630 US ISSN 0271-9916 February 1986 RESEARCH EXTENSION SERIES 065

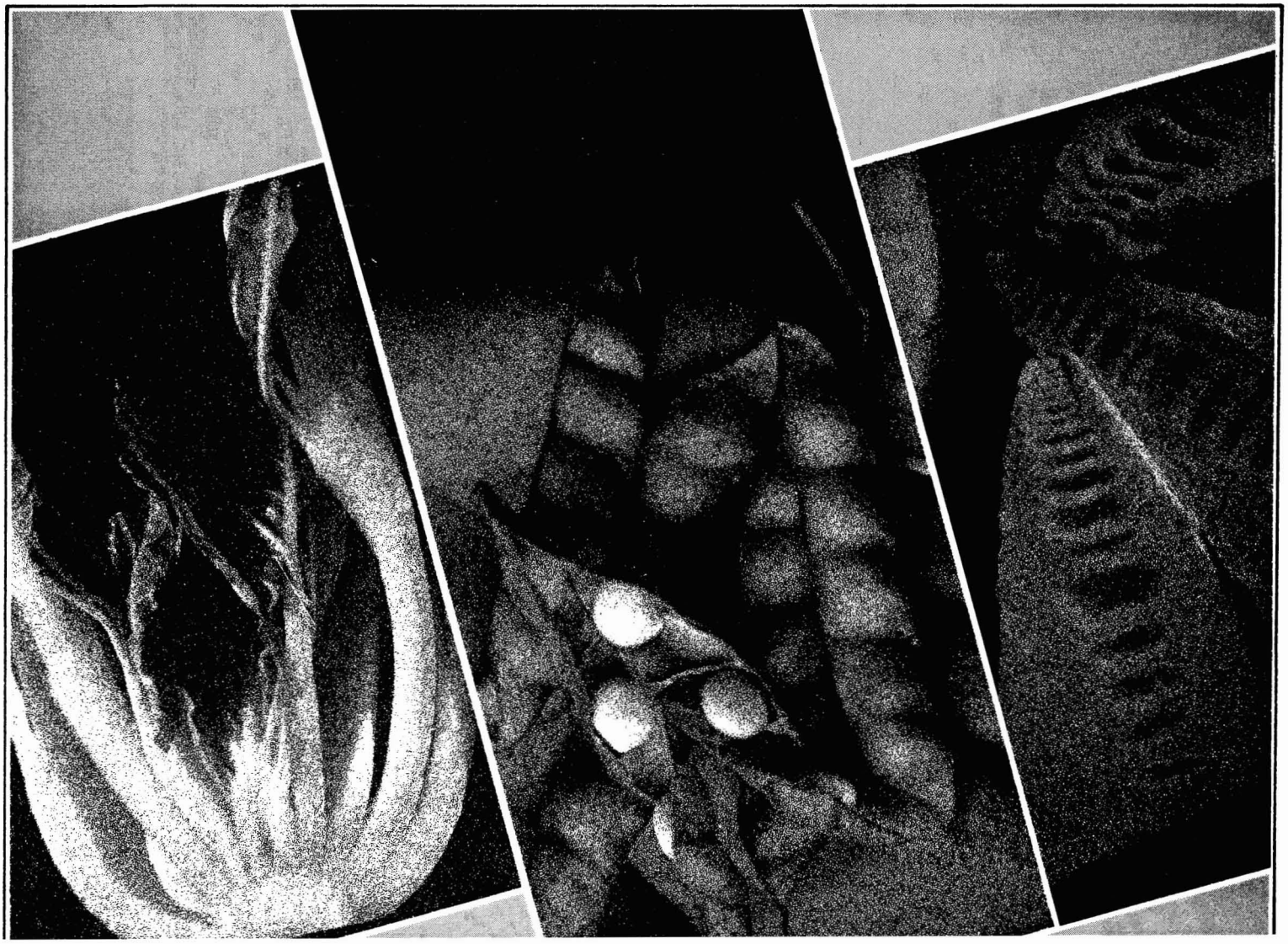
FOODS OF HAWAII AND THE PACIFIC BASIN

Vegetables and Vegetable Products: Raw, Processed, and Prepared

Volume 2: Percentage of U.S. Recommended Daily Allowances

Nao S. Wenkam

HITAHR · COLLEGE OF TROPICAL AGRICULTURE AND HUMAN RESOURCES · UNIVERSITY OF HAWAII



Library of Congress Cataloging-in-Publication Data
(Revised for vols. 2 and 5)

Wenkam, Nao S. (Nao Sekiguchi),
Foods of Hawaii and the Pacific Basin.

(Research extension series, 0271-9916 ; 038)
Includes bibliographies and index.
Cover title.
"June 1983– ."
Contents: [1] Vegetables and vegetable products—raw, processed, and prepared. v. 1. Composition. v. 2. Percentage of U.S. recommended daily allowances. (v.) — [2] Fruits and fruit products—raw, processed, and prepared. v. 5. Percentage of U.S. recommended daily allowances. (v.)

1. Food—Collected works. 2. Food crops—Hawaii—Collected works. 3. Food crops—Oceania—Collected works. 4. Food crops—Asia—Collected works. I. Title. II. Series.
TX353.W374 1983 641.3'5'09969 82-18741

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INTRODUCTION

> It is bad enough that a man should be ignorant, for this cuts him off from the commerce of other men's minds. It is perhaps worse that a man should be poor, for this condemns him to a life of stint and scheming in which there is no time for dreams and no respite from weariness. *But what surely is worst is that a man should be unwell, for this prevents him doing anything much about either his poverty or his ignorance* [emphasis added].
>
> G. H. T. Kimble (*1*)

Since the sixties national attention has been focused on nutrition partly through nontraditional channels—politicians and consumers—and, as a result, nutrition has become visible in the politico-social arena. Prior to the sixties, nutritional science and nutrition policies had been largely the domain of scientific groups in institutes and agencies such as universities and the U.S. Department of Agriculture. However, other sectors concerned about the (i) documented existence of hunger and malnutrition in America, (ii) eroding confidence in the nutritional quality of the food supply, and (iii) consumers' inability to identify nutritional quality of an increasing number of processed, prepared, and engineered foods, caused public attention to be focused on nutrition, leading to the White House Conference on Food, Nutrition, and Health in 1969. Of the many considerations that emerged from that conference, a major issue was the overall healthfulness of the U.S. diet and the need for appropriate dietary guidance that would shift the responsibility of health to the consumer.

One outgrowth of this concern was the passage of Federal nutrition labeling laws, effective July 1, 1975, which made information on nutrition and food composition more available than ever before. Not only was the information itself printed on the product labels, but, perhaps more importantly, the information was comprehensible to consumers as percentages of daily recommended amounts of each nutrient per serving. Although not perfect, this system made nutrient intakes easier to interpret than that of using food composition tables (which necessitated comparisons with standards such as the Recommended Dietary Allowances), and at the same time was more precise than systems relying on portions selected from certain food groups such as the "basic four."

Many manufacturers in this country comply voluntarily with the labeling laws, even when they are not compelled to (two exceptions are addressed on p. 3). The information on nutrition labels appears as amounts of food energy and selected nutrients contained in a designated serving size, and it also appears as the percentage of the U.S. Recommended Daily Allowances, or U.S. RDA, contributed by up to 20 or so nutrients per serving as it comes from the container (*2*). However, food items such as fresh produce that are not marketed in packages or containers do *not* carry nutrition information labels. *The purpose of this publication is to bridge this gap by making available nutrition information—given as percentage of U.S. Recommended Daily Allowances—for eight nutrients provided by specific amounts of the various fresh vegetables and vegetable products* (Table 1). These are the foods presented in Volume 1. Foods are also listed in descending order of percentages for each nutrient (Table 2).

In order to facilitate use of this publication, an overview of nutrition, the development of the U.S. RDA, and the derivation of values in Table 1 are provided. These sections are followed by an example of nutrition labeling with an explanation of some terms and a section on how to use the information both on labels and in this publication in diet selection. Finally, but equally important, there is a section on the bases and limitations of analyzing food components and establishing allowances. It may require a costly educational campaign to empower consumers to become responsible for their dietary condition.

> . . . *But what surely is best is that a man should be well, for this allows him to do anything he chooses to free himself, his progeny, and society from poverty and ignorance.*
>
> N. S. Wenkam

OVERVIEW OF NUTRITION

The relationship between the human body's need for nutrients and food as the source of these nutrients is known, although not with the precision available for growing crops or producing animals. What is the current state of this knowledge?

Of body needs, it has been established that there are approximately 40 essential nutrients; that is, nutrients that the body cannot synthesize in quantities commensurate with its needs and therefore must obtain from food sources. Of these, Recommended Dietary Allowances have been established for the following: energy, protein, 13 vitamins, and 15 minerals (see Table 3). These allowances vary from one nutrient to another—for example, from 56 *grams* of protein to 60 *milligrams* (0.060 gram) of vitamin C to 3 *micrograms* (0.000003 gram) of vitamin B_{12} per day—spanning more than a millionfold range. It is also known that the need for energy and nutrients varies with age, sex, physical activity, and other conditions such as pregnancy and lactation. And finally, it is known that the nutrients function in three general ways: (i) to provide energy to the body, (ii) to support growth, maintenance, and repair, and (iii) to regulate other body processes and reactions.

Of foods as the source of nutrients, it is known that different foods provide different nutrients and in different quantities. No single food provides all the nutrients in the amounts required; i.e., there is no one perfect food, with the exception of mother's milk during the first few months of infancy. Many combinations of foods, whether vegetarian, ethnic, or convenience foods, can supply all nutrients. It is known that certain food groups provide the classes of nutrients to perform directly the three general functions: (i) for energy production, food groups that provide protein, fat, and carbohydrate are needed; (ii) for growth, maintenance, and repair of body tissues, food groups that provide protein and minerals, with smaller amounts of fat and carbohydrate, are needed; and (iii) for regulation of other body processes, food groups that provide protein, minerals, and vitamins are needed. (Indirectly, the first function requires minerals and vitamins, and the second function requires vitamins.)

Since human needs for nutrients, as well as the food sources, are known, health professionals perform nutritional assessments to determine whether individuals or groups are receiving all of the nutrients they need. One aspect of this assessment is dietary or nutrient intake measurements; others are biochemical analyses, physical examinations, and anthropometric determinations.

Against this background, it is recognized that a vast gap exists between this current knowledge of nutrition and the ability to bring this knowledge effectively within the reach of people. Nutrition labeling and similar schemes can be means of narrowing this gap by making it possible for consumers to estimate their nutrient intakes, and to choose the appropriate food changes that would align practice with knowledge.

DEVELOPMENT OF PERCENT U.S. RECOMMENDED DAILY ALLOWANCES

The source of information for diet assessment has been the laboratory analyses of diets or food composition tables and subsequent computer-assisted comparisons with the Recommended Dietary Allowances. In practice this technology is not available to most consumers nor is it easy for them to interpret the significance of the comparison. The nutrition labeling law has simplified a complex area of nutrition by developing "percent U.S. RDA," a concept that is acceptable to industry and meaningful to consumers (*2*).

Four sets of the U.S. RDA were developed for different groups of people by the Food and Drug Administration with the support of professional nutrition groups, consumers, and food industry groups (Table 4). The set most commonly used in nutrition labeling is the one for adults and children four or more years of age. The values in this set were derived from the highest value for each nutrient given in the 1968 Recommended Dietary Allowances table for any male or female (nonpregnant, nonlactating) four or more years of age, except for calcium, phosphorus, biotin, pantothenic acid, copper, and zinc (*2*). In the case of calcium and phosphorus, although 1.4 grams was the highest daily allowance for males 12 to 18 years of age, 1 gram was considered generally acceptable. In the case of biotin, pantothenic acid, copper, and zinc, Recommended Dietary Allowances had not been set in 1968 but these nutrients were recognized as essential in human nutrition. (By 1980 all four were included; see Table 3.) Although the Recommended Dietary Allowances have been revised three times since 1968, the U.S. RDA have remained unchanged because the latter are generally higher than the revised versions and because it is expensive and confusing to make frequent changes on food labels.

The nutrition labeling laws require that the content of protein and seven vitamins and minerals be stated as the percentage of the U.S. RDA in one serving of the food. Twelve other vitamins and minerals also may appear on the label as percentages of the U.S. RDA. (Nutrients for which U.S. RDA have not been established are not shown.) Of the other U.S. RDA sets appearing in Table 4, those for infants and children under four years of age are used by the baby food industry in labeling strained infant and junior foods. The fourth set is for pregnant or lactating women. Note that full nutrition labeling is mandatory only if nutrients are added to a food or if a nutrition claim is made (*2*).

A similar concept based on Recommended Dietary Allowances values was originated nearly half a century ago by Mary Schwartz Rose, Teachers' College, Columbia University, using the term "shares" to describe the fraction of Recommended Dietary Allowances values supplied by a specified serving of food. The Nutrition Branch, Department of Health, State of Hawaii, has for many years effectively used this share concept by preparing bar graphs and ribbon charts attached to drawings of the food item (*3*). The successful use of ribbon charts in the villages of Samoa, Fiji, Kosrae, and other Pacific islands attests to their adaptability for other communities (*4,5*).

DERIVATION OF VALUES IN TABLE 1

All values in Table 1 are derived from data in HITAHR Research Extension Series 038, *Foods of Hawaii and the Pacific Basin, Vegetables and Vegetable Products: Raw, Processed, and Prepared, Volume 1: Composition* (*6*). The item numbers correspond to the numbers used in Volume 1. Thus the scientific and local names, the history of an item, descriptions of general eating quality, size, refuse, method of cooking, laboratory preparation and sampling procedures, and analytical methods for the items in this publication can be found in Volume 1. Note that the data in the tables are from laboratory analyses and do not contain estimated, derived, or imputed values from another form of the food or from a similar food.

Common Measure

Household or retail market measures are referred to as common measures in Table 1. They are convenient quantities that may or may not be average serving sizes. The weight of the common measure, rounded to the nearest gram, includes only the edible portion and not the inedible waste or refuse.

The weights of common measures for some items varied widely. At least five separate measurements were taken for each item and averaged. There was some uncertainty in arriving at the weight of a 1-cup volume of irregularly shaped items such as leaflets, sprouts, and sliced or diced pieces. One-cup weights were affected by the size of the pieces and the pressure applied in filling the cup, and therefore may vary from published weights. (Some items like belembe and head cabbage carry the descriptions "firmly packed" or "lightly packed," respectively, but others do not.) Deciding on the linear dimensions that best conveyed the size of asymmetrical items, e.g., chayote (shaped like a flattened pear) and tapered items like bamboo shoots (teardrop shaped), without a lengthy set of numbers was a problem because they were irregular. The diameter given for whole items is the maximum diameter for the purpose of approximating and visualizing the volume in relation to weight.

Energy Value

The calorie content in a common measure is taken from Volume 1, Table 1, Column E, and given to the nearest 2 kilocalories (2, 4, 6 . . .) up to 20 kilocalories, to the nearest 5 kilocalories (20, 25, 30 . . .) up to 50 kilocalories, and to the nearest 10 kilocalories (50, 60, 70 . . .) above 50 kilocalories. A figure midway between two choices, e.g., 3 kilocalories, midway between 2 and 4, was arbitrarily raised to the higher of the two, 4 kilocalories.

Protein, Vitamins, and Minerals

Percentages of the U.S. RDA in a common measure are calculated from the values in Volume 1, Table 1, Column E, and are given in increments of 2 percent (2, 4, 6 . . .) up to 10 percent, in increments of 5 percent (10, 15, 20 . . .) up to 50 percent, and in increments of 10 percent (50, 60, 70 . . .) above 50 percent. An asterisk (*) designates that none or less than 1 percent of the U.S. RDA of that nutrient is present in the common measure of that food. A blank space designates that the food was not analyzed for that nutrient.

The calculation of percentage of U.S. RDA, using Item 01-001, arrowhead, raw—protein, is given here as an example. The protein content of one arrowhead corm weighing 12 grams is 0.67 gram (first common measure, Column E, Volume 1). The U.S. RDA is 65 grams. The amount of protein, expressed

as percentage of U.S. RDA, provided by one corm is:

(0.67 g protein/65 g protein)100 = 1.03 percent.

Expressed in increments of 2 percent, it becomes 2 percent.

NUTRITION INFORMATION LABEL AND ITS USE

The format, headings, and terms to be used in displaying nutrient content on the nutrition information label have been standardized, as the laws are very specific about the information that must be stated. A label taken from a dry cereal product is shown below.

NUTRITION INFORMATION

SERVING SIZE: 1 OZ. (28.4 g, ABOUT 1 CUP). CEREAL ALONE OR WITH ½ CUP VITAMINS A AND D SKIM MILK OR VITAMIN D WHOLE MILK.

SERVINGS PER PACKAGE: 15

	CEREAL	WITH SKIM MILK	WITH WHOLE MILK
CALORIES	110	150	180
PROTEIN	2 g	6 g	6 g
CARBOHYDRATE	24 g	30 g	30 g
FAT	0 g	0 g	4 g
CHOLESTEROL	0 mg	0 mg	15 mg
SODIUM	300 mg	360 mg	360 mg
POTASSIUM	35 mg	240 mg	220 mg

PERCENTAGE OF U.S. RECOMMENDED DAILY ALLOWANCES (U.S. RDA)

	CEREAL	WITH SKIM MILK	WITH WHOLE MILK
PROTEIN	4	15	15
VITAMIN A	100	100	100
VITAMIN C	100	100	100
THIAMIN	100	100	100
RIBOFLAVIN	100	110	110
NIACIN	100	100	100
CALCIUM	*	15	15
IRON	100	100	100
VITAMIN D	50	60	60
VITAMIN E	100	100	100
VITAMIN B_6	100	100	100
FOLIC ACID	100	100	100
VITAMIN B_{12}	100	110	110
PHOSPHORUS	4	15	15
MAGNESIUM	2	6	6
ZINC	100	100	100
COPPER	2	4	10
PANTOTHENIC ACID	100	100	100

*CONTAINS LESS THAN 2% OF THE U.S. RDA OF THIS NUTRIENT

The serving size, 1 ounce (28.4 grams or about 1 cup), identifies the amount of cereal for which the nutrition information is given. Additional information may be given, such as when one serving is eaten with ½ cup skim or whole milk. The number of servings per container must be shown. Energy value stated in kilocalories, and protein, carbohydrate, and fat content stated in grams must be declared for a serving. (To visualize a gram of weight, note that a penny weighs about 2½ grams.) There are no U.S. RDA or Recommended Dietary Allowances for carbohydrate and fat. The protein and all vitamin and mineral contents are given as percentage of U.S. RDA. Under certain conditions, the fatty acid, cholesterol, sodium, and potassium contents also may be declared in grams and must appear immediately following the fat declaration.

The labels can provide the information necessary to estimate the relative nutrient intakes for a full day. For example, in the label shown above, the percentage of U.S. RDA conveys to consumers that a 1-cup serving of cereal with ½ cup skim milk provides 15 percent of the protein allowance for a day, 100 percent of the vitamin C allowance, and so forth for the other nutrients listed. By adding up the percentages of U.S. RDA for each nutrient in all foods eaten in one day, one can find out if the percentages fall short of or exceed 100 percent. In order to take care of day-to-day variations, estimates for several days of the week should be averaged. Most people do not need 100 percent for every nutrient. Using 100 percent as a goal is not dangerous, but concern about shortages is probably unwarranted unless intakes repeatedly fall below 70 percent. In this case the reader should refer to the Recommended Dietary Allowances for his/her age–sex category. (In a few categories and for some nutrients, the Recommended Dietary Allowances are considerably lower than the U.S. RDA; e.g., for females over 50 years of age the Recommended Dietary Allowances are 56 percent and 65 percent of the U.S. RDA for iron and niacin, respectively.)

Vegetables that are important sources of eight nutrients are shown in Table 2. The foods are listed in descending order according to the percentage of the U.S. RDA provided in a designated serving. Informed readers of tables and labels can improve nutrient intakes and expand the variety of vegetable items in meals and snacks, and can become responsible for their dietary condition.

BASES AND LIMITATIONS OF ANALYZING FOOD AND ESTABLISHING ALLOWANCES

Analytical methods used for published food composition tables are standardized in the United States by the Association of Official Analytical Chemists (*7*). Although details of these methods are beyond the scope of this publication (they have been reported in Volume 1), some discussion of their applicability or limitations can provide a basis for interpreting the nutrient intake values obtained from food composition and Recommended Dietary Allowances tables.

First, it is recognized that large variations in composition occur due to natural factors, such as variety, maturity, soil and climate conditions, and man-induced factors in postharvest handling, such as storage conditions, marketing practices, and consumer preparation and cooking treatments, which contribute to losses or gains in nutrients. Second, variations exist in bioavailability, or the ability of the body to utilize nutrients. Foods contain naturally occurring compounds such as oxalic acid (in spinach) and phytic acid (in whole grains), which combine with calcium and iron, or antithiamin factors (in tea), which reduce the bioavailability of nutrients (*9*). The calcium, iron, and thiamin contents of foods in most food composition tables represent the total amounts determined analytically and do not represent physiological availability. Other nutrients fall into this category. Considering these factors, consumers are cautioned not to be too concerned over relatively minor differences among values in different tables.

The Recommended Dietary Allowances are based on the best scientific evidence available on body needs for nutrients and are revised about every five years by qualified scientists selected by the National Academy of Sciences. The recommendations are not absolute requirements and, except for energy, include a margin of safety set higher than the requirements to cover most of the population. Intakes of two-thirds of the RDA are often considered adequate (except for energy).

It is recognized that great variations exist also in human requirements for nutrients due to factors such as age, sex, pregnancy or lactation states, physical activity, and nutritional state. The Recommended Dietary Allowances are intended to provide for individual variations among practically all normal, healthy people under usual environmental stresses in the United States. It is important to understand that they are approximate and generous, and are intended to apply to diets in the whole population. They cannot be taken literally as a benchmark for one's personal requirement. If they are used to measure the adequacy of individual diets, an accurate view is to see nutrient needs falling in a desirable range, with undesirable intake zones both above (overconsumption) and below it (underconsumption). Food composition tables, Recommended Dietary Allowances, and U.S. RDA are indispensable tools for evaluating nutrient consumption, but they must be interpreted with an understanding of the bases and limitations of the scientific information from which they evolved.

Table 1. Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-001	Arrowhead, raw										
	1 corm, 1 1/8 inch diameter	12	12	2	*	*	2	*	*	*	2
	1 pound	454	430	40	*	8	50	20	35	8	45
01-002	Arrowhead, cooked										
	1 corm, 1 inch diameter	12	12	*	*	*	2	*	*	*	*
	1 pound	454	440	30	*	2	45	15	25	4	30
01-003	Asparagus, raw										
	4 spears, 7 x 1/2 inch diameter	50	10	2	8	25	8	6	4	*	2
	1 pound	454	90	20	70	250	80	60	35	6	10
01-004	Asparagus, cooked										
	4 spears, 7 x 1/2 inch diameter	45	12	2	15	20	6	6	4	2	4
	1 pound	454	110	20	140	210	70	50	35	10	30
01-005	Bamboo shoots, raw										
	1 pound	454	90	15						2	20
01-006	Bamboo shoots, cooked (Hawaii)										
	1 cup, 1/2 inch slices	120	16	2						2	2
	whole, 8 3/4 x 1 3/4 inch diameter	165	25	4						2	2
01-007	Bamboo shoots, canned (Japan)										
	1 cup, 1/8 inch slices	130	30	4	*	4	10	4	4	2	2
	whole, 3 x 1 1/4 inch diameter	37	8	2	*	*	4	2	2	*	*
01-008	Bamboo shoots, canned (Taiwan)										
	1 cup, 1/8 inch slices	145	30	4	*	2	*	2	2	2	4
	whole, 4 1/4 x 2 3/4 inch diameter	205	40	4	*	4	*	2	2	2	4
01-009	Banana bud, raw										
	1 cup, 1/4 inch pieces	70	18	2	*	*	*	*	2	2	2
	1 pound	454	120	10	6	6	*	4	10	15	8
01-010	Beans, broad, dried (Japan)										
	1 cup	150	500	50		*		15	15	20	40
	6 ounce package	170	570	60		*		20	15	20	50

01-011	Beans, green, raw										
	1 cup, 1 to 1 1/2 inch lengths	110	30	4	8	45	4	6	2	6	4
	6 medium, 6 inch lengths	45	12	2	4	20	2	2	2	2	2
01-012	Beans, green, cooked										
	1 cup, 1 to 1 1/2 inch lengths	112	30	4	10	30	4	8	4	6	4
	1 pound	454	120	15	50	110	15	30	10	20	20
01-013	Beans, hyacinth, raw										
	1 cup, 1 inch lengths	87	25	2	2	15	2	4	2	4	4
	6 medium, 4 inch lengths	50	14	2	2	10	2	2	2	2	2
01-014	Beans, hyacinth, cooked										
	1 cup, 1 inch lengths	90	40	4	6	8	4	6	2	4	4
	1 pound	454	190	20	30	45	25	30	15	20	20
01-015	Beans, lima, raw										
	1 cup, shelled	120	120	10	8	70	20	10	10	2	10
	1 pound	454	440	45	30	250	70	35	40	10	45
01-016	Beans, lima, cooked										
	1 cup, shelled	133	150	15	8	70	25	15	15	2	15
	1 pound	454	510	45	30	250	90	50	45	10	50
01-017	Beans, soy, green, raw										
	1 cup, shelled	140	170	25	20	120	35	20	15	8	30
	1 pound	454	560	90	70	400	120	70	50	25	100
01-018	Beans, soy, green, cooked										
	1 cup, shelled	157	220	35	40	80	35	20	15	15	25
	1 pound	454	640	100	110	240	110	60	45	45	70
01-019	Beans, winged or Goa, raw										
	1 cup, 1 inch lengths	45	12	2	6	*	6	2	2	2	2
	6 medium, 6 inch lengths	100	25	4	15	*	15	6	4	6	4
01-020	Beans, winged or Goa, cooked										
	1 cup, 1 inch lengths	62			8	*	8	4	2	4	2
	1 pound	454			60	*	60	25	15	25	15
01-021	Beans, yardlong, raw										
	1 cup, 1 1/2 inch lengths	100	40	6	6	10	6	6	4	8	4
	6 medium, 12 inch lengths	60	25	4	4	6	4	4	2	4	2
01-022	Beans, yardlong, cooked										
	1 cup, 1 1/2 inch lengths	110	45	4	10	30	6	6	4	4	6
	1 pound	454	180	20	40	120	25	25	15	20	25

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-023	Beans, yellow wax, raw										
	1 cup, 1 to 1 1/2 inch lengths	110	30	2	2	35	4	8	4	4	4
	6 medium, 6 inch lengths	45	12	2	*	15	2	4	2	2	2
01-024	Beans, yellow wax, cooked										
	1 cup, 1 to 1 1/2 inch lengths	112	35	4	2	35	8	15	6	6	4
	1 pound	454	140	15	10	150	35	50	25	25	20
01-025	Beans, sprouts, mung, raw										
	1 cup, lightly packed	66	14	2	*	10	4	2	2	*	2
	12 ounce package	340	70	10	*	60	20	15	8	2	10
01-026	Beans, sprouts, mung, cooked										
	1 cup, lightly packed	100			*	6	4	4	2	*	2
	12 ounce package	340			*	25	15	15	8	2	8
01-027	Beans, sprouts, soy, raw										
	1 cup, lightly packed	80	45	10	*	8	8	6	2	4	8
	12 ounce package	340	190	40	4	35	40	25	10	15	35
01-028	Beans, sprouts, soy, cooked										
	1 cup, lightly packed	110	50	10	*	4	10	6	2	4	6
	12 ounce package	340	170	30	4	10	30	20	8	15	20
01-029	Beets, raw										
	1 cup, 1/2 inch cubes	130	50	2	*	8	2	4	2	2	4
	whole, 2 3/8 inch diameter	120	45	2	*	8	2	4	2	2	4
01-030	Beets, cooked										
	1 cup, 1/2 inch cubes	165	110	6	*	8	2	6	2	10	6
	whole, 2 1/2 inch diameter	140	90	6	*	8	2	4	2	10	6
01-031	Beets, greens, raw										
	1 cup, 1 inch lengths	40	12	2	35	8	2	6	*	4	4
	1 pound	454	130	20	410	90	20	60	10	50	35
01-032	Beets, greens, cooked										
	1 cup, 1 inch lengths	98	30	4	120	*	4	15	2	10	25
	1 pound	454	130	20	570	*	25	70	15	50	110

01-033	Belembe or Tahitian taro, raw										
	1 cup, 1/2 inch strips, firmly packed	30	12	2	25	50	2	4	2	4	2
	6 leaves, 10 x 12 inch	90	35	4	70	160	4	15	6	10	8
01-034	Belembe or Tahitian taro, cooked										
	1 cup, 2 inch strips	210	90	15	530	210	10	40	8	30	25
	1 pound	454	190	30	1140	450	20	80	15	70	50
01-035	Bittermelon, fruit, raw										
	1 cup, 1/2 inch slices	93	20	2	2	130	6	4	2	2	6
	whole, 9 1/2 x 1 1/2 inch diameter	100	25	2	2	140	6	4	2	2	6
01-036	Bittermelon, fruit, cooked										
	1 cup, 1/2 inch slices	125	25	2	4	70	4	4	2	2	2
	1 pound	454	90	6	15	240	15	15	6	4	10
01-037	Bittermelon, leafy tips, raw										
	1 cup, 1 inch lengths	25	12	2	20	50	4	8	2	2	4
	6 leafy tips, 6 inch lengths	35	18	4	30	70	6	10	2	4	4
01-038	Bittermelon, leafy tips, cooked										
	1 cup, 1 inch lengths	30	10	2	25	10	4	6	2	4	8
	1 pound	454	160	25	390	160	50	90	25	70	110
01-039	Broccoli, raw										
	1 cup, 1/2 inch pieces	90	30	6	20	190	8	10	4	6	4
	1 stalk, 7 1/2 x 6 1/2 inch diameter	250	90	15	50	520	25	30	10	15	10
01-040	Broccoli, cooked										
	1 cup, 1/2 inch pieces	105	30	4	25	110	8	10	4	6	4
	1/4 pound	114	30	4	25	120	8	10	4	6	4
01-041	Burdock root, raw										
	1 cup, 1/2 inch lengths	120	100	4	*	*	4	4	2	4	15
	1 root, 26 x 7/8 inch diameter	115	100	4	*	*	4	4	2	4	15
01-042	Burdock root, cooked										
	1 cup, 1/2 inch lengths	125	110	4	*	*	4	4	2	6	6
	1 pound	454	400	15	*	*	10	15	8	20	20
01-043	Cabbage, Chinese or celery, raw										
	1 cup, 1 inch pieces	70	8	2	2	30	2	2	2	2	2
	whole, 9 1/4 x 5 1/2 inch diameter	800	80	20	15	320	25	20	20	25	20
01-044	Cabbage, Chinese or celery, cooked										
	1 cup, 1 inch pieces	120			2	30	4	4	4	4	8
	1 pound	454			8	120	15	10	10	15	35

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-045	Cabbage, Chinese or celery, kim chee (Korea)										
	1 tablespoon, heaping	20	4	*	6			*		2	2
	1 pound	454	100	15	150			20		25	30
01-046	Cabbage, Chinese or celery, kim chee										
	1 tablespoon, heaping	20	4	*	*	*	*	*	*	*	*
	1 pound	454	70	10	6	*	10	8	10	20	15
01-047	Cabbage, Chinese or celery, salt pickled										
	1 cup, 1 inch lengths	110	25	2	8	2	*	2	*	6	2
	1 ounce	28	6	*	2	*	*	*	*	2	*
01-048	Cabbage, green mustard, raw										
	1 cup, 1 inch pieces	55	8	2	15	50	2	4	2	4	6
	whole, 10 x 4 inch diameter	270	40	8	60	260	10	20	8	20	25
01-049	Cabbage, green mustard, cooked										
	1 cup, 1 inch pieces	125	16	4	40	70	4	6	4	10	6
	1 pound	454	60	15	150	240	15	25	10	35	20
01-050	Cabbage, green mustard, salt pickled										
	1 cup, 1 inch lengths	130	30	4	80	*	4	8	2	10	6
	1 ounce	28	6	2	15	*	2	2	*	2	2
01-051	Cabbage, head, raw										
	1 cup, shredded, lightly packed	78	18	2	2	80	2	2	2	4	2
	whole, 7 x 5 3/4 inch diameter	800	180	15	10	800	20	15	10	30	10
01-052	Cabbage, head, cooked										
	1 cup, 1 inch pieces	140	30	2	6	90	2	2	2	6	2
	1 pound	454	100	8	15	290	10	8	6	20	8
01-053	Cabbage, head, kim chee										
	1 tablespoon, heaping	12	2	*	*	2	*	*	*	*	*
	1 pound	454	100	10	*	60	15	6	4	25	15
01-054	Cabbage, white mustard, raw										
	1 cup, 2 inch pieces	55	6	2	30	30	2	2	2	4	4
	whole, 14 x 4 inch diameter	130	16	2	70	70	4	6	6	10	10

01-055	Cabbage, white mustard, cooked										
	1 cup, 2 inch pieces	145	18	4	90	45	4	4	4	15	8
	1 pound	454	50	10	280	140	15	15	15	40	25
01-056	Cabbage, white mustard, bran-salt pickled										
	1 cup, 1 inch lengths	130	40	4	60	4	10	10	15	20	25
	1 ounce	28	8	*	15	*	2	2	2	4	6
01-057	Cabbage, white mustard, salt pickled										
	1 cup, 1 inch lengths	135	25	2	35	*	2	6	4	10	6
	1 ounce	28	6	*	8	*	*	2	*	2	2
01-058	Carrots, raw										
	1 cup, 1/4 inch slices	125	60	4	460	15	8	4	6	6	4
	whole, 7 1/4 x 1 1/4 inch diameter	85	40	2	310	10	6	2	4	4	2
01-059	Carrots, cooked										
	1 cup, 1/4 inch slices	165	90	2	680	20	10	6	8	6	4
	1 pound	454	240	8	1860	50	30	15	25	20	15
01-060	Cauliflower, raw										
	3 flowerbuds, 1 1/2 inch diameter	55	12	2	*	35	2	2	2	2	2
	whole, 3 1/4 x 5 inch diameter	350	70	10	2	230	15	15	8	10	8
01-061	Cauliflower, cooked										
	3 flowerbuds, 1 1/2 inch diameter	55	12	2	*	30	2	2	2	2	2
	1 pound	454	100	15	2	240	20	20	15	10	10
01-062	Celery, raw										
	1 cup, 1/4 inch pieces	115	20	2	2	15	2	2	2	8	*
	1 stalk, 8 x 1 1/2 inch root end	42	8	*	*	6	*	*	*	2	*
01-063	Celery, cooked										
	1 cup, 1/2 inch pieces	120	18	*	2	8	2	2	2	4	*
	1 pound	454	70	4	4	30	6	6	6	15	4
01-064	Chard, raw										
	1 cup, 1 inch pieces	36	6	*	20	15	2	2	*	2	6
	1 stalk, 15 inch lengths	30	6	*	15	10	*	2	*	2	6
01-065	Chard, cooked										
	1 cup, 1 inch pieces	135	25	4	80	15	6	8	2	8	15
	1 pound	454	90	15	270	50	15	30	8	25	60
01-066	Chayote, raw										
	1 cup, 1/8 inch slices	130	25	2	2	25	2	4	2	2	2
	whole, 4 x 2 3/4 inch diameter	200	40	2	2	35	2	6	4	2	2

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-067	Chayote, cooked										
	1 cup, 1/8 inch slices	160		2	2	15	2	4	2	2	2
	1 pound	454		4	8	50	6	15	4	6	6
01-068	Chrysanthemum, garland, raw										
	1 cup, 2 inch lengths	25	4	*	60	10	*	2	*	2	6
	1 bunch, 8 inch lengths	300	45	8	710	150	6	30	10	10	60
01-069	Chrysanthemum, garland, cooked										
	1 cup, 2 inch lengths	100	20	2	100	10	2	10	4	6	20
	1 pound	454	90	10	460	60	6	45	15	30	90
01-070	Corn, raw										
	1 cup, kernels	155	130	8	*	40	20	10	15	*	2
	1 ear, 8 x 2 1/2 inch diameter	130	110	8	*	35	15	10	15	*	2
01-071	Corn, cooked										
	1 cup, kernels	165	180	8	2	45	20	15	20	*	4
	1 pound	454	510	25	8	120	60	45	60	2	10
01-072	Cowpeas, green pods, raw										
	1 cup, 1 1/2 inch lengths	95	30	4	15	35	8	4	4	4	4
	6 medium, 11 inch lengths	65	20	4	10	25	6	4	2	2	2
01-073	Cowpeas, green pods, cooked										
	1 cup, 1 1/2 inch lengths	95	30	4	25	20	8	6	4	4	4
	1 pound	454	140	15	110	100	35	25	20	15	20
01-074	Cowpeas, leafy tips, raw										
	1 cup, 1 inch lengths	36	8	2	6	15	6	2	2	2	4
	6 leafy tips, 9 inch lengths	30	6	2	6	15	6	2	2	2	2
01-075	Cowpeas, leafy tips, cooked										
	1 cup, 1 inch lengths, lightly packed	55	12	4	15	20	8	4	2	4	4
	1 pound	454	100	35	120	150	70	35	20	30	25
01-076	Cowpeas, seeds, raw										
	1 cup	140	160	20	4	70	35	10	15	4	15
	1 pound	454	530	60	10	220	110	30	45	10	50

01-077	Cowpeas, seeds, cooked										
	1 cup	150	140	15	2	45	25	10	10	4	15
	1 pound	454	430	50	6	130	70	30	35	10	50
01-078	Cucumber, pared, raw										
	6 slices, 1/8 x 2 inch diameter	65	8	*	*	15	*	*	*	*	*
	whole, 7 1/4 x 2 inch diameter	230	30	2	2	45	2	2	2	4	2
01-079	Cucumber, kim chee										
	3 pieces, 1 inch cubes	25	6	*	*	2	*	*	*	*	*
	1 pound	454	100	8	4	25	10	8	10	4	10
01-080	Cucumber, salt pickled										
	half, 6 x 1 1/2 inch diameter	80	14	*	*	2	*	*	*	2	2
	1 ounce	28	4	*	*	*	*	*	*	*	*
01-081	Daikon, raw										
	1 cup, 3/4 inch cubes	125	20	2	*	50	2	2	2	2	4
	10 slices, 1/8 x 2 inch diameter	88	14	2	*	35	2	2	*	2	2
01-082	Daikon, cooked										
	1 cup, 3/4 inch cubes	145	25	2	*	35	*	2	2	2	2
	1 pound	454	80	4	*	120	*	6	4	8	4
01-083	Daikon, dried (Japan)										
	1 cup, lightly packed	30	80	4	*	*	6	10	6	20	10
	2 ounces	57	160	6	*	*	10	25	10	35	20
01-084	Daikon, salt pickled										
	half, 5 1/2 x 2 1/8 inch diameter	75	14	2	*	*	*	*	*	2	*
	1 ounce	28	6	*	*	*	*	*	*	*	*
01-085	Daikon, takuan										
	whole, small, 5 x 1 3/8 inch diameter	50	40	*	*	*	15	2	15	*	*
	1 ounce	28	20	*	*	*	10	*	8	*	*
01-086	Daikon, greens, salt pickled										
	1 cup, 1 inch lengths	120	40	4						8	20
	1 ounce	28	8	*						2	4
01-087	Eggplant, long, raw										
	1 cup, 1/2 inch cubes	85	20	2	2	*	4	2	2	*	4
	whole, 8 1/2 x 1 1/2 inch diameter	100	25	2	2	*	4	4	2	2	6
01-088	Eggplant, long, cooked										
	1 cup, 1/2 inch cubes	95	25	2	4	*	4	2	4	*	2
	1 pound	454	130	6	20	*	20	15	15	2	10

(a) Vitamin values are from a bran-salt pickled lot.

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-089	Eggplant, long, bran-salt pickled										
	whole, 2 1/4 x 1 1/8 inch diameter	20	6	*	*	*	2	*	2	*	2
	1 ounce	28	8	*	*	*	2	2	2	*	2
01-090	Eggplant, long, salt pickled										
	whole, 2 3/4 x 1 1/8 inch diameter	22	8	*	*	*	*	2	*	*	*
	1 ounce	28	10	*	*	*	2	2	2	*	2
01-091	Eggplant, round, raw										
	1 cup, 1/2 inch cubes	90	25	2	*	4	4	2	4	*	2
	whole, 4 x 3 inch diameter	205	50	4	2	6	8	6	8	2	4
01-092	Eggplant, round, cooked										
	1 cup, 1/2 inch cubes	130	35	2	2	*	4	2	4	*	2
	1 pound	454	120	6	8	*	15	10	15	4	8
01-093	Fern, dried (Japan)										
	1 cup	31	90	8		*	*	40	8	4	15
	1 ounce	28	80	6		*	*	35	6	4	10
01-094	Fern, tree, cooked										
	1 cup, 1 1/2 inch lengths	140	12	*	*		*	2	*	2	2
	1 stalk, 7 1/2 x 5/8 inch diameter	36	4	*	*		*	*	*	*	*
01-095	Fuki or butterbur, raw										
	1 cup, 1 inch lengths	95	20	*						10	2
	6 stalks, 10 x 1/4 inch diameter	30	6	*						4	*
01-096	Fuki or butterbur, canned (Japan)										
	1 cup, 1 1/2 inch lengths	125	10	*	*	25	*	*	*	4	4
	3 stalks, 4 x 5/8 inch diameter	45	4	*	*	8	*	*	*	2	2
01-097	Ginger root, raw										
	1/4 cup, coarsely diced	23	25	*	*		*	2	2	*	*
	5 slices, 1/8 x 1 inch diameter	10	12	*	*		*	*	*	*	*
01-098	Ginger root, salt pickled (Japan)										
	5 pieces, 1/16 inch slices	4	2	*	*	*	*	*	*	*	*
	1 ounce	28	18	*	*	*	*	*	*	2	6

01-099	Gourd, dishcloth, raw										
	1 cup, 1/2 inch slices	95	12	2	*	10	2	2	*	*	2
	whole, 12 x 1 1/2 inch diameter	150	18	2	*	15	4	4	2	*	2
01-100	Gourd, dishcloth, cooked										
	1 cup, 1/2 inch slices	178	35	2	2	15	6	4	2	2	4
	1 pound	454	90	4	4	40	15	10	6	4	10
01-101	Gourd, white flowered, raw										
	1 cup, 1/2 inch cubes	115	18	2	*	20	2	2	2	2	4
	whole, 12 x 3 1/8 inch diameter	600	100	6	*	110	10	8	10	10	15
01-102	Gourd, white flowered, cooked										
	1 cup, 1/2 inch cubes	145			*	4	2	2	2	4	2
	1 pound	454			*	15	8	6	8	10	6
01-103	Gourd, white flowered, dried (Japan)										
	1 cup, coarsely blended, packed	55	150	8	*	*	*	2	8	15	15
	3 strips, 75 x 1 inch width	36	100	4	*	*	*	2	6	10	10
01-104	Horseradish tree, leafy tips, raw										
	1 cup, lightly packed	21	16	4	50	45	4	8	2	8	4
	1 pound	454	340	70	1140	1010	80	180	50	170	100
01-105	Horseradish tree, leafy tips, cooked										
	1 cup, lightly packed	42	25	4	80	20	6	10	4	25	6
	1 pound	454	270	35	900	200	60	120	40	280	60
01-106	Horseradish tree, pods, raw										
	1 cup, 1 inch lengths	100	35	2	2	240	4	4	2	2	2
	3 pods, 14 x 3/8 inch diameter	45	14	2	*	110	2	2	2	2	*
01-107	Horseradish tree, pods, cooked										
	1 cup, 1 inch lengths	120	45	4	4	280	4	6	4	2	4
	1 pound	454	160	15	10	1050	15	20	15	10	10
01-108	Jute, raw										
	1 cup, 1 inch pieces	28	8	2	35	10	2	4	2	4	6
	6 plants, 6 inch lengths	35	10	2	45	15	2	4	2	6	8
01-109	Jute, cooked										
	1 cup, 1 inch pieces	87	30	4	170	2	6	10	4	20	15
	1 pound	454	170	25	860	8	30	60	20	100	80
01-110	Konnyaku (Hawaii)										
	1 piece, 4 x 3 x 3/4 inch	128	16	*	*	2	2	*	*	8	2
	1 pound	454	50	*	*	4	6	*	*	30	8

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Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-111	Konnyaku, canned (Japan)										
	1 cup, flower shape, 1 inch diameter	140	18	*	*	*	*	*	*	8	2
	1 pound	454	60	*	*	*	*	*	*	30	8
01-112	Lettuce, head										
	1 wedge, 1/8 of 6 inch diameter	75	8	*	*	2	2	2	*	2	*
	whole, 6 inch diameter	650	70	6	6	15	15	10	4	10	8
01-113	Lettuce, Manoa										
	1 cup, shredded	50	4	*	20	6	2	2	*	*	2
	whole, 4 x 7 inch diameter	150	14	2	60	20	6	6	2	2	4
01-114	Lotus root, raw										
	10 slices, 1/4 x 2 1/2 inch diameter	80	45	2	*	80	6	*	2	2	4
	1 lobe, 5 3/4 x 2 1/4 inch diameter	240	140	8	*	250	20	2	4	6	10
01-115	Lotus root, cooked										
	10 slices, 1/4 x 2 1/2 inch diameter	90	60	2	*	90	6	*	2	2	4
	1 pound	454	300	10	*	460	30	2	6	10	25
01-116	Malabar nightshade, raw										
	1 cup, 1 inch pieces	45	6	2	20	100	2	2	2	2	6
	1 pound	454	60	10	200	1000	20	25	15	20	70
01-117	Malabar nightshade, cooked										
	1 cup, 1 inch pieces	95	35	4	100	230	8	15	6	20	15
	1 pound	454	170	15	470	1100	40	60	25	100	70
01-118	Melon, Chinese preserving, raw										
	1 cup, 1/4 inch slices	130	16	*	*	60	*	2	2	2	15
	1 pound	454	50	2	*	210	2	6	6	6	60
01-119	Melon, Chinese preserving, cooked										
	1 cup, 1/4 inch slices	175	25	*	*	50	*	2	2	2	2
	1 pound	454	60	2	*	120	2	4	6	4	4
01-120	Melon, oriental pickling, raw										
	5 slices, 1/4 x 3 inch diameter	92	10	*						*	4
	1 pound	454	45	4						2	15

01-121	Mushroom, shiitake, dried (Japan)										
	4 whole, 2 1/4 inch diameter	8	25	2	*	*	2	6	6	*	2
	1 ounce package	28	80	6	*	2	6	20	20	*	4
01-122	Mushroom, shiitake, cooked (Japan)										
	4 whole, 3 inch diameter	72	40	2	*	*	2	6	6	*	2
	1 cup, 1/4 inch slices, packed	140	80	4	*	*	4	15	10	*	4
01-123	Okra, raw										
	1 cup, 1/2 inch slices	85	25	2	2	15	4	4	4	6	2
	8 pods, 3 inch lengths	95	25	2	2	15	4	4	4	6	2
01-124	Okra, cooked										
	1 cup, 1/2 inch slices	105	45	4	2	20	6	8	6	6	2
	8 pods, 3 inch lengths	100	40	2	2	15	6	8	6	6	2
01-125	Onions, green, with tops, raw										
	1 cup, 1 inch lengths	45	8	2	20	20	2	2	2	2	2
	1 stalk, 16 x 1/2 inch diameter	10	2	*	4	4	*	*	*	*	*
01-126	Onions, green, with tops, cooked										
	1 cup, 1 inch lengths	70	14	2	40	20	4	6	2	2	2
	1 pound	454	100	10	260	120	25	35	15	20	15
01-127	Onions, Maui, raw										
	1 cup, 1/2 inch pieces	150	60	2	*	15	4	2	2	4	4
	whole, 2 x 3 inch diameter	200	80	4	*	20	6	4	2	6	4
01-128	Onions, Maui, cooked										
	1 cup, 1/2 inch pieces	180	70	2	*	8	6	2	2	6	4
	1 pound	454	170	8	*	20	15	6	4	15	10
01-129	Parsley, Chinese										
	1 cup, 3/4 inch pieces, lightly packed	23	4	*	10	4	*	2	*	2	2
	1 bunch, 19 stems, 8 inch lengths	23	4	*	10	4	*	2	*	2	2
01-130	Peas, Chinese edible pod, raw										
	1 cup, 2 1/2 to 3 inch lengths	80	30	4	10	80	10	4	4	4	2
	10 pods, 2 1/2 to 3 inch lengths	15	6	*	2	15	2	*	*	*	*
01-131	Peas, Chinese edible pod, cooked										
	1 cup, 2 1/2 to 3 inch lengths	100	30	6	15	60	10	6	4	4	4
	1 pound	454	150	30	70	290	50	25	20	20	20
01-132	Pepeao, raw (Hawaii)										
	1 cup, 3/8 inch strips	100	25	*	*	2	6	10	*	2	4
	3 whole, 3 x 2 1/2 x 1/16 inch	45	12	*	*	*	2	6	*	*	2

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Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-133	Pepeao, dried (Japan)										
	1 cup	30	90	2	*	*		6	4	4	10
	6 whole, 1 inch diameter	10	30	*	*	*		2	2	2	4
01-134	Peppers, green bell, raw										
	1 cup, 1/2 inch strips	105	25	2	8	210	4	2	4	*	2
	whole, 3 1/2 x 3 inch diameter	105	25	2	8	210	4	2	4	*	2
01-135	Pigeon pea, green, shelled, raw										
	1 cup	150	180	15	20	70	40	20	20	4	10
	10 pods, 3 1/2 to 4 inch lengths	25	30	2	4	10	6	4	4	*	2
01-136	Pigeon pea, green, shelled, cooked										
	1 cup	150	190	15	20	130	40	20	15	4	10
	1 pound	454	580	50	60	390	120	60	50	10	35
01-137	Poi, paiai (30% solids)										
	1 cup	240	260	2	*	30	10	4	6	4	20
	1 ounce	28	30	*	*	4	2	*	*	*	2
01-138	Purslane, raw										
	1 cup, 1 inch pieces	44	8	*	15	10	*	2	*	2	4
	5 plants, 5 inch lengths	20	4	*	6	6	*	*	*	2	2
01-139	Purslane, cooked										
	1 cup, 1 inch pieces	115	20	2	50	15	2	4	2	8	4
	1 pound	454	80	10	220	60	8	20	8	35	20
01-140	Rakkyo, scallions, pickled (Japan)										
	3 pieces, 1 1/4 x 1 inch diameter	27	16	*	*	*	*	*	*	*	*
	1 pound	454	270	4	*	*	4	15	6	10	10
01-141	Sesbania, flower, white, raw										
	1 cup, 1 inch pieces, lightly packed	20	6	*	*	20	*	*	*	*	2
	5 flowers, 2 1/4 inch lengths	10	4	*	*	10	*	*	*	*	2
01-142	Sesbania, flower, white, cooked										
	1 cup, 1 inch pieces, lightly packed	105	25	2	*	60	4	2	2	2	4
	1 pound	454	100	8	*	260	15	10	6	10	15

01-143	Shirataki, canned (Japan)										
	1 cup	125	18	*	*	*	*	*	*	8	4
	1 pound	454	60	*	*	*	*	*	*	30	15
01-144	Spinach, Chinese, raw										
	1 cup, 1 inch pieces	28	6	*	15	10	*	2	*	2	2
	5 plants, 5 inch lengths	25	4	*	15	10	*	2	*	2	2
01-145	Spinach, Chinese, cooked										
	1 cup, 1 inch pieces	130	25	4	120	30	2	10	6	40	20
	1 pound	454	100	15	430	100	4	45	20	140	70
01-146	Squash, summer, patty pan, raw										
	1 cup, 1/4 inch slices	110	25	4	4	30	10	8	6	2	2
	whole, 3 1/4 x 2 inch diameter	150	35	4	6	45	10	10	8	2	4
01-147	Squash, summer, patty pan, cooked										
	1 cup, 1/4 inch slices	115	25	2	4	6	6	6	6	2	2
	1 pound	454	100	6	15	20	25	25	20	6	8
01-148	Squash, summer, zucchini, raw										
	1 cup, 1/4 inch slices	115	25	4	10	70	6	6	4	2	4
	whole, 7 x 2 1/8 inch diameter	225	45	6	20	130	15	10	6	2	6
01-149	Squash, summer, zucchini, cooked										
	1 cup, 1/4 inch slices	125	20	2	6	4	4	4	2	2	2
	1 pound	454	70	4	25	15	15	15	10	6	8
01-150	Squash, winter, pumpkin, flowers, raw										
	1 cup, 1/2 inch pieces, lightly packed	33	4	*	25	20	2	2	2	2	2
	10 flowers, 3 x 5/8 inch diameter	15	2	*	10	8	*	*	*	*	*
01-151	Squash, winter, pumpkin, flowers, cooked										
	1 cup, 1/2 inch pieces	130	20	2	210	15	2	2	2	6	6
	1 pound	454	70	8	730	45	6	10	8	25	20
01-152	Squash, winter, pumpkin, fruit, raw										
	1 cup, 1 x 1 x 1/4 inch slices	115	60	2	60	20	8	4	4	2	2
	whole, 4 x 6 1/2 inch diameter	570	300	6	300	100	35	15	20	8	6
01-153	Squash, winter, pumpkin, fruit, cooked										
	1 cup, 1 x 1 x 1/4 inch slices	170	60	2	70	20	8	4	4	2	2
	1 pound	454	160	4	200	50	20	10	10	6	8
01-154	Squash, winter, pumpkin, leafy tips, raw										
	1 cup, 1 1/2 inch pieces	40	10	2	30	8	2	4	2	2	6
	5 leafy tips, 8 inch lengths	40	10	2	30	8	2	4	2	2	6

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-155	Squash, winter, pumpkin, leafy tips, cooked										
	1 cup, 1 1/2 inch pieces	70	14	2	50	2	2	4	2	4	10
	1 pound	454	100	20	330	8	20	30	15	20	80
01-156	Swamp cabbage, raw										
	1 cup, 3 inch lengths, firmly packed	55	12	2	25	45	2	4	2	4	6
	5 shoots, 11 inch lengths	65	14	2	30	60	2	6	2	4	8
01-157	Swamp cabbage, cooked										
	1 cup, 3 inch lengths	100	20	4	60	15	4	6	4	6	8
	1 pound	454	90	15	280	70	15	30	15	25	35
01-158	Sweet potato, baking, raw										
	1 cup, 1/2 inch cubes	125	140	2	220	50	10	4	4	2	4
	whole, 5 x 2 1/4 inch diameter	185	210	2	320	70	15	4	4	4	6
01-159	Sweet potato, baking, cooked										
	whole, 8 1/2 x 2 3/4 inch diameter	400	420	6	850	100	30	10	10	8	10
	1 pound	454	480	6	970	110	35	10	10	10	15
01-160	Sweet potato, boiling, raw										
	1 cup, 1/2 inch cubes	125	140	4	20	30	8	2	2	4	2
	whole, 6 x 2 inch diameter	210	240	6	30	50	15	4	4	6	4
01-161	Sweet potato, boiling, cooked										
	1 cup, 1/2 inch cubes	150	220	2	20		10	4	4	6	4
	whole, 6 x 2 1/2 inch diameter	285	420	4	40		20	8	8	10	6
01-162	Sweet potato, leafy tips, raw										
	1 cup, 1 inch pieces	35	12	2	15	6	4	8	2	2	2
	5 leafy tips, 5 inch lengths	25	10	2	8	4	2	6	2	*	2
01-163	Sweet potato, leafy tips, cooked										
	1 cup, 1 inch pieces	65	20	2	40	2	6	10	4	8	4
	1 pound	454	150	15	290	15	35	70	25	50	35
01-164	Taro, corms, raw										
	1 cup, 1/2 inch cubes	140	150	4	*	10	15	2	4	4	15
	whole, 3 1/4 x 2 inch diameter	140	150	4	*	10	15	2	4	4	15

01-165	Taro, corms, cooked										
	1 cup, 1/2 inch cubes	130	180	2	*	15	10	2	4	2	6
	1 pound	454	640	4	*	50	35	8	15	8	20
01-166	Taro, leaves, raw										
	1 cup, 1 inch pieces	28	10	2	30	15	2	6	2	2	4
	3 leaves, 16 x 11 1/2 inches	50	18	4	50	30	4	10	2	6	6
01-167	Taro, leaves, cooked										
	1 cup, 1 inch pieces	150	50	8	150	80	10	25	8	15	10
	1 pound	454	160	25	470	230	30	80	20	40	30
01-168	Taro, shoots, raw										
	1 cup, 1 inch pieces	87	12	2						2	6
	whole, 15 1/4 x 1 1/8 inch diameter	75	10	2						*	4
01-169	Taro, shoots, cooked										
	1 cup, 1 inch pieces	140	20	2						2	4
	1 pound	454	60	6						6	10
01-170	Taro, chips, fried										
	10 chips, 1/16 x 2 3/4 inch diameter	23	110	*	*	*	*	*	*	2	2
	2 ounces	57	280	2	*	*	2	*	*	2	4
01-171	Taro, Japanese, raw										
	1 cup, 1/2 inch cubes	125	90	4	*	6	4	*	4	2	6
	whole, 3 1/4 x 1 3/4 inch diameter	80	60	2	*	4	2	*	2	2	4
01-172	Taro, Japanese, cooked										
	1 cup, 1/2 inch cubes	135	120	4	*	10	4	2	4	2	4
	1 pound	454	390	15	*	30	15	4	15	4	10
01-173	Tomato										
	whole, 2 1/8 x 3 inch diameter	155	25	2	20	50	6	2	4	*	2
	whole, 2 1/2 x 3 5/8 inch diameter	255	45	4	35	80	8	4	8	2	4
01-174	Umeboshi, plum, salt pickled (Japan)										
	2 whole, 5/8 inch diameter	4	2	*	*	*	*	*	*	*	*
	1 ounce	28	10	*	*	*	*	*	*	2	6
01-175	Waterchestnut, raw										
	1 cup, 1/4 inch slices	125	90	4	*	6	4	8	2	*	15
	4 whole, 1/2 x 1 1/4 inch diameter	52	40	2	*	2	2	4	*	*	6
01-176	Waterchestnut, canned (Taiwan)										
	1 cup, whole	140	70	2	*	4	4	6	2	*	2
	4 whole, 1/2 x 1 1/8 inch diameter	40	20	*	*	2	2	2	*	*	*

Table 1. (Cont.) Food energy and percentage of U.S. Recommended Daily Allowances for eight nutrients provided by specified amounts of vegetable foods (item numbers and common measures correspond to those in Volume 1)

Item no.	Item and common measure	Weight	Food Energy	Protein	Vitamin A	Vitamin C	Thiamin	Riboflavin	Niacin	Calcium	Iron
		Grams	Kcal	<----------Percentage of U.S. RDA---------->							
01-177	Watercress, raw										
	1 cup, 1 1/2 inch lengths	45	6	2	20	45	2	4	2	4	4
	2 plants, 10 inch lengths	16	2	*	6	15	*	2	*	2	2
01-178	Watercress, cooked										
	1 cup, 1 1/2 inch lengths	70	8	2	30	50	2	4	2	4	2
	1 pound	454	50	15	200	320	15	30	10	25	20
01-179	Yam, mountain, raw (Hawaii)										
	1 cup, 1 inch pieces	135	110	2	*	*	6	2	2	2	2
	whole, 8 x 2 1/2 inch diameter	325	270	6	*	*	15	2	6	2	6
01-180	Yam, mountain, cooked (Hawaii)										
	1 cup, 1 inch pieces	145	110	4	*	*	6	*	*	2	4
	1 pound	454	340	10	*	*	20	2	2	4	10
01-181	Yam, mountain, raw (Japan)										
	whole, 25 x 2 1/4 inch diameter	900	520	20	*	35	70	10	25	25	20
01-182	Yam bean root, raw										
	1 cup, 1/2 inch cubes	120	60	2	*	25	6	4	2	2	15
	whole, 5 x 4 inch diameter	715	330	10	*	150	40	30	10	6	80
01-183	Yam bean root, cooked										
	1 cup, 1 inch cubes	120	50	2	*	20	10	4	2	2	2
	1 pound	454	200	8	*	70	45	20	4	8	8

*None or less than 1 percent.

Table 2. Important sources of selected nutrients

PROTEIN

Food	Percentage of U.S. RDA	Amount of food
Beans, soy, green, cooked	35	1 cup
Yam, mountain, raw (Japan)	20	whole
Pigeon pea, green, shelled, cooked	15	1 cup
Cowpeas, seeds, cooked	15	1 cup
Belembe or Tahitian taro, cooked	15	1 cup
Beans, lima, cooked	15	1 cup

VITAMIN A

Food	Percentage of U.S. RDA	Amount of food
Sweet potato, baking, cooked	850	whole
Carrots, cooked	680	1 cup
Belembe or Tahitian taro, cooked	530	1 cup
Carrots, raw	460	1 cup
Squash, winter, pumpkin, flowers, cooked	210	1 cup
Jute, cooked	170	1 cup
Taro, leaves, cooked	150	1 cup
Spinach, Chinese, cooked	120	1 cup
Beets, greens, cooked	120	1 cup
Malabar nightshade, cooked	100	1 cup
Chrysanthemum, garland, cooked	100	1 cup
Cabbage, white mustard, cooked	90	1 cup
Cabbage, green mustard, salt pickled	80	1 cup
Horseradish tree, leafy tips, cooked	80	1 cup
Squash, winter, pumpkin, fruit, cooked	70	1 cup
Swamp cabbage, cooked	60	1 cup

VITAMIN A (Cont.)

Food	Percentage of U.S. RDA	Amount of food
Cabbage, white mustard, bran-salt pickled	60	1 cup
Horseradish tree, leafy tips, raw	50	1 cup
Squash, winter, pumpkin, leafy tips, cooked	50	1 cup
Purslane, cooked	50	1 cup

VITAMIN C

Food	Percentage of U.S. RDA	Amount of food
Horseradish tree, pods, cooked	280	1 cup
Malabar nightshade, cooked	230	1 cup
Peppers, green bell, raw	210	1 cup
Belembe or Tahitian taro, cooked	210	1 cup
Broccoli, raw	190	1 cup
Pigeon pea, green, shelled, cooked	130	1 cup
Broccoli, cooked	110	1 cup
Sweet potato, baking, cooked	100	whole
Lotus root, cooked	90	10 slices
Cabbage, head, cooked	90	1 cup
Cabbage, head, raw	80	1 cup
Lotus root, raw	80	10 slices
Beans, soy, green, cooked	80	1 cup
Taro, leaves, cooked	80	1 cup
Squash, summer, zucchini, raw	70	1 cup
Beans, lima, cooked	70	1 cup
Cabbage, green mustard, cooked	70	1 cup
Bittermelon, fruit, cooked	70	1 cup
Sesbania, flower, white, cooked	60	1 cup

Table 2. (Cont.) Important sources of selected nutrients

VITAMIN C (Cont.)

Food	Percentage of U.S. RDA	Amount of food
Peas, Chinese edible pod, cooked	60	1 cup
Melon, Chinese preserving, cooked	50	1 cup
Tomato	50	whole
Watercress, cooked	50	1 cup
Daikon, raw	50	1 cup

THIAMIN

Food	Percentage of U.S. RDA	Amount of food
Yam, mountain, raw (Japan)	70	whole
Pigeon pea, green, shelled, cooked	40	1 cup
Beans, soy, green, cooked	35	1 cup
Sweet potato, baking, cooked	30	whole
Cowpeas, seeds, cooked	25	1 cup
Beans, lima, cooked	25	1 cup
Corn, cooked	20	1 cup
Daikon, takuan (a)	15	whole

RIBOFLAVIN

Food	Percentage of U.S. RDA	Amount of food
Belembe or Tahitian taro, cooked	40	1 cup
Taro, leaves, cooked	25	1 cup
Pigeon pea, green, shelled, cooked	20	1 cup
Beans, soy, green, cooked	20	1 cup

NIACIN

Food	Percentage of U.S. RDA	Amount of food
Yam, mountain, raw (Japan)	25	whole
Corn, cooked	20	1 cup

CALCIUM

Food	Percentage of U.S. RDA	Amount of food
Spinach, Chinese, cooked	40	1 cup
Belembe or Tahitian taro, cooked	30	1 cup
Horseradish tree, leafy tips, cooked	25	1 cup
Yam, mountain, raw (Japan)	25	whole
Jute, cooked	20	1 cup
Malabar nightshade, cooked	20	1 cup
Daikon, dried (Japan)	20	1 cup
Cabbage, white mustard, bran-salt pickled	20	1 cup

IRON

Food	Percentage of U.S. RDA	Amount of food
Beets, cooked	340	1 cup
Beans, soy, green, cooked	25	1 cup
Belembe or Tahitian taro, cooked	25	1 cup
Beets, greens, cooked	25	1 cup
Cabbage, white mustard, bran-salt pickled	25	1 cup
Chrysanthemum, garland, cooked	20	1 cup
Daikon, greens, salt pickled	20	1 cup
Yam, mountain, raw (Japan)	20	whole
Spinach, Chinese, cooked	20	1 cup
Poi, paiai (30% solids)	20	1 cup
Waterchestnut, raw	15	1 cup
Yam bean root, raw	15	1 cup
Beans, lima, cooked	15	1 cup
Cowpeas, seeds, cooked	15	1 cup
Gourd, white flowered, dried (Japan)	15	1 cup
Malabar nightshade, cooked	15	1 cup
Jute, cooked	15	1 cup

Table 3. Food and Nutrition Board, National Academy of Sciences—National Research Council Recommended Dietary Allowances,[a] Revised 1980

Designed for the maintenance of good nutrition of practically all healthy people in the U.S.A.

	Age	Weight		Height		Protein	Fat-Soluble Vitamins			Water-Soluble Vitamins							Minerals					
							Vitamin A	Vitamin D	Vitamin E	Vitamin C	Thiamin	Riboflavin	Niacin	Vitamin B-6	Folacin	Vitamin B-12	Calcium	Phosphorus	Magnesium	Iron	Zinc	Iodine
	(years)	(kg)	(lb)	(cm)	(in)	(g)	(μg RE)[b]	(μg)[c]	(mg α-TE)	(mg)	(mg)	(mg)	(mg NE)	(mg)	(μg)	(μg)	(mg)	(mg)	(mg)	(mg)	(mg)	(μg)
Infants	0.0–0.5	6	13	60	24	kg × 2.2	420	10	3	35	0.3	0.4	6	0.3	30	0.5	360	240	50	10	3	40
	0.5–1.0	9	20	71	28	kg × 2.0	400	10	4	35	0.5	0.6	8	0.6	45	1.5	540	360	70	15	5	50
Children	1–3	13	29	90	35	23	400	10	5	45	0.7	0.8	9	0.9	100	2.0	800	800	150	15	10	70
	4–6	20	44	112	44	30	500	10	6	45	0.9	1.0	11	1.3	200	2.5	800	800	200	10	10	90
	7–10	28	62	132	52	34	700	10	7	45	1.2	1.4	16	1.6	300	3.0	800	800	250	10	10	120
Males	11–14	45	99	157	62	45	1000	10	8	50	1.4	1.6	18	1.8	400	3.0	1200	1200	350	18	15	150
	15–18	66	145	176	69	56	1000	10	10	60	1.4	1.7	18	2.0	400	3.0	1200	1200	400	18	15	150
	19–22	70	154	177	70	56	1000	7.5	10	60	1.5	1.7	19	2.2	400	3.0	800	800	350	10	15	150
	23–50	70	154	178	70	56	1000	5	10	60	1.4	1.6	18	2.2	400	3.0	800	800	350	10	15	150
	51+	70	154	178	70	56	1000	5	10	60	1.2	1.4	16	2.2	400	3.0	800	800	350	10	15	150
Females	11–14	46	101	157	62	46	800	10	8	50	1.1	1.3	15	1.8	400	3.0	1200	1200	300	18	15	150
	15–18	55	120	163	64	46	800	10	8	60	1.1	1.3	14	2.0	400	3.0	1200	1200	300	18	15	150
	19–22	55	120	163	64	44	800	7.5	8	60	1.1	1.3	14	2.0	400	3.0	800	800	300	18	15	150
	23–50	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	18	15	150
	51+	55	120	163	64	44	800	5	8	60	1.0	1.2	13	2.0	400	3.0	800	800	300	10	15	150
Pregnant						+30	+200	+5	+2	+20	+0.4	+0.3	+2	+0.6	+400	+1.0	+400	+400	+150	*h*	+5	+25
Lactating						+20	+400	+5	+3	+40	+0.5	+0.5	+5	+0.5	+100	+1.0	+400	+400	+150	*h*	+10	+50

Source: Committee on Dietary Allowances, Food and Nutrition Board. 1980. Recommended Dietary Allowances. 9th Ed. National Academy of Sciences. Washington, D.C. (8)

Abbreviations: g = gram, mg = milligram, μg = microgram
RE = retinol equivalent, TE = tocopherol equivalent, NE = niacin equivalent

[a]The allowances are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined.

[b]1 retinol equivalent = 3.33 IU vitamin activity from retinol or 10 IU vitamin activity from β-carotene.

[c]30-60 mg of supplemental iron is recommended.

Table 3. (Cont.) Estimated safe and adequate daily dietary intakes of selected vitamins and minerals [a]

	Age (years)	Vitamins: Vitamin K (μg)	Biotin (μg)	Pantothenic Acid (mg)
Infants	0–0.5	12	35	2
	0.5–1	10–20	50	3
Children	1–3	15–30	65	3
and	4–6	20–40	85	3–4
Adolescents	7–10	30–60	120	4–5
	11+	50–100	100–200	4–7
Adults		70–140	100–200	4–7

	Age (years)	Trace Elements[b]: Copper (mg)	Manganese (mg)	Fluoride (mg)	Chromium (mg)	Selenium (mg)	Molybdenum (mg)
Infants	0–0.5	0.5–0.7	0.5–0.7	0.1–0.5	0.01–0.04	0.01–0.04	0.03–0.06
	0.5–1	0.7–1.0	0.7–1.0	0.2–1.0	0.02–0.06	0.02–0.06	0.04–0.08
Children	1–3	1.0–1.5	1.0–1.5	0.5–1.5	0.02–0.08	0.02–0.08	0.05–0.1
and	4–6	1.5–2.0	1.5–2.0	1.0–2.5	0.03–0.12	0.03–0.12	0.06–0.15
Adolescents	7–10	2.0–2.5	2.0–3.0	1.5–2.5	0.05–0.2	0.05–0.2	0.10–0.3
	11+	2.0–3.0	2.5–5.0	1.5–2.5	0.05–0.2	0.05–0.2	0.15–0.5
Adults		2.0–3.0	2.5–5.0	1.5–4.0	0.05–0.2	0.05–0.2	0.15–0.5

	Age (years)	Electrolytes: Sodium (mg)	Potassium (mg)	Chloride (mg)
Infants	0–0.5	115–350	350–925	275–700
	0.5–1	250–750	425–1275	400–1200
Children	1–3	325–975	550–1650	500–1500
and	4–6	450–1350	775–2325	700–2100
Adolescents	7–10	600–1800	1000–3000	925–2775
	11+	900–2700	1525–4575	1400–4200
Adults		1100–3300	1875–5625	1700–5100

[a] Because there is less information on which to base allowances, these figures are not given in the main table of Recommended Dietary Allowances and are provided here in the form of ranges of recommended intakes.

[b] Since the toxic levels for many trace elements may be only several times usual intakes, the upper levels for the trace elements given in this table should not be habitually exceeded.

Table 3. (Cont.) Recommended energy intake

Category	Age (years)	Energy Needs (with range) (kcal)	
Infants	0.0–0.5	kg × 115	(95–145)
	0.5–1.0	kg × 105	(80–135)
Children	1–3	1300	(900–1800)
	4–6	1700	(1300–2300)
	7–10	2400	(1650–3300)
Males	11–14	2700	(2000–3700)
	15–18	2800	(2100–3900)
	19–22	2900	(2500–3300)
	23–50	2700	(2300–3100)
	51–75	2400	(2000–2800)
	76+	2050	(1650–2450)
Females	11–14	2200	(1500–3000)
	15–18	2100	(1200–3000)
	19–22	2100	(1700–2500)
	23–50	2000	(1600–2400)
	51–75	1800	(1400–2200)
	76+	1600	(1200–2000)
Pregnancy		+300	
Lactation		+500	

The energy allowances for the young adults are for men and women doing light work. The allowances for the two older age groups represent mean energy needs over these age spans, allowing for a 2 percent decrease in basal (resting) metabolic rate per decade and a reduction in activity of 200 kilocalories per day for men and women between 51 and 75 years, 500 kilocalories for men over 75 years, and 400 kilocalories for women over 75 years. The customary range of daily energy output is shown in parentheses for adults and is based on a variation in energy needs of ± 400 kilocalories at any one age, emphasizing the wide range of energy intakes appropriate for any group of people.

Energy allowances for children through age 18 are based on median energy intakes of children of these ages followed in longitudinal growth studies. The values in parentheses are 10th and 90th percentiles of energy intake, to indicate the range of energy consumption among children of these ages.

Table 4. U.S. Recommended Daily Allowances for four population groups

Nutrients	Infants birth to 12 months	Children under 4 years of age	Adults and children 4 or more years of age	Pregnant or lactating women
Nutrients that must appear on the label*				
Protein, PER ≥ casein **, g	20	45	45	45
Protein, PER < casein, g	28	65	65	65
Vitamin A, IU	1,500	2,500	5,000	8,000
Vitamin A, µg RE***	400-420	500	1,000	(1,600)
Vitamin C (ascorbic acid), mg	35	40	60	60
Thiamin (Vitamin B_1), mg	0.5	0.7	1.5	1.7
Riboflavin (Vitamin B_2), mg	0.6	0.8	1.7	2.0
Niacin, mg	8	9	20	20
Calcium, g	0.6	0.8	1.0	1.3
Iron, mg	15	10	18	18
Nutrients that may appear on the label				
Vitamin D, IU	400	400	400	400
Vitamin E, IU	5	10	30	30
Vitamin B_6, mg	0.4	0.7	2.0	2.5
Folic acid (folacin), mg	0.1	0.2	0.4	0.8
Vitamin B_{12}, µg	2	3	6	8
Phosphorus, g	0.5	0.8	1.0	1.3
Iodine, µg	45	70	150	150
Magnesium, mg	70	200	400	450
Zinc, mg	5	8	15	15
Copper, mg	0.6	1	2	2
Biotin, mg	0.05	0.15	0.3	0.3
Pantothenic acid, mg	3	5	10	10

Source: Institute of Food Technologists. 1974. Food Technology 28(7):1-6 (special insert). (2)

Abbreviations: g = gram, mg = milligram, µg = microgram, IU = International Unit, RE = retinol equivalent

*The nutritional labeling laws are voluntary unless the processor adds nutrients or makes nutritional claims. Whenever used, these nutrients must be declared on the label.

**PER or Protein Efficiency Ratio is an indicator of protein quality. If the PER of the protein is equal to or greater than that of casein, a high-quality milk protein, the lower of the two protein values is recommended. If the protein quality is lower than that of casein, the higher of the two is recommended.

***Vitamin A was expressed as µRE as well as IU in the Recommended Dietary Allowances, 1973 revised, except for the value in parentheses, computed by the author as one-fifth of the U.S. RDA stated as IU.

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