,20	0,09	0	7,90
0,5	194,8	2,5	62.52	4,70	0,06	0,03	0,40	0,05	0	4,20
0,7	—	—	6,50	19,80	0,02	0,03	0,40	—	—	—
3,2	777,0	10,0	365,56	1,00	0,12	0,16	1,28	0,24	0	4,30
1,6	348,3	5,5	166,93	0,90	0,03	0,07	0,70	(0,10)	(0)	(Tr)
2,6	747,0	33,7	10,25	0,20	0,09	0,07	0,70	0,29	0	7,20
0,6	350,3	5,3	23,30	9,50	0,02	0,04	0,20	0,03	0	5,80
(2,2)	—	—	(158,30)	(55,70)	—	(0,50)	—	—	—	—
0,8	170,0	1,9	11,19	54,60	0,03	0,06	0,60	0,06	0	13,80
0,2	106,8	3,9	62,89	6,33	0,04	0,04	0,16	0,06	(0)	0,70
0,4	65,5	9,1	0	1,75	0	0,05	0,20	0,02	0	(3,00)
0,5	(88,0)	(12,0)	1,70	4,30	0	(0,03)	(0,20)	—	(0)	(Tr)
6,3	(917,0)	(15,0)	(0)	0	0,06	0,11	1,90	0,24	(0)	11,25
3,4	334,0	29,3	0	0	0,02	0,04	0,17	—	—	—
0,1	2,5	0,7	0	0	0	0	0	(0)	(0)	(0)
2,4	(240,0)	(270,0)	0	0	(0)	(0,01)	(0,10)	(Tr)	(0)	(Tr)
0,1	146,3	48,4	39,96	0,90	0,04	0,18	0,10	0,05	0,33	5,00
0,6	1302,8	395,8	317,40	7,95	0,29	1,29	0,74	0,25	2,30	38,50
0,2	322,1	131,5	94,32	1,30	0,05	0,40	0,20	0,05	0,20	7,50
0,2	363,3	122,3	101,22	2,40	0,08	0,40	0,20	0,05	0,50	9,50
(0,1)	(140,0)	(50,0)	42,00	0,45	0,03	0,17	0,09	0,14	(0,20)	(4,00)
0,1	158,2	53,0	3,60	0,96	0,04	0,17	0,22	0,04	0,30	5,00
0,6	1737,5	538,8	11,83	9,80	0,40	1,70	1,00	0,30	3,10	35,50
0,3	(500,0)	(180,0)	4,80	1,90	0,09	0,50	0,30	0,05	0,55	(10,00)
0,1	181,0	39,8	43,73	1,30	0,05	0,13	0,27	0,04	0,05	0,60