

NUTRIENT DATA BANKS - WHAT THEY ARE AND WHAT THEY CONTAIN

Betty Perloff

A nutrient data bank is a repository for data on the nutrient composition of foods. The U.S. Department of Agriculture's Nutrient Data Bank includes a computer-based system to store and summarize the nutrient data. Its purpose is to facilitate the production of nutrient data bases, both published and computerized, which serve as reference materials on food composition.

Responsibility for the USDA Nutrient Data Bank lies within the Consumer Nutrition Center (CNC) in Hyattsville, Maryland. At the Center, the Nutrient Data Bank is operated by the Nutrient Data Research Group (NDRG), which provides the subject area knowledge, and the Survey Statistics Groups, which provides the computer system and statistical support. The NDRG has staff specialists for different food groups, and also for amino acids and fatty acids.

Part of a food specialist's responsibility is to seek out sources of nutrient composition data. The major sources of data are the food industry, scientific literature, USDA laboratories, and research contracts. Of these major sources of data, research contracts is the only source for which the NDRG can completely control the experimental design or the research methodology. However, funds available for contract research are limited and are used primarily to supplement the data received from other sources, or to study effects of different processing or production variables on the nutrient content of foods.

Because there is little or no control over the production of most of the data collected, data are carefully screened before being accepted for inclusion in the data bank. Several factors considered during the evaluation are: date of analyses, sample selection and handling procedures, sample representativeness of the food supply, analysis methodology, statistical validity and data reliability.

Data passing the evaluation are coded and computerized. Codes for all characteristics of a sample which might affect its nutrient composition are included.

Collection, evaluation, and computerization of data continue until the data base for a food group is large enough to permit development of mean values for the nutrients in various foods. At this point, the data base is analyzed to determine which characteristics of each food item affect the nutrient composition.

After the data base analysis is completed, a data base of mean values, Data Base II, is created to combine data which exist for identical samples. From Base II, data for selected items are combined through a weighting procedure to create weighted means, or overall representative values, Data Base III. For example, different varieties of a food may be weighted according to their relative commercial importance and the nutrient values for each variety combined according to their respective weights.

Several types of user outputs are prepared from the data in USDA's Nutrient Data Bank. These include:

Agriculture Handbook 8. When Base III is completed for a food group, a section of the revision to Handbook 8 is produced.

Provisional tables are released where sufficient data are in the data bank for only some of the foods within a food group. A provisional table on bakery foods and related items was released in May and copies are available from the Consumer Nutrition Center.

Consumer publications. The Sodium Content of Your Food, is the most recent consumer publication to be released. This bulletin contains up-to-date sodium data for 788 food items presented on the basis of common household measures. It may be ordered from the Government Printing Office for \$2.00 a copy.

Computerized data bases. Available USDA nutrient data bases are listed below. These data bases are distributed by the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Data Set 72-1
(Corresponds to Home and Garden Bulletin 72.)

Data Set 456-3, Release 2
(Corresponds to Agriculture Handbook 8, 1963 edition. Updates to iron and B vitamins in flour and bakery products were made in 1977; updates to the foods from the first 5 sections of the revised Agriculture Handbook 8 were made in 1980.)

Data Set 456
(Contains the same data as 456-3 after conversion to weights of household measures.)

Data Set 456-2
(Contains the weights of household measures which appear in Handbook 456, along with a factor representing the percentage of that weight which is the edible portion.)

Revised Handbook 8
(Corresponds to the first five sections of revised Agriculture Handbook 8.)

USDA Nutrient Data Base for Standard References, Release 1
(Includes all data from the first five sections of revised Agriculture Handbook 8 and also data from Data Set 456-3, Release 2. This data base includes the latest and most complete data which are available on tape for each food group.)

USDA Nutrient Data Base for Individual Intake Surveys, Release 1
(Developed to analyze data from the 1977-78 USDA Nationwide Food Consumption Survey of individuals.)

Three things are needed before a nutrient data base can be used.

1. Understanding of possibilities and limitations. A nutrient data base can be used in a number of different applications but it also has limitations. A user needs to fully understand his goals and how a nutrient data base can help accomplish them before deciding to purchase a data base or before preparing computer software to use with a data base.

2. Computer. The type of computer is usually limited to that which is available to the user. Before purchasing a data base, one should make certain that it is compatible with the computer he will use.

3. Program. The program, or computer software, is the set of instructions which directs the computer to make the necessary calculations to perform the desired task. Programs are not included with the USDA nutrient data bases.

Other USDA materials may be of interest to nutrient data base users. These include:

Agriculture Handbook 456. Nutritive Value of American Foods in Common Units presents nutrient data on the basis of common household measures and contains average weights in grams for the various measures.

Agriculture Handbook 102. Food Yields Summarized by Different Stages of Preparation presents weight losses or gains in foods after preparation.

ARS 62-13. Procedures for Calculating Nutritive Values of Home Prepared Foods explains the calculation of nutritive values for home-prepared foods listed in Agriculture Handbook 8, 1963 edition.

Several computerized data banks other than USDA's are in operation. Most of these systems make use of a USDA nutrient data base within a dietary analysis program, although the data base may have been modified to suit the particular installation's needs. The data base may be supplemented with data from other sources to expand a system's coverage of foods or nutrients, or it may be shortened by extracting food items which are seldom needed.

A number of options are available to potential nutrient data base users. These include purchasing a USDA nutrient data base and preparing the software to use with it; purchasing a nutrient data base from another source, either with or without software; or contracting to use an operational nutrient data bank system. Developing one's own nutrient data bank system includes the responsibility to verify the accuracy of all computer programs within the system and all future modifications to the data base. Using an operational system includes the responsibility to evaluate the system for its overall adequacy.

Availability of Data
by Betty P. Perloff

Agriculture Handbook No. 8, Composition of Foods...Raw, Processed, Prepared, is the U.S. Department of Agriculture's standard reference on food composition and was last completely revised in 1963. A current revision, progressing by food group, is underway; as a group is completed, the data are released as a section of the handbook. The following six sections have been released to date:

- | | |
|----------------------------|---------------------------------|
| 8-1 Dairy and Egg Products | 8-4 Fats and Oils |
| 8-2 Spices and Herbs | 8-5 Poultry Products |
| 8-3 Baby Foods | 8-6 Soups, Sauces and Gravies |
| | 8-7 Sausages and Luncheon Meats |

Agriculture Handbook No. 456, published in 1975, contains basically the same data that were published in the last complete revision of Handbook No. 8, except that data have been converted to common units. Home and Garden Bulletin No. 72, a small bulletin with data presented in common household measures, was published in 1977 as a consumer service of USDA. Copies of the above publications are available through the Government Printing Office.

Several USDA computerized nutrient data bases are available to the public through the National Technical Information Service. These data bases are described below.

Data Set 456-3, Release 2, contains food items from the 1963 edition of Handbook No. 8 and Handbook No. 456 with data presented on the 100 gram edible portion basis. Data were revised in 1977 to reflect current enrichment practices in the baking industry, and in 1980 the values were updated with data from the first five sections of the revised Handbook No. 8.

Data Set 456-2 contains weights of household measures for most of the food items on Data Set 456-3.

Data Set 456, Release 2, contains the data from 456-3 after conversion to weights of household measures.

Data Set 72-1 contains food items from Home and Garden Bulletin No. 72. Data are presented on the household measures basis.

USDA Nutrient Data Base for Standard Reference, Release 1, consists of the data from the first five sections of revised Handbook No. 8 supplemented by the data from 456-3. The format corresponds to the revised handbook, and data from new sections will be added as they are published. Updated versions of this data base will be released periodically and will be identified by release number and date.

USDA Nutrient Data Base for Individual Intake Surveys, Release 1, is the data base developed to analyze data from the 1977-78 USDA Nationwide Food Consumption Survey of Individuals.

Nutrients included on each file are summarized in Table 1. For details on how to obtain the data bases, call Mr. Bruce Gray (301) 436-8507.

USDA NUTRIENT DATA BASES

Data Base	456-3	456-2	456	72-1	Standard Reference		Individual Survey
Number of Items	3,147	6,943	6,943	730	>3,500		>4,500
Units of Measure	100 gm		Household Measures	Household Measures	Data From 456	Data from Rev. 8	100 gm
					100 gm	100 gm and House Meas.	
Weights of							
Household Measures		x		x			
Proximate:							
Water.....	x		x	x	x	x	
Energy.....	x		x	x	x	x	x
Protein.....	x		x	x	x	x	x
Total Lipid.....	x		x	x	x	x	x
Carbohydrate.....	x		x	x	x	x	x
Crude Fiber.....	x		x		x	x	
Ash.....	x		x		x	x	
Minerals:							
Calcium.....	x		x	x	x	x	x
Iron.....	x		x	x	x	x	x
Magnesium.....						x	x
Phosphorus.....	x		x	x	x	x	x
Potassium.....	x		x	x	x	x	
Sodium.....	x		x		x	x	
Zinc.....						x	
Vitamins:							
Ascorbic Acid.....	x		x	x	x	x	x
Thiamin.....	x		x	x	x	x	x
Riboflavin.....	x		x	x	x	x	x
Niacin.....	x		x	x	x	x	x
Pantothenic Acid..						x	
Vitamin B-6.....						x	x
Folacin.....						x	
Vitamin B-12.....						x	x
Vitamin A.....	x		x	x	x	x	x
Lipids:							
Total Sat. F.A. ..	x		x	x	x	x	
Total Mono. F.A. .						x	
Total Poly. F.A. .						x	
Oleic Acid.....	x		x	x	x	x	
Linoleic Acid.....	x		x	x	x	x	
Other Fatty Acids.						x	
Cholesterol.....	x		x		x	x	
Amino Acids.....						x	

Table 1

Nutritive Value Data Sets Released By CNC
In A Machine Readable Form

Data Set 456

Accession Number: PB81 146649

This file contains food composition data as published in tables 1 and 2 of Agricultural Handbook No. 456 along with three other composition values (fiber, ash, and cholesterol). Where values were not available for publication in Handbook No. 456, imputed values have been included on the tape. This file also has updated values that have been made available since the handbook was published. The data are provided for the same household units as given in the publication. Food item numbers are assigned sequentially with the food descriptions in alphabetical order. The first four digits and the letter code are identical to those used in the publication for the same food item but a fifth digit has been appended to allow for a finer distinction of the food than was used originally. Where no finer definition is needed, the fifth digit is zero. As an example, item 45 in the publication (cooked artichokes) has now been further specified as 45-1 (cooked artichokes without salt added) and 45-2 (cooked artichokes with salt added). Food descriptions are not included in the file and users will need a copy of the published handbook to determine the food and household measure.

Data Set 456-2

Accession Number: PB81 146003

This is a companion file to F4563 and contains corresponding quantities for the unit of measure used in Handbook 456 for each food item and the fraction of the total weight that represents the edible portion. By taking the product of the nutritive values per 100 grams contained in F4563 and the corresponding quantities contained in this file comparable to the data contained in tables 1 and 2 of Handbook 456 or one can use the data in this file to have weights of foods in various household units.

Data Set 456-3

Accession Number: PB81 146011

This file contains food composition data for foods whose quantities are expressed in 100 grams edible portion. Twenty-one composition values are included along with a 20 character description of the food item. The composition values are: percent water, food energy, protein, fat, carbohydrates, fiber, ash, calcium, phosphorus, iron, sodium, potassium, vitamin A, thiamin, riboflavin, niacin, ascorbic acid, saturated fatty acid, oleic acid, linoleic acid, and cholesterol. These values are given for 3,147 food items. Except for 105 foods which have item numbers from 2501-2541, 2601-2657, and 2701-2707 food item numbers are assigned sequentially with the food descriptions in alphabetical order. An accompanying booklet gives a full description of the foods.

This file contains data on the updated data sets of Agriculture Handbook No. 8, "Composition of Foods....raw, processed, prepared." The handbook is being revised in separate sections by food groups. To facilitate future updating, the revision is prepared in looseleaf form. Each page contains the nutrient profile for a single food item. Data are presented on the 100-gram basis, in two common measures, and in the edible portion of 1 pound as purchased. Values are provided for refuse, energy, proximate composition (water, protein, lipids, carbohydrate, and ash), seven mineral elements (calcium, iron, magnesium, phosphorus, potassium, sodium, and zinc with the addition of copper in 8-3, 8-5, and 8-6 and manganese in 8-5 and 8-6), nine vitamins (ascorbic acid, thiamin, riboflavin, niacin, pantothenic acid, vitamin B₆, folacin, vitamin B₁₂, and vitamin A, with the addition of total and alphatocopherol in 8-4), individual fatty acids, cholesterol, total phytosterols, and 18 amino acids. In order to provide users of the table with estimates of the variability and reliability of the nutrient data, the standard error of the values on the 100-gram food basis and the number of samples on which the 100-gram are based have been incorporated into the table. Much of the data used in revising Handbook No. 8 was supplied through the cooperation of private industry, Government agencies, and academic institutions. The information presented will be especially useful to research groups who conduct dietary surveys and nutritional status studies, as well as to professional and technical personnel, including those in food industries and health-related professions, who plan or evaluate diets and food supplies.

USDA Nutrient Data Base for Standard ReferenceAccession Number: PB81 178055

This file is made up of the most complete, most recent data base of food composition data. It's initial data set was the updated version of data set 456-3 formatted to allow for the insertion of additional nutrients. As updates are made to Agricultural Handbook 8, this file is revised to include the changes made to values originally contained in the file as well as the additional composition values and additional foods. To distinguish between the food item numbers used in Agricultural Handbook 8 and the numbers used in the updated Agricultural Handbook 8 codes, all items from the original Handbook 8 have 70000 added to their codes. Our accompanying booklet gives a full description of the foods.

Data Set 72-1Accession Number: PB81 146748

This file contains food composition data as published in Table 2 of Home and Garden Bulletin No. 72, Nutritive Value of Foods revised 1977. Values for food items are described in terms of household measures for the food and are provided for the weight of the household measure, percent water, food energy, protein, fat, saturated fatty acid, oleic acid, linoleic acid, carbohydrate, calcium, phosphorus, iron, potassium, vitamin A value, thiamin, riboflavin, niacin, and ascorbic acid. There are 730 food items included. A three-digit food code has been sequentially assigned to each food item after the items have been placed into food groups. A 24 character description of the food exist on each of the 87 character records.

Data Set 102-1

Accession Number: PB81 146730

This file contains data on food yields and losses in food preparation as published in Table 1 of Food Yields...summarized by different stages of preparation. Agriculture Handbook No. 102, revised September 1975. The revised data and additional information in this publication serves as the principal basis for values on refuse in the revisions of Agriculture Handbook No. 8, Composition of Foods...raw, processed, prepared, revised 1963, \$3.60. (For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402). Yields after preparation as well as percent change (by weights) are provided for up to nine variations in preparation for each food item. Each item is identified by an item number which relates directly to the item described in AH 102. No descriptions are contained in this file. This file contains data for 2,894 food items.

Data Set 382-1

Accession Number: PB80 190192

This file contains composition values as published in Table 1 of Agriculture Information Bulletin No. 382, Nutrition Labeling...tools for its use, issued 1975, with these exceptions: A few foods were added and some were deleted and values for 3 nutrients for all foods have been added. (Agriculture Information Bulletin No. 382 is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402). Twelve composition values for common household measures (expressed in grams) of 885 foods are included. Composition values are for food energy expressed in calories and for protein, carbohydrate and fat expressed in grams (rounded to the nearest whole gram). Also, percentages of the U.S. RDA for protein, vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium and iron are given to the nearest 2 percent (2, 4, 6, etc.) up to 10 percent; to the nearest 5 percent (10, 15, 20, etc.) up to 50 percent; and to the nearest 10 percent (50, 60, 70, etc.) above 50 percent. The data set contains a five-digit food code and an abbreviated description for each food item. An accompanying booklet contains a complete description and the common household measure for each food.

Data Set 382-2

Accession Number: PB80 190192

This file is a companion file to 382-1 with the following changes in food composition values; food energy is rounded to the nearest whole calorie and protein, carbohydrate and fat are rounded to the nearest tenth of a gram. Values for protein, vitamin A, vitamin C, thiamin, riboflavin, niacin, calcium and iron are rounded to the nearest hundredth of a percentage of the U.S. RDA. The quantity of each item, expressed in grams, the five-digit code and the abbreviated description are identical to those in Data Set 382-1. An accompanying booklet contains a complete description and the common household measure for each food.

Data Set 382-3

Accession Number: PB80 190192

This file is a companion file to 382-1 with food values expressed as follows: food energy as calories; protein, carbohydrate and fat in grams; vitamin A in International Units; vitamin C, thiamin, riboflavin, niacin, calcium and iron in milligrams. Quantities of each item, expressed in grams, the five-digit code and abbreviated descriptions are identical to those in Data Set 382-1. An accompanying booklet contains a complete description and the common household measure for each food.

USDA Nutrient Data Base for Individual Intake Surveys Accession Number: PB80 197403

A nutrient data base of approximately 4,500 food items developed for the USDA Nationwide Food Consumption Survey 1977-78. Only items reported in the survey are included. Foods reported exclusively in the Puerto Rican phase of the survey are not included but are available on a supplemental tape. Food composition values are for 100-gram edible portions of food, as eaten, for energy (kilocalories), protein (g), fat (g), carbohydrate (g), calcium (mg), iron (mg), magnesium (mg), phosphorus (mg), vitamin A value (I.U.), thiamin (mg), riboflavin (mg), niacin (mg), vitamin B₆ (mg), vitamin B₁₂ (mcg), and vitamin C (mg). For milk and milk products, a calcium conversion factor is provided which converts each product to an equivalent weight of whole milk based on its calcium content relative to whole milk. Food items reported in the survey but not specifically described are assigned nutrient values for a commonly eaten form of the food or for a composite of several forms. Food values for mixtures or recipes are based on popular recipes, commercial products, or composites of several products. A food code manual is provided which includes, for each item, a unique seven-digit food code, description of food, and commonly reported household measures with their weights in grams. The first digit of the code denotes one of nine major food categories. A tenth category of miscellaneous items used in small amounts, assigned a first digit of zero, does not appear on the tape except for soy sauce.

USDA Nutrient Data Base for Household Intake Surveys Accession Number: PB81

This file contains nutritive values for 3,836 food items reported used by households in the USDA Nationwide Food Consumption Survey 1977-78. Food composition values are for 1 pound of food, as purchased for food energy (calories), protein (g), fat (g), carbohydrate (g), calcium (mg), iron (mg), magnesium (mg), phosphorus (mg), vitamin A (I.V.), thiamin (mg), riboflavin (mg), niacin (mg), vitamin B₆ (mg), vitamin B₁₂ (mcg), and ascorbic acid (mg) with cooking losses deducted for the following seven vitamins: vitamin A, thiamin, riboflavin, niacin, vitamin B₆, vitamin B₁₂, and ascorbic acid. Also provided are conversion factors which convert appropriate food items to an equivalent weight based on calcium content or equivalents based on flour, sugar, fresh potatoes, eggs in shell, single strength juice, dry legumes, or shelled nuts. Most of the data on nutrients were derived from Table 2, U.S. Department of Agriculture Handbook No. 8 and its revised supplements. Some values from these sources were updated based on results of new food composition research, on information from industry about new food products, and in accordance with new regulations on the enrichment of food. Foods reported exclusively in the Puerto Rican phase of the survey are not included in this data file but are available on a supplemental tape. A food code manual is provided with this data file which includes a unique 15-digit food code for each food item reported in the survey, a description of the food, and the commonly reported household measures with their weights in pounds for that food.

DATA SETS ON FOOD CONSUMPTION SURVEYS
AVAILABLE AT NTIS

<u>Data Set Name</u>	<u>Accession Number</u>	<u>Cost</u>
Spring Basic Household Consumption Survey, 1977-78	PB80 190176	\$175
Summer Basic Household Consumption Survey, 1977-78	PB80 197411	175
Fall Basic Household Consumption Survey, 1977-78	PB80 200215	175
Winter Basic Household Consumption Survey, 1977-78	PB80 202542	175
Low Income Household Consumption Survey, 1977-78	PB81 114399	175
Spring Individual Food Intake Survey, 1977-78	PB80 190218	325
Summer Individual Food Intake Survey, 1977-78	PB80 197429	250
Fall Individual Food Intake Survey, 1977-78	PB80 200223	325
Winter Individual Food Consumption Survey, 1977-78	PB81 118853	325
Low Income Individual Consumption Survey, 1977-78	PB81 118838	400
Spring Individual Food Intake, 1965	PB80 195415	175
Nutritive Values Used in Individual Intake Survey, 1977-78	PB80 197403	100
Data File of Agriculture Information, Bulletin No. 382	PB80 190192	100
Weight of Units of Foods as Used in Agriculture Handbook No. 456 (Data Set 456-2)	PB81 146003	100
Agriculture Handbook No. 456 (Data Set 456-3)	PB81 146011	100
Agriculture Handbook No. 456 (Data Set 456)	PB81 146649	100
Yields and Losses or Gains in Preparation of Foods	PB81 146730	100
Nutritive Value Data as Published in Home and Garden Bulletin No. 72	PB81 146748	100
Hawaii Household Food Consumption Survey, 1977-78	PB81 146755	100

<u>Data Set Name</u>	<u>Accession Number</u>	<u>Cost</u>
Alaska Household Food Consumption Survey, 1977-78	PB81 146763	\$100
Hawaii Individual Food Consumption Survey, 1977-78	PB81 146771	100
Composition of Foods Handbook Number 8-1 through 8-5	PB81 158594	100
Alaska Individual Food Consumption Survey, 1977-78	PB81 162539	100
Nutrient Data Base for Standard Reference	PB81 178055	100

How To Order From NTIS

2

The data made available to the public from the Consumer Nutrition Center is distributed through the National Technical Information Service (NTIS) whose address is: U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. To reduce the probability of getting the wrong data set, requests should make reference to Accession Number whenever possible.

How To Pay

The deposit account, which carries no service charge and enables customers to order rapidly by telephone or teletype, is the most convenient to use. Thus, the fastest service is provided to customers who charge to their deposit accounts.

American Express, VISA, and Master Card credit card transactions are accepted as well as check and money order payments.

As an occasional convenience to customers who have established credit, a Ship and Bill Service is provided at a \$5 surcharge on each total order for documents, regardless of documents ordered.

How To Open a Deposit Account

Use the order form on page 2 and send at least \$25 to NTIS Deposit Account, 5265 Port Royal Road, Springfield, VA 22161. Thereafter, keep at least \$25 on deposit or enough to cover two months' charges. You may pre-deposit any amount. Some active customers keep several thousand dollars in their accounts to ensure the fastest possible service for large orders since orders will not be processed for overdrawn accounts.

When your account is opened, you will receive preaddressed order forms to speed your orders and simplify accounting and the recording of tax deductible expenses.

Special NTIS Credit for Local Governments and State Universities
No advance funds are necessary for local governments and state universities to obtain credit and immediate shipments of NTIS products and services.

Upon receipt of the special credit account application, NTIS will mail a supply of preaddressed order forms bearing a special account number. These forms also will show a "Ship To" address if one is required. Subsequently, orders from these sources will be processed directly into the NTIS automated system, eliminating several steps in normal order handling and minimizing errors.

Monthly statements will show all charges, credits, deposits, and the balance remaining in the account. The charges may easily be verified from the Record of Shipment Cards included with every shipment. The local government's or the library's signed payment voucher (which we will keep on hand) will be mailed with each statement. Payment is due upon its receipt.

Officials need not be concerned with special funding, delays, and price changes.

The charge for this service is 10 cents a line item.

Ordering
RUSH HANDLING is for customers who must have immediate delivery.

RUSH HANDLING guarantees that a particular order will be filled within 8 working hours of its receipt. These orders receive immediate validation, verification of availability, and individual hand processing through inventory control at the warehouse, priority mailing.

RUSH HANDLING orders for mailing rather than pickup are accepted only from customers having NTIS deposit accounts or American Express Cards. Further, these orders may be placed only by telephone, telegram, telex, telecopier, or customers in person; not by mail.

RUSH HANDLING for delivery to customers by priority mail costs \$10, for each item ordered, plus the cost of the document.

RUSH HANDLING for pickup in Springfield or Washington, D.C., costs \$6 for each item ordered, plus the cost of the document.

PREMIUM SERVICE is a 24-hour toll-free telephone ordering procedure ensuring priority mail delivery to NTIS deposit account customers within 5 to 12 days.

All deposit account customers will receive PREMIUM SERVICE identification numbers with which they may place telephone orders at any time. PREMIUM SERVICE benefits are toll-free calls with 24-hour availability, no busy signals, simplified ordering techniques (details with the identification number), postage savings, and priority delivery. PREMIUM SERVICE costs \$1.50 for each item ordered, plus the cost of the document.

REGULAR SERVICE will continue to operate with improved processing and stocking methods, optional priority mail delivery (slight additional cost), and optional pickup in Springfield or Washington, D.C. Current parcel post deliveries using the U.S. Postal Service are completed within nine to thirty days.

The order processing and sales desk number is 703-487-4650. Call if you have any questions.

NTIS
Deposit Account
Application
Initial Deposit
Date Mailed
Date Acceptance Received

Mail To:
NTIS
U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161
DEPOSIT ACCOUNT SERVICE APPLICATION

Please open a deposit account in my name

Here is my check for \$_____ payable to NTIS
(\$25 minimum initial deposit).

Name _____
Title _____
Organization _____
Street _____
City _____ State _____ Zip _____
Date _____ Signature _____

Keep This
Brochure for
Your Records

Nutrient Data Bases

Number of Items	456-3	456-2	456	72-1	Standard Reference		Individual Survey
	3,147	6,943	6,943	730	>3,500		>4,500
Units of Measure	100 gm		Household Measures	Household Measures	Data from 456	Data from Rev. 8	100 gm
					100 gm	100 gm and House. Meas.	
Weights of Household Measures		X		X			
Proximate: Water	X		X	X	X	X	
Energy	X		X	X	X	X	X
Protein	X		X	X	X	X	X
Total lipid	X		X	X	X	X	X
Carbohydrate	X		X	X	X	X	X
Crude fiber	X		X		X	X	
Ash	X		X		X	X	
Minerals: Calcium	X		X	X	X	X	X
Iron	X		X	X	X	X	X
Magnesium						X	X
Phosphorus	X		X	X	X	X	X
Potassium	X		X	X	X	X	
Sodium	X		X		X	X	
Zinc						X	
Vitamins: Ascorbic acid	X		X	X	X	X	X
Thiamin	X		X	X	X	X	X
Riboflavin	X		X	X	X	X	X
Niacin	X		X	X	X	X	X
Pantothenic acid						X	
Vitamin B-6						X	X
Folacin						X	
Vitamin B-12						X	X
Vitamin A	X		X	X	X	X	X
Lipids: Total Sat. F.A.	X		X	X	X	X	
Total Monounsat. F.A.						X	
Total Polyunsat. F.A.						X	
Oleic acid	X		X	X	X	X	
Linoleic acid	X		X	X	X	X	
Other fatty acids						X	
Cholesterol	X		X		X	X	
Amino acids						X	