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12. INTAKE RATES FOR VARIOUS HOME PRODUCED FOOD ITEMS

12.1. BACKGROUND

Ingestion of contaminated foods is a potential pathway of exposure to toxic chemicals. Consumers of home produced food products may be of particular concern because exposure resulting from local site contamination may be higher for this subpopulation. According to a survey by the National Gardening Association (1987), a total of 34 million (or 38 percent) U.S. households participated in vegetable gardening in 1986. Table 12-1 contains demographic data on vegetable gardening in 1986 by region/section, community size, and household size.

Table 12-1. 1986 Vegetable Gardening by Demographic Factors

Demographic Factor	Percentage of total households that have gardens (%)	Number of households (million)
Total	38	34
Region/section		
East	33	7.3
New England	37	1.9
Mid-Atlantic	32	5.4
Midwest	50	11.0
East Central	50	6.6
West Central	50	4.5
South	33	9.0
Deep South	44	3.1
Rest of South	29	5.9
West	37	6.2
Rocky Mountain	53	2.3
Pacific	32	4.2
Size of community		
City	26	6.2
Suburb	33	10.2
Small town	32	3.4
Rural	61	14.0
Household size		
Single, separated, divorced, widowed	54	8.5
Married, no children	45	11.9
Married, with children	44	13.2

Source: National Gardening Association, 1987.

Table 12-2 contains information on the types of vegetables grown by home gardeners in 1986. Tomatoes, peppers, onions, cucumbers, lettuce, beans, carrots, and corn are among the vegetables grown by the largest percentage of gardeners. Home-produced foods can become contaminated in a variety of ways. Ambient pollutants in the air may be deposited on plants, adsorbed onto or absorbed by the plants, or dissolved in rainfall or irrigation waters that contact the plants. Pollutants may also be adsorbed onto plants roots from contaminated soil and water. Finally, the addition of pesticides, soil additives, and fertilizers to crops or gardens may result in contamination of food products. Meat and dairy products can become contaminated if animals consume contaminated soil, water, or feed crops. Intake rates for home-produced food products are needed to

Table 12-2. Percentage of Gardening Households Growing Different Vegetables in 1986

Vegetable	Percent
Artichokes	0.8
Asparagus	8.2
Beans	43.4
Beets	20.6
Broccoli	19.6
Brussel sprouts	5.7
Cabbage	29.6
Carrots	34.9
Cauliflower	14.0
Celery	5.4
Chard	3.5
Corn	34.4
Cucumbers	49.9
Dried peas	2.5
Dry beans	8.9
Eggplant	13.0
Herbs	9.8
Kale	3.1
Kohlrabi	3.0
Leeks	1.2
Lettuce	41.7
Melons	21.9
Okra	13.6
Onions	50.3
Oriental vegetables	2.1
Parsnips	2.2
Peanuts	1.9
Peas	29.0
Peppers	57.7
Potatoes	25.5
Pumpkins	10.2
Radishes	30.7
Rhubarb	12.2
Spinach	10.2
Summer squash	25.7
Sunflowers	8.2
Sweet potatoes	5.7
Tomato	85.4
Turnips	10.7
Winter squash	11.1

Source: National Gardening Association, 1987.

assess exposure to local contaminants present in homegrown or home caught foods. Recently, EPA analyzed data from the U.S. Department of Agriculture's (USDA) Nationwide Food Consumption Survey (NFCS) to generate distributions of intake rates for home-produced foods. The methods used and the results of these analyses are presented below.

12.2. METHODS

Nationwide Food Consumption Survey (NFCS) data were used to generate intake rates for home-produced foods. USDA conducts the NFCS every 10 years to analyze the food consumption behavior and dietary status of Americans (USDA, 1992). The most recent NFCS was conducted in 1987-88. The survey used a statistical sampling technique designed to ensure that all seasons, geographic regions of the 48 conterminous states in the U.S., and socioeconomic and demographic groups were represented (USDA, 1994). There were two components of the NFCS. The household component collected information over a seven-day period on the socioeconomic and demographic characteristics of households, and the types, amount, value, and sources of foods consumed by the household (USDA, 1994). The individual intake component collected information on food intakes of individuals within each household over a three-day period (USDA, 1993). The sample size for the 1987-88 survey was approximately 4,300 households (over 10,000 individuals). This is a decrease over the previous survey conducted in 1977-78 which sampled approximately 15,000 households (over 36,000 individuals) (USDA, 1994). The sample size was lower in the 1987-88 survey as a result of budgetary constraints and low response rate (i.e., 38 percent for the household survey and 31 percent for the individual survey) (USDA, 1993). However, NFCS data from 1987-88 were used to generate homegrown intake rates because they were the most recent data available and were believed to be more reflective of current eating patterns among the U.S. population.

The USDA data were adjusted by applying the sample weights calculated by USDA to the data set prior to analysis. The USDA sample weights were designed to "adjust for survey non-response and other vagaries of the sample selection process" (USDA, 1987-88). Also, the USDA weights are calculated "so that the weighted sample total equals the known population total, in thousands, for several characteristics thought to be correlated with eating behavior" (USDA, 1987-88).

For the purposes of this study, home-produced foods were defined as homegrown fruits and vegetables, meat and dairy products derived from consumer-raised livestock or game meat, and home caught fish. The food items/groups selected for analysis included major food groups (i.e., total fruits, total vegetables, total meats, total dairy, total fish and shellfish), individual food items for which >30 households reported eating the home-produced form of the item, fruits and vegetables categorized as exposed, protected, and roots, and various USDA fruit and vegetable subcategories (i.e., dark green vegetables, citrus fruits, etc.). Food items/groups were identified in the NFCS data base according to NFCS-defined food codes. Appendix 12A presents the codes used to determine the various food groups.

Although the individual intake component of the NFCS gives the best measure of the amount of each food item eaten by each individual in the household, it could not be used directly to measure consumption of home produced food because the individual component does not identify the source of the food item (i.e., as home produced or not). Therefore, an analytical method which incorporated data from both the household and individual survey components was developed to estimate individual home produced food intake. The USDA household data were used to determine (1) the amount of each home produced food item used during a week by household members and (2) the number of meals eaten in the household by each household member during a week. Note that the household survey reports the total amount of each food item used in the household (whether by guests or household members); the amount used by household members was derived by multiplying the total amount used in the household by the proportion of all meals served in the household (during the survey week) that were consumed by household members.

The individual survey data was used to generate average sex- and age-specific serving sizes for each food item. The age categories used in the analysis were as follows: 1 to 2 years; 3 to 5 years; 6 to 11 years; 12 to 19 years; 20 to 39 years; 40 to 69 years; and over 70 years (intake rates were not calculated for children under 1; the rationale for this is discussed below). These serving sizes were used during subsequent analyses to generate homegrown food intake rates for individual household members. Assuming that the proportion of the household quantity of each homegrown food item/group was a function of the number of meals and the mean sex- and age-specific serving size for each family member, individual intakes of home produced food were calculated for all members of the survey population using the following general equation:

$$w_i = W_f \cdot \left[\frac{m_i q_i}{\sum_{i=1}^{n} m_i q_i} \right] \qquad \text{(Eqn. 12-1)}$$

where:

w_i = Homegrown amount of food item/group attributed to member i during the week (g/week);

W_f = Total quantity of homegrown food item/group used by the family members (g/week);

m_i = Number of meals of household food consumed by member i during the week (meals/week); and

q_i = Serving size for an individual within the age and sex category of the member (g/meal).

Daily intake of a homegrown food item/group was determined by dividing the weekly value (w_i) by seven. Intake rates were indexed to the self-reported body weight of the survey respondent and reported in units of g/kg-day. Intake rates were not calculated for children under one year of age because their diet differs markedly from that of other household members, and thus the assumption that all household members share all foods would be invalid for this age group. In Section 12.5, a method for estimating per-capita homegrown intake in this age group is suggested.

For the major food groups (fruits, vegetables, meats, dairy, and fish) and individual foods consumed by at least 30 households, distributions of home produced intake among consumers were generated for the entire data set and according to the following subcategories: age groups, urbanization categories, seasons, racial classifications, regions, and responses to the questionnaire.

Consumers were defined as members of survey households who reported consumption of the food item/group of interest during the one week survey period. In addition, for the major food groups, distributions were generated for each region by season, urbanization, and responses to the questionnaire. Table 12-3 presents the codes, definitions, and a description of the data included in each of the subcategories. Intake rates were not calculated for food items/groups for which less than 30 households reported home-produced usage because the number of observations may be inadequate for generating distributions that would be representative of that segment of consumers. Fruits and vegetables were also classified as exposed, protected, or roots, as shown in Appendix 12A of this document. Exposed foods are those that are grown above ground and are likely to be contaminated by pollutants deposited on surfaces that are eaten. Protected products are those that have outer protective coatings that are typically removed before consumption. Distributions of intake were tabulated for these food classes for the same subcategories listed above. Distributions were also tabulated for the following USDA food classifications: dark green vegetables, deep yellow vegetables, other vegetables, citrus fruits, and other fruits. Finally, the percentages of total intake of the food items/groups consumed within survey households that can be attributed to home production were tabulated. The percentage of intake that was homegrown was calculated as the ratio of total intake of the homegrown food item/group by the survey population to the total intake of all forms of the food by the survey population.

As disccussed in Section 12.3, percentiles of average daily intake derived from short time intervals (e.g., 7 days) will not, in general, be reflective of long term patterns. This is especially true regarding consumption of many home grown products (e.g., fruits, vegetables), where there is often a strong seasonal component associated with their use. To try to derive, for the major food categories, the long term distribution of average daily intake rates from the short-term data available here, an approach was developed which attempted to account for seasonal variability in consumption. This approach used regional "seasonally adjusted distributions" to approximate regional long term distributions and then combined these regional adjusted distributions (in proportion to the weights for each region) to obtain a U.S. adjusted distribution which approximated the U.S. long term distribution.

The percentiles of the seasonally adjusted distribution for a given region are generated by averaging the corresponding percentiles of each of the four seasonal distributions of the region. More formally, the seasonally adjusted distribution for each region is such that its inverse cumulative distribution function is the average of the inverse cumulative distribution functions of each of the seasonal distributions of that region. The use of regional seasonally adjusted distributions to approximate regional long term distributions is based on the assumption that each individual consumes at the same regional percentile levels for each season and consumes at a constant weekly rate throughout a given season. Thus, for instance, if the 60th percentile weekly intake level in the South is 14.0 g in the summer and 7.0 g in each of the three other seasons, then an individual in the South with an average weekly intake of 14.0 g over the summer would be assumed to have an intake of 14.0 g for each week of the summer and an intake of 7.0 g for each week of the other seasons.

Note that the seasonally adjusted distributions derived above were generated using the overall

Table 12-3. Sub-category Codes and Definitions

Code	Definition	Description
		Region[a]
1	Northeast	Includes Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont
2	Midwest	Includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
3	South	Includes Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia
4	West	Includes Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming
		Urbanization
1	Central City	Cities with populations of 50,000 or more that is the main city within the metropolitan statistical area (MSA).
2	Suburban	An area that is generally within the boundaries of an MSA, but is not within the legal limit of the central city.
3	Nonmetropolitan	An area that is not within an MSA.
		Race
1	--	White (Caucasian)
2	--	Black
3	--	Asian and Pacific Islander
4	--	Native American, Aleuts, and Eskimos
5, 8, 9	Other/NA	Don't know, no answer, some other race
		Responses to Survey Questions
Grow	Question 75	Did anyone in the household grow any vegetables or fruit for use in the household?
Raise Animals	Question 76	Did anyone in the household produce any animal products such as milk, eggs, meat, or poultry for home use in your household?
Fish/Hunt	Question 77	Did anyone in the household catch any fish or shoot game for home use?
Farm	Question 79	Did anyone in the household operate a farm or ranch?
		Season
Spring	-	April, May, June
Summer	-	July, August, September
Fall	-	October, November, December
Winter	-	January, February, March

[a] Alaska and Hawaii were not included.
Source: USDA 1987-88.

distributions, i.e., both consumers and non-consumers. However, since all the other distributions presented in this section are based on consumers only, the percentiles for the adjusted distributions have been revised to reflect the percentiles among consumers only. Given the above assumption about how each individual consumes, the percentage consuming for the seasonally adjusted distributions give an estimate of the percentage of the population consuming the specified food category at any time during the year.

The intake data presented here for consumers of home-produced foods and the total number of individuals surveyed may be used to calculate the mean and the percentiles of the distribution of home produced food consumption in the overall population (consumers and non-consumers) as follows:

Assuming that w_p is the homegrown amount of food item/group at the pth percentile, N_H is the weighted number of households who are users of the homegrown food item, and N_A is the weighted number of all households surveyed; then, $(N_A - N_H)$ is the weighted number of households who reported zero homegrown consumption. There are (p/100) x N_H households below the pth percentile. Therefore, w_p is the

$$100 \times \frac{\frac{p}{100} \times N_H + [N_A - N_H]}{N_A} \text{ percent} \qquad \text{(Eqn. 12-2)}$$

of the overall distribution of homegrown food consumption. The mean in the overall population is calculated by multiplying the mean among consumers by the proportion consuming, N_H/N_A.

Table 12-4 displays the weighted numbers N_A, as well as the unweighted total survey sample sizes, for each subcategory and overall. It should be noted that the total unweighted number of observations in Table 12-4 (9,852) is somewhat lower than the number of observations reported by USDA because this study only used observations for family members for which age and body weight were specified.

As mentioned above, the intake rates derived in this section are based on the amount of household food consumption. As measured by the NFCS, the amount of food "consumed" by the household is a measure of consumption in an economic sense, i.e., a measure of the weight of food brought into the household that has been consumed (used up) in some manner. In addition to food being consumed by persons, food may be used up by spoiling, by being discarded (e.g., inedible parts), through cooking processes, etc.

USDA estimated preparation losses for various foods (USDA, 1975). For meats, a net cooking loss, which includes dripping and volatile losses, and a net post cooking loss, which involves losses from cutting, bones, excess fat, scraps and juices, were derived for a variety of cuts and cooking methods. For each meat type (e.g., beef) EPA has averaged these losses across all cuts and cooking methods to obtain a mean net cooking loss and a mean net post cooking loss; these are displayed in Table 12-5. For individual fruits and vegetables, USDA (1975) also gave cooking and post-cooking losses. These data are presented in Tables 12-6 and 12-7.

The following formulas can be used to convert the intake rates tabulated here to rates reflecting actual consumption:

$$I_A = I \times (1 - L_1) \times (1 - L_2) \qquad \text{(Eqn. 12-3)}$$

$$I_A = I \times (1 - L_p) \qquad \text{(Eqn. 12-4)}$$

where I_A is the adjusted intake rate, I the tabulated rate, L_1 the cooking loss, L_2 post-cooking loss and L_P the paring loss. For fruits, corrections based on cooking and postcooking losses only apply to fruits that are eaten in cooked forms (i.e., apples eaten as applesauce). For raw forms of the fruits, paring or preparation loss data should be used to correct for losses from removal of skin, peel, core, caps, pits, stems, and defects, or draining of liquids from canned or frozen forms. To obtain preparation losses for food categories, the preparation losses of the individual foods making up the category can be averaged.

In calculating ingestion exposure, assessors should use consistent forms in combining intake rates with contaminant concentrations. This issue has been previously discussed in the other food Chapters.

Table 12-4. Weighted and Unweighted Number of Observations for NFCS Data Used in Analysis of Food Intake

	All Regions		Northeast		Midwest		South		West	
	wgtd	unwgtd	wgtd	unwgtd	wgtd	unwgtd	wgtd	unwgtd	wgtd	unwgtd
Total	188019000	9852	41167000	2018	46395000	2592	64331000	3399	36066000	1841
Age										
< 01	2814000	156	545000	29	812000	44	889000	51	568000	32
01-02	5699000	321	1070000	56	1757000	101	1792000	105	1080000	59
03-05	8103000	461	1490000	92	2251000	133	2543000	140	1789000	95
06-11	16711000	937	3589000	185	4263000	263	5217000	284	3612000	204
12-19	20488000	1084	4445000	210	5490000	310	6720000	369	3833000	195
20-39	61606000	3058	12699000	600	15627000	823	21786000	1070	11494000	565
40-69	56718000	3039	13500000	670	13006000	740	19635000	1080	10577000	549
70 +	15880000	796	3829000	176	3189000	178	5749000	300	3113000	142
Season										
Fall	47667000	1577	9386000	277	14399000	496	13186000	439	10696000	365
Spring	46155000	3954	10538000	803	10657000	1026	16802000	1437	8158000	688
Summer	45485000	1423	9460000	275	10227000	338	17752000	562	7986000	246
Winter	48712000	2898	11783000	663	11112000	732	16591000	961	9226000	542
Urbanization										
Central City	56352000	2217	9668000	332	17397000	681	17245000	715	12042000	489
Nonmetropolitan	45023000	3001	5521000	369	14296000	1053	19100000	1197	6106000	382
Surburban	86584000	4632	25978000	1317	14702000	858	27986000	1487	17918000	970
Race										
Asian	2413000	114	333000	13	849000	37	654000	32	577000	32
Black	21746000	1116	3542000	132	2794000	126	13701000	772	1709000	86
Native American	1482000	91	38000	4	116000	6	162000	8	1166000	73
Other/NA	4787000	235	1084000	51	966000	37	1545000	86	1192000	61
White	157531000	8294	36170000	1818	41670000	2386	48269000	2501	31422000	1589
Response to Questionnaire										
Do you garden?	68152000	3744	12501000	667	22348000	1272	20518000	1136	12725000	667
Do you raise animals?	10097000	631	1178000	70	3742000	247	2603000	162	2574000	152
Do you hunt?	20216000	1148	3418000	194	6948000	411	6610000	366	3240000	177
Do you fish?	39733000	2194	5950000	321	12621000	725	13595000	756	7567000	392
Do you farm?	7329000	435	830000	42	2681000	173	2232000	130	1586000	90

Table 12-5. Percent Weight Losses from Preparation of Various Meats

	Mean Net Cooking Loss (%)[a]			Mean Net Post Cooking Loss (%)[b]		
Meat Type	Mean	Range of Means	Standard Deviation	Mean	Range of Means	Standard Deviation
Beef	27.24	11.00 to 42.00	7.08	24.17	10.00 to 46.00	9.34
Pork	28.06	1.00 to 67.00	9.71	35.86	14.00 to 52.00	11.41
Chicken	32.04	7.00 to 55.00	8.69	31.10	16.00 to 51.00	7.84
Turkey	31.91	11.00 to 57.00	6.97	28.45	8.00 to 48.00	10.07
Lamb	30.00	25.00 to 37.00	4.85	34.00	14.00 to 61.00	13.74
Veal	29.38	10.00 to 45.00	10.79	24.67	18.00 to 37.00	8.73
Fish[c]	29.91	-19.00 to 81.00	18.90	11.26	1.00 to 26.00	6.42
Shellfish[d]	32.83	1.00 to 94.00	29.50	10.00	10.00 to 10.00	0.00

[a] Includes dripping and volatile losses during cooking. Averaged over various cuts and preparation methods.
[b] Includes losses from cutting, shrinkage, excess fat, bones, scraps, and juices. Averaged over various cuts and preparation methods.
[c] Averaged over a variety of fish, to include: bass, bluefish, butterfish, cod, flounder, haddock, halibut, lake trout, makerel, perch, porgy, red snapper, rockfish, salmon, sea trout, shad, smelt, sole, spot, squid, swordfish steak, trout, and whitefish.
[d] Averaged over a variety of shellfish, to include: clams, crab, crayfish, lobster, oysters, and shrimp and shrimp dishes.

Source: USDA, 1975.

Table 12-6. Percent Weight Losses from Preparation of Various Fruits

	Mean Net Cooking Loss (%)[a]			Mean Net Post Cooking Loss (%)[b]			Mean Paring or Preparation Loss (%)[c,d]		
Type of Fruit	Mean	Range of Means	Standard Deviation	Mean	Range of Means	Standard Deviation	Mean	Range of Means	Standard
Apples	-70.9	-478 to 15	156.00	24.6	3 to 42	12.6	22.0[c]	13 to 40[c]	NA[c]
Pears	-53.7	-113 to 19	54.7	--	--	--	22.0[c]	12 to 60[c]	NA[c]
							41.0[d]	25 to 47[d]	NA[d]
Peaches	-145.0	-418 to 5	173.4	36.1	19 to 50	11.7	24.0[c]	6 to 68[c]	NA[c]
Strawberries	--	--	--	--	--	--	10.0[c]	6 to 14[c]	NA[c]
							30.0[d]	96 to 41[d]	14.9[d]
Oranges	--	--	--	--	--	--	29.0[c]	19 to 38[c]	NA[c]

[a] Includes losses from coring, peeling, stemming, trimming, draining, thawing, pitting, and defects, and gains from the addition of water and sugar. Averaged over various preparation methods.
[b] Includes losses from draining cooked forms.
[c] Includes losses from removal of skin or peel, core or pit, stems or caps, seeds and defects.
[d] Includes losses from removal of drained liquids from canned or frozen forms.

Source: USDA, 1975

Table 12-7. Percent Weight Losses from Preparation of Various Vegetables

	Mean Net Cooking Loss (%)[a]			Mean Net Post Cooking Loss (%)[b]		
Type of Vegetable	Mean	Range of Means	Standard Deviation	Mean	Range of Means	Standard Deviation
Asparagus	22.83	5 to 47	15.70	--	--	--
Beets	27.71	4 to 60	17.08	--	--	--
Broccoli	13.83	0 to 39	13.16	--	--	--
Cabbage	11.25	4 to 20	6.22	--	--	--
Carrots	19.13	2 to 41	12.23	--	--	--
Corn	25.67	-1 to 64	21.98	--	--	--
Cucumbers	17.50	5 to 40	13.57	--	--	--
Lettuce	21.63	6 to 36	11.86	--	--	--
Lima Beans	-12.20	-143 to 56	69.12	--	--	--
Okra	11.83	-10 to 40	15.52	--	--	--
Onions	4.54	-90 to 63	38.12	--	--	--
Peas, green	2.00	-147 to 62	63.48	--	--	--
Peppers	13.40	3 to 27	9.11	--	--	--
Pumpkins	19.00	8 to 30	11.00	--	--	--
Snap Beans	18.00	5 to 42	13.07	--	--	--
Tomatoes	15.13	2 to 34	9.56	--	--	--
Potatoes	-21.83	-527 to 46	120.98	21.63	1 to 33	10.86

[a] Includes losses due to paring, trimming, flowering the stalk, thawing, draining, scraping, shelling, slicing, husking, chopping, and dicing and gains from the addition of water, fat, or other ingredients. Averaged over various preparation methods.

[b] Includes losses from draining or removal of skin.

Source: USDA, 1975

12.3. RESULTS

The intake rate distributions (among consumers) for total home-produced fruits, vegetables, meats, fish and dairy products are shown, respectively, in Tables 12-8 through 12-32 (displayed at the end of Chapter 12). Also shown in these tables is the proportion of respondents consuming the item during the (one-week) survey period. Home grown vegetables were the most commonly consumed of the major food groups (18.3%), followed by fruit (7.8%), meat (4.9%), fish (2.1%), and dairy products (0.7%). The intake rates for the major food groups vary according to region, age, urbanization code, race, and response to survey questions. In general, intake rates of home produced foods are higher among populations in non-metropolitan and suburban areas and lowest in central city areas. Results of the regional analyses indicate that intake of homegrown fruits, vegetables, meat and dairy products is generally highest for individuals in the Midwest and South and lowest for those in the Northeast. Intake rates of home-caught fish were generally highest among consumers in the South. Homegrown intake was generally higher among individuals who indicated that they operate a farm, grow their own vegetables, raise animals, and catch their own fish. The results of the seasonal analyses for all regions combined indicated that, in general, homegrown fruits and vegetables were eaten at a higher rate in summer, and home caught fish was consumed at a higher rate in spring; however, seasonal intake varied based on individual regions. Seasonally adjusted intake rate distributions for the major food groups are presented in Table 12-33.

Tables 12-34 through 12-60 present distributions of intake for individual home-produced food items for households that reported consuming the homegrown form of the food during the survey period. Intake rate distributions among consumers for homegrown foods categorized as exposed fruits and vegetables, protected fruits and vegetables, and root vegetables are presented in Tables 12-61 through 12-65; the intake distributions for various USDA classifications (e.g., dark green vegetables) are presented in Tables 12-66 through 12-70. The results are presented in units of g/kg-day. Table 12-71 presents the fraction of household intake attributed to home-produced forms of the food items/groups evaluated. Thus, use of these data in calculating potential dose does not require the

body weight factor to be included in the denominator of the average daily dose (ADD) equation. It should be noted that converting these intake rates into units of g/day by multiplying by a single average body weight is inappropriate, because individual intake rates were indexed to the actual body weights of the survey respondents. However, if there is a need to compare the total intake data presented here to other intake data in units of g/day, a body weight less than 70 kg (i.e., approximately 60 kg; calculated based on the number of respondents in each age category and the average body weights for these age groups, as presented in Volume I, Chapter 7) should be used because the total survey population included children as well as adults.

12.4. ADVANTAGES AND LIMITATIONS

The USDA NFCS data set is the largest publicly available source of information on food consumption habits in the United States. The advantages of using this data set are that it is expected to be representative of the U.S. population and that it provides information on a wide variety of food groups. However, the data collected by the USDA NFCS are based on short-term dietary recall and the intake distributions generated from them may not accurately reflect long-term intake patterns, particularly with respect to the tails (extremes) of the distributions. Also, the two survey components (i.e., household and individual) do not define food items/groups in a consistent manner; as a result, some errors may be introduced into these analyses because the two survey components are linked. The results presented here may also be biased by assumptions that are inherent in the analytical method utilized. The analytical method may not capture all high-end consumers within households because average serving sizes are used in calculating the proportion of homegrown food consumed by each household member. Thus, for instance, in a two-person household where one member had high intake and one had low intake, the method used here would assume that both members had an equal and moderate level of intake. In addition, the analyses assume that all family members consume a portion of the home produced food used within the household. However, not all family members may consume each home produced food item and serving sizes allocated here may not be entirely representative of the portion of household foods consumed by each family member. As was mentioned in Section 12.2, no analyses were performed for the under 1 year age group due to the above concerns. Below, in Section 12.5, a recommended approach for dealing with this age group is presented.

The preparation loss factors discussed in Section 12.2 are intended to convert intake rates based on "household consumption" to rates reflective of what individuals actually consume. However, these factors do not include losses to spoilage, feeding to pets, food thrown away, etc.

12.5. RECOMMENDATIONS

The distribution data presented in this study may be used to assess exposure to contaminants in foods grown, raised, or caught at a specific site. Table 12-72 presents the confidence ratings for homegrown food intake. The recommended values for mean intake rates among consumers for the various home produced foods can be taken from the tables presented here; these can be converted to per capita rates by multiplying by the fraction consuming. The data presented here for consumers of home-produced foods represent average daily intake rates of food items/groups over the seven-day survey period and do not account for variations in eating habits during the rest of the year; thus the percentiles presented here (except the seasonally adjusted) are only valid when considering exposures over time periods of about one week. Similarly, the figures for percentage consuming are also only valid over a one week time period. Since the tabulated percentiles reflect the distribution among consumers only, Eqn. 12-2 must be used to convert the percentiles shown here to ones valid for the general population.

In contrast, the seasonally adjusted percentiles are designed to give percentiles of the long term distribution of average daily intake and the percentage consuming shown with this distribution is designed to estimate the percent of the population consuming at any time during a year. However, because the assumptions mentioned in Section 12.2 can not be verified to hold, these upper percentiles must be assigned a low confidence rating. Eqn. 12-2 may also be used with this distribution to convert percentiles among consumers to percentiles for the general population.

For all the rates tabulated here, preparation loss factors should be applied where appropriate. The form of the food used to estimate intake should be consistent with the form used to measure contaminant concentration.

As described above, the tables do not display rates for children under 1 year of age. For this age group, it is recommended that per-capita homegrown consumption rates be estimated using the following approach. First, for each specific home produced food of interest, the ratio of

per capita intake for children under 1 year compared to that of children 1 to 2 years is calculated using the USDA CSFII 1989-1991 results displayed in Volume II, Chapters 9 and 11. Note these results are based on individual food intakes; however, they consider all sources of food, not just home produced. Second, the per-capita intake rate in the 1 to 2 year age group of the home produced food of interest is calculated as described above by multiplying the fraction consuming by the mean intake rate among consumers (both these numbers are displayed in the tables). Finally, the per capita homegrown intake rate in children under 1 year of the food of interest is estimated by multiplying the homegrown per-capita intake rate in the 1 to 2 year age group by the above ratio of intakes in the under 1 year age group as compared to the 1 to 2 year age group.

The AIHC Sourcebook (AIHC, 1994) used data presented in the 1989 version of the Exposure Factors Handbook which reported data from the USDA 1977-78 NFCS. In this Handbook, new analyses of more recent data from USDA were conducted. Numbers, however, cannot be directly compared with previous values since the results from the new analyses are presented on a body weight basis.

12.6. REFERENCES FOR CHAPTER 12

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USDA. (1993) Food and nutrient intakes by individuals in the United States, 1 Day, 1987-88. Nationwide Food Consumption Survey 1987-88, NFCS Report No. 87-I-1.

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APPENDIX 12A

Food Codes and Definitions Used in Analysis of the 1987/88 USDA NFCS Data

Appendix 12A. Food Codes and Definitions Used in Analysis of the 1987/88 USDA NFCS Data

Food Product	Household Code/Definition	Individual Code
	MAJOR FOOD GROUPS	
Total Fruits	50- Fresh Fruits citrus other vitamin-C rich other fruits 512- Commercially Canned Fruits 522- Commercially Frozen Fruits 533- Canned Fruit Juice 534- Frozen Fruit Juice 535- Aseptically Packed Fruit Juice 536- Fresh Fruit Juice 542- Dried Fruits (includes baby foods)	6- Fruits citrus fruits and juices dried fruits other fruits fruits/juices & nectar fruit/juices baby food (includes baby foods)
Total Vegetables	48- Potatoes, Sweetpotatoes 49- Fresh Vegetables dark green deep yellow tomatoes light green other 511- Commercially Canned Vegetables 521- Commercially Frozen Vegetables 531- Canned Vegetable Juice 532- Frozen Vegetable Juice 537- Fresh Vegetable Juice 538- Aseptically Packed Vegetable Juice 541- Dried Vegetables (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures/dinners)	7- Vegetables (all forms) white potatoes & PR starchy dark green vegetables deep yellow vegetables tomatoes and tom. mixtures other vegetables veg. and mixtures/baby food veg. with meat mixtures (includes baby foods; mixtures, mostly vegetables)
Total Meats	44- Meat beef pork veal lamb mutton goat game lunch meat mixtures 451- Poultry (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	20- Meat, type not specified 21- Beef 22- Pork 23- Lamb, veal, game, carcass meat 24- Poultry 25- Organ meats, sausages, lunchmeats, meat spreads (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks; includes baby foods)
Total Dairy	40- Milk Equivalent fresh fluid milk processed milk cream and cream substitutes frozen desserts with milk cheese dairy-based dips (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners)	1- Milk and Milk Products milk and milk drinks cream and cream substitutes milk desserts, sauces, and gravies cheeses (includes regular fluid milk, human milk, imitation milk products, yogurt, milk-based meal replacements, and infant formulas)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Total Fish	452- Fish, Shellfish various species fresh, frozen, commercial, dried (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners)	26- Fish, Shellfish various species and forms (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks)
INDIVIDUAL FOODS		
White Potatoes	4811- White Potatoes, fresh 4821- White Potatoes, commercially canned 4831- White Potatoes, commercially frozen 4841- White Potatoes, dehydrated 4851- White Potatoes, chips, sticks, salad (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners)	71- White Potatoes and PR Starchy Veg. baked, boiled, chips, sticks, creamed, scalloped, au gratin, fried, mashed, stuffed, puffs, salad, recipes, soups, Puerto Rican starchy vegetables (does not include vegetables soups; vegetable mixtures; or vegetable with meat mixtures)
Peppers	4913- Green/Red Peppers, fresh 5111201 Sweet Green Peppers, commercially canned 5111202 Hot Chili Peppers, commercially canned 5211301 Sweet Green Peppers, commercially frozen 5211302 Green Chili Peppers, commercially frozen 5211303 Red Chili Peppers, commercially frozen 5413112 Sweet Green Peppers, dry 5413113 Red Chili Peppers, dry (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners)	7512100 Pepper, hot chili, raw 7512200 Pepper, raw 7512210 Pepper, sweet green, raw 7512220 Pepper, sweet red, raw 7522600 Pepper, green, cooked, NS as to fat added 7522601 Pepper, green, cooked, fat not added 7522602 Pepper, green, cooked, fat added 7522604 Pepper, red, cooked, NS as to fat added 7522605 Pepper, red, cooked, fat not added 7522606 Pepper, red, cooked, fat added 7522609 Pepper, hot, cooked, NS as to fat added 7522610 Pepper, hot, cooked, fat not added 7522611 Pepper, hot, cooked, fat added 7551101 Peppers, hot, sauce 7551102 Peppers, pickled (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Onions	4953- Onions, Garlic, fresh onions chives garlic leeks 5114908 Garlic Pulp, raw 5114915 Onions, commercially canned 5213722 Onions, commercially frozen 5213723 Onions with Sauce, commercially frozen 5413103 Chives, dried 5413105 Garlic Flakes, dried 5413110 Onion Flakes, dried (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners)	7510950 Chives, raw 7511150 Garlic, raw 7511250 Leek, raw 7511701 Onions, young green, raw 7511702 Onions, mature 7521550 Chives, dried 7521740 Garlic, cooked 7522100 Onions, mature cooked, NS as to fat added 7522101 Onions, mature cooked, fat not added 7522102 Onions, mature cooked, fat added 7522103 Onions, pearl cooked 7522104 Onions, young green cooked, NS as to fat 7522105 Onions, young green cooked, fat not added 7522106 Onions, young green cooked, fat added 7522110 Onion, dehydrated 7541501 Onions, creamed 7541502 Onion rings (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Corn	4956- Corn, fresh 5114601 Yellow Corn, commercially canned 5114602 White Corn, commercially canned 5114603 Yellow Creamed Corn, commercially canned 5114604 White Creamed Corn, commercially canned 5114605 Corn on Cob, commercially canned 5114607 Hominy, canned 5115306 Low Sodium Corn, commercially canned 5115307 Low Sodium Cr. Corn, commercially canned 5213501 Yellow Corn on Cob, commercially frozen 5213502 Yellow Corn off Cob, commercially frozen 5213503 Yell. Corn with Sauce, commercially frozen 5213504 Corn with other Veg., commercially frozen 5213505 White Corn on Cob, commercially frozen 5213506 White Corn off Cob, commercially frozen 5213507 Wh. Corn with Sauce, commercially frozen 5413104 Corn, dried 5413106 Hominy, dry 5413603 Corn, instant baby food (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby food)	7510960 Corn, raw 7521600 Corn, cooked, NS as to color/fat added 7521601 Corn, cooked, NS as to color/fat not added 7521602 Corn, cooked, NS as to color/fat added 7521605 Corn, cooked, NS as to color/cream style 7521607 Corn, cooked, dried 7521610 Corn, cooked, yellow/NS as to fat added 7521611 Corn, cooked, yellow/fat not added 7521612 Corn, cooked, yellow/fat added 7521615 Corn, yellow, cream style 7521616 Corn, cooked, yell. & wh./NS as to fat 7521617 Corn, cooked, yell. & wh./fat not added 7521618 Corn, cooked, yell. & wh./fat added 7521619 Corn, yellow, cream style, fat added 7521620 Corn, cooked, white/NS as to fat added 7521621 Corn, cooked, white/fat not added 7521622 Corn, cooked, white/fat added 7521625 Corn, white, cream style 7521630 Corn, yellow, canned, low sodium, NS fat 7521631 Corn, yell., canned, low sod., fat not add 7521632 Corn, yell., canned, low sod., fat added 7521749 Hominy, cooked 752175- Hominy, cooked 7541101 Corn scalloped or pudding 7541102 Corn fritter 7541103 Corn with cream sauce 7550101 Corn relish 76405- Corn, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; includes baby food)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Apples	5031- Apples, fresh 5122101 Applesauce with sugar, commercially canned 5122102 Applesauce without sugar, comm. canned 5122103 Apple Pie Filling, commercially canned 5122104 Apples, Applesauce, baby/jr., comm. canned 5122106 Apple Pie Filling, Low Cal., comm. canned 5223101 Apple Slices, commercially frozen 5332101 Apple Juice, canned 5332102 Apple Juice, baby, Comm. canned 5342201 Apple Juice, comm. frozen 5342202 Apple Juice, home frozen 5352101 Apple Juice, aseptically packed 5362101 Apple Juice, fresh 5423101 Apples, dried (includes baby food; except mixtures)	6210110 Apples, dried, uncooked 6210115 Apples, dried, uncooked, low sodium 6210120 Apples, dried, cooked, NS as to sweetener 6210122 Apples, dried, cooked, unsweetened 6210123 Apples, dried, cooked, with sugar 6310100 Apples, raw 6310111 Applesauce, NS as to sweetener 6310112 Applesauce, unsweetened 6310113 Applesauce with sugar 6310114 Applesauce with low calorie sweetener 6310121 Apples, cooked or canned with syrup 6310131 Apple, baked NS as to sweetener 6310132 Apple, baked, unsweetened 6310133 Apple, baked with sugar 6310141 Apple rings, fried 6310142 Apple, pickled 6310150 Apple, fried 6340101 Apple, salad 6340106 Apple, candied 6410101 Apple cider 6410401 Apple juice 6410405 Apple juice with vitamin C 6710200 Applesauce baby fd., NS as to str. or jr. 6710201 Applesauce baby food, strained 6710202 Applesauce baby food, junior 6720200 Apple juice, baby food (includes baby food; except mixtures)
Tomatoes	4931- Tomatoes, fresh 5113- Tomatoes, commercially canned 5115201 Tomatoes, low sodium, commercially canned 5115202 Tomato Sauce, low sodium, comm. canned 5115203 Tomato Paste, low sodium, comm. canned 5115204 Tomato Puree, low sodium, comm. canned 5311- Canned Tomato Juice and Tomato Mixtures 5321- Frozen Tomato Juice 5371- Fresh Tomato Juice 5381102 Tomato Juice, aseptically packed 5413115 Tomatoes, dry 5614- Tomato Soup 5624- Condensed Tomato Soup 5654- Dry Tomato Soup (does not include mixtures, and ready-to-eat dinners)	74- Tomatoes and Tomato Mixtures raw, cooked, juices, sauces, mixtures, soups, sandwiches

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Snap Beans	4943- Snap or Wax Beans, fresh 5114401 Green or Snap Beans, commercially canned 5114402 Wax or Yellow Beans, commercially canned 5114403 Beans, baby/jr., commercially canned 5115302 Green Beans, low sodium, comm. canned 5115303 Yell. or Wax Beans, low sod., comm. canned 5213301 Snap or Green Beans, comm. frozen 5213302 Snap or Green w/sauce, comm. frozen 5213303 Snap or Green Beans w/other veg., comm. fr. 5213304 Sp. or Gr. Beans w/other veg./sc., comm. fr. 5213305 Wax or Yell. Beans, comm. frozen (does not include soups, mixtures, and ready-to-eat dinners; includes baby foods)	7510180 Beans, string, green, raw 7520498 Beans, string, cooked, NS color/fat added 7520499 Beans, string, cooked, NS color/no fat 7520500 Beans, string, cooked, NS color & fat 7520501 Beans, string, cooked, green/NS fat 7520502 Beans, string, cooked, green/no fat 7520503 Beans, string, cooked, green/fat 7520511 Beans, str., canned, low sod.,green/NS fat 7520512 Beans, str., canned, low sod.,green/no fat 7520513 Beans, str., canned, low sod.,green/fat 7520600 Beans, string, cooked, yellow/NS fat 7520601 Beans, string, cooked, yellow/no fat 7520602 Beans, string, cooked, yellow/fat 7540301 Beans, string, green, creamed 7540302 Beans, string, green, w/mushroom sauce 7540401 Beans, string, yellow, creamed 7550011 Beans, string, green, pickled 7640100 Beans, green, string, baby 7640101 Beans, green, string, baby, str. 7640102 Beans, green, string, baby, junior 7640103 Beans, green, string, baby, creamed (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; includes baby foods)
Beef	441- Beef (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	21- Beef beef, nfs beef steak beef oxtails, neckbones, ribs roasts, stew meat, corned, brisket, sandwich steaks ground beef, patties, meatballs other beef items beef baby food (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks; includes baby food)
Pork	442- Pork (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	22- Pork pork, nfs; ground dehydrated chops steaks, cutlets ham roasts Canadian bacon bacon, salt pork other pork items pork baby food (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks; includes baby food)
Game	445- Variety Meat, Game (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	233- Game (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	**Household Code/Definition**	**Individual Code**
Poultry	451- Poultry (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	24- Poultry chicken turkey duck other poultry poultry baby food (excludes meat, poultry, and fish with non-meat items; frozen plate meals; soups and gravies with meat, poultry and fish base; and gelatin-based drinks; includes baby food)
Eggs	46- Eggs (fresh equivalent) fresh processed eggs, substitutes (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	3- Eggs eggs egg mixtures egg substitutes eggs baby food froz. meals with egg as main ingred. (includes baby foods)
Broccoli	4912- Fresh Broccoli (and home canned/froz.) 5111203 Broccoli, comm. canned 52112- Comm. Frozen Broccoli (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	722- Broccoli (all forms) (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Carrots	4921- Fresh Carrots (and home canned/froz.) 51121- Comm. Canned Carrots 5115101 Carrots, Low Sodium, Comm. Canned 52121- Comm. Frozen Carrots 5312103 Comm. Canned Carrot Juice 5372102 Carrot Juice Fresh 5413502 Carrots, Dried Baby Food (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7310- Carrots (all forms) 7311140 Carrots in Sauce 7311200 Carrot Chips 76201- Carrots, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; includes baby foods except mixtures)
Pumpkin	4922- Fresh Pumpkin, Winter Squash (and home canned/froz.) 51122- Pumpkin/Squash, Baby or Junior, Comm. Canned 52122- Winter Squash, Comm. Frozen 5413504 Squash, Dried Baby Food (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	732- Pumpkin (all forms) 733- Winter squash (all forms) 76205- Squash, baby (does not include vegetable soups; vegetables mixtures; or vegetable with meat mixtures; includes baby foods)
Asparagus	4941- Fresh Asparagus (and home canned/froz.) 5114101 Comm. Canned Asparagus 5115301 Asparagus, Low Sodium, Comm. Canned 52131- Comm. Frozen Asparagus (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7510080 Asparagus, raw 75202- Asparagus, cooked 7540101 Asparagus, creamed or with cheese (does not include vegetable soups; vegetables mixtures, or vegetable with meat mixtures)

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Lima Beans	4942- Fresh Lima and Fava Beans (and home canned/froz.) 5114204 Comm. Canned Mature Lima Beans 5114301 Comm. Canned Green Lima Beans 5115304 Comm. Canned Low Sodium Lima Beans 52132- Comm. Frozen Lima Beans 54111- Dried Lima Beans 5411306 Dried Fava Beans (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures; does not include succotash)	7510200 Lima Beans, raw 752040- Lima Beans, cooked 752041- Lima Beans, canned 75402- Lima Beans with sauce (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; does not include succotash)
Cabbage	4944- Fresh Cabbage (and home canned/froz.) 4958601 Sauerkraut, home canned or pkgd 5114801 Sauerkraut, comm. canned 5114904 Comm. Canned Cabbage 5114905 Comm. Canned Cabbage (no sauce; incl. baby) 5115501 Sauerkraut, low sodium., comm. canned 5312102 Sauerkraut Juice, comm. canned (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7510300 Cabbage, raw 7510400 Cabbage, Chinese, raw 7510500 Cabbage, red, raw 7514100 Cabbage salad or coleslaw 7514130 Cabbage, Chinese, salad 75210- Chinese Cabbage, cooked 75211- Green Cabbage, cooked 75212- Red Cabbage, cooked 752130- Savoy Cabbage, cooked 75230- Sauerkraut, cooked 7540701 Cabbage, creamed 755025- Cabbage, pickled or in relish (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Lettuce	4945- Fresh Lettuce, French Endive (and home canned/froz.) (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	75113- Lettuce, raw 75143- Lettuce salad with other veg. 7514410 Lettuce, wilted, with bacon dressing 7522005 Lettuce, cooked (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Okra	4946- Fresh Okra (and home canned/froz.) 5114914 Comm. Canned Okra 5213720 Comm. Frozen Okra 5213721 Comm. Frozen Okra with Oth. Veg. & Sauce (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7522000 Okra, cooked, NS as to fat 7522001 Okra, cooked, fat not added 7522002 Okra, cooked, fat added 7522010 Lufta, cooked (Chinese Okra) 7541450 Okra, fried 7550700 Okra, pickled (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Peas	4947- Fresh Peas (and home canned/froz.) 51147- Comm Canned Peas (incl. baby) 5115310 Low Sodium Green or English Peas (canned) 5115314 Low Sod. Blackeye, Gr. or Imm. Peas (canned) 5114205 Blackeyed Peas, comm. canned 52134- Comm. Frozen Peas 5412- Dried Peas and Lentils (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7512000 Peas, green, raw 7512775 Snowpeas, raw 75223- Peas, cowpeas, field or blackeye, cooked 75224- Peas, green, cooked 75225- Peas, pigeon, cooked 75231- Snowpeas, cooked 7541650 Pea salad 7541660 Pea salad with cheese 75417- Peas, with sauce or creamed 76409- Peas, baby 76411- Peas, creamed, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; includes baby foods except mixtures)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	**Household Code/Definition**	**Individual Code**
Cucumbers	4952- Fresh Cucumbers (and home canned/froz.) (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7511100 Cucumbers, raw 75142- Cucumber salads 752167- Cucumbers, cooked 7550301 Cucumber pickles, dill 7550302 Cucumber pickles, relish 7550303 Cucumber pickles, sour 7550304 Cucumber pickles, sweet 7550305 Cucumber pickles, fresh 7550307 Cucumber, Kim Chee 7550311 Cucumber pickles, dill, reduced salt 7550314 Cucumber pickles, sweet, reduced salt (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)
Beets	4954- Fresh Beets (and home canned/froz.) 51145- Comm. Canned Beets (incl. baby) 5115305 Low Sodium Beets (canned) 5213714 Comm. Frozen Beets 5312104 Beet Juice (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	7510250 Beets, raw 752080- Beets, cooked 752081- Beets, canned 7540501 Beets, harvard 7550021 Beets, pickled 76403- Beets, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures; includes baby foods except mixtures)
Strawberries	5022- Fresh Strawberries 5122801 Comm. Canned Strawberries with sugar 5122802 Comm. Canned Strawberries without sugar 5122803 Canned Strawberry Pie Filling 5222- Comm. Frozen Strawberries (does not include ready-to-eat dinners; includes baby foods except mixtures)	6322- Strawberries 6413250 Strawberry Juice (includes baby food; except mixtures)
Other Berries	5033- Fresh Berries Other than Strawberries 5122804 Comm. Canned Blackberries with sugar 5122805 Comm. Canned Blackberries without sugar 5122806 Comm. Canned Blueberries with sugar 5122807 Comm. Canned Blueberries without sugar 5122808 Canned Blueberry Pie Filling 5122809 Comm. Canned Gooseberries with sugar 5122810 Comm. Canned Gooseberries without sugar 5122811 Comm. Canned Raspberries with sugar 5122812 Comm. Canned Raspberries without sugar 5122813 Comm. Canned Cranberry Sauce 5122815 Comm. Canned Cranberry-Orange Relish 52233- Comm. Frozen Berries (not strawberries) 5332404 Blackberry Juice (home and comm. canned) 5423114 Dried Berries (not strawberries) (does not include ready-to-eat dinners; includes baby foods except mixtures)	6320- Other Berries 6321- Other Berries 6341101 Cranberry salad 6410460 Blackberry Juice 64105- Cranberry Juice (includes baby food; except mixtures)

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Peaches	5036- Fresh Peaches 51224- Comm. Canned Peaches (incl. baby) 5223601 Comm. Frozen Peaches 5332405 Home Canned Peach Juice 5423105 Dried Peaches (baby) 5423106 Dried Peaches (does not include ready-to-eat dinners; includes baby foods except mixtures)	62116- Dried Peaches 63135- Peaches 6412203 Peach Juice 6420501 Peach Nectar 67108- Peaches,baby 6711450 Peaches, dry, baby (includes baby food; except mixtures)
Pears	5037- Fresh Pears 51225- Comm. Canned Pears (incl. baby) 5332403 Comm. Canned Pear Juice, baby 5362204 Fresh Pear Juice 5423107 Dried Pears (does not include ready-to-eat dinners; includes baby foods except mixtures)	62119- Dried Pears 63137- Pears 6341201 Pear salad 6421501 Pear Nectar 67109- Pears, baby 6711455 Pears, dry, baby (includes baby food; except mixtures)
EXPOSED/PROTECTED FRUITS/VEGETABLES, ROOT VEGETABLES		
Exposed Fruits	5022- Strawberries, fresh 5023101 Acerola, fresh 5023401 Currants, fresh 5031- Apples/Applesauce, fresh 5033- Berries other than Strawberries, fresh 5034- Cherries, fresh 5036- Peaches, fresh 5037- Pears, fresh 50381- Apricots, Nectarines, Loquats, fresh 5038305 Dates, fresh 50384- Grapes, fresh 50386- Plums, fresh 50387- Rhubarb, fresh 5038805 Persimmons, fresh 5038901 Sapote, fresh 51221- Apples/Applesauce, canned 51222- Apricots, canned 51223- Cherries, canned 51224- Peaches, canned 51225- Pears, canned 51228- Berries, canned 5122903 Grapes with sugar, canned 5122904 Grapes without sugar, canned 5122905 Plums with sugar, canned 5122906 Plums without sugar, canned 5122907 Plums, canned, baby 5122911 Prunes, canned, baby 5122912 Prunes, with sugar, canned 5122913 Prunes, without sugar, canned 5122914 Raisin Pie Filling 5222- Frozen Strawberries 52231- Apples Slices, frozen 52233- Berries, frozen 52234- Cherries, frozen 52236- Peaches, frozen 52239- Rhubarb, frozen 53321- Canned Apple Juice 53322- Canned Grape Juice	62101- Apple, dried 62104- Apricot, dried 62108- Currants, dried 62110- Date, dried 62116- Peaches, dried 62119- Pears, dried 62121- Plum, dried 62122- Prune, dried 62125- Raisins 63101- Apples/applesauce 63102- Wi-apple 63103- Apricots 63111- Cherries, maraschino 63112- Acerola 63113- Cherries, sour 63115- Cherries, sweet 63117- Currants, raw 63123- Grapes 6312601 Juneberry 63131- Nectarine 63135- Peach 63137- Pear 63139- Persimmons 63143- Plum 63146- Quince 63147- Rhubarb/Sapodillo 632- Berries 64101- Apple Cider 64104- Apple Juice 64105- Cranberry Juice 64116- Grape Juice 64122- Peach Juice 64132- Prune/Strawberry Juice 6420101 Apricot Nectar 64205- Peach Nectar 64215- Pear Nectar 67102- Applesauce, baby 67108- Peaches, baby

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Exposed Fruits (continued)	5332402 Canned Prune Juice 5332403 Canned Pear Juice 5332404 Canned Blackberry Juice 5332405 Canned Peach Juice 53421- Frozen Grape Juice 5342201 Frozen Apple Juice, comm. fr. 5342202 Frozen Apple Juice, home fr. 5352101 Apple Juice, asep. packed 5352201 Grape Juice, asep. packed 5362101 Apple Juice, fresh 5362202 Apricot Juice, fresh 5362203 Grape Juice, fresh 5362204 Pear Juice, fresh 5362205 Prune Juice, fresh 5421- Dried Prunes 5422- Raisins, Currants, dried 5423101 Dry Apples 5423102 Dry Apricots 5423103 Dates without pits 5423104 Dates with pits 5423105 Peaches, dry, baby 5423106 Peaches, dry 5423107 Pears, dry 5423114 Berries, dry 5423115 Cherries, dry (includes baby foods)	67109- Pears, baby 6711450 Peaches, baby, dry 6711455 Pears, baby, dry 67202- Apple Juice, baby 6720380 White Grape Juice, baby 67212- Pear Juice, baby (includes baby foods/juices except mixtures; excludes fruit mixtures)
Protected Fruits	501- Citrus Fruits, fresh 5021- Cantaloupe, fresh 5023201 Mangoes, fresh 5023301 Guava, fresh 5023601 Kiwi, fresh 5023701 Papayas, fresh 5023801 Passion Fruit, fresh 5032- Bananas, Plantains, fresh 5035- Melons other than Cantaloupe, fresh 50382- Avocados, fresh 5038301 Figs, fresh 5038302 Figs, cooked 5038303 Figs, home canned 5038304 Figs, home frozen 50385- Pineapple, fresh 5038801 Pomegranates, fresh 5038902 Cherimoya, fresh 5038903 Jackfruit, fresh 5038904 Breadfruit, fresh 5038905 Tamarind, fresh 5038906 Carambola, fresh 5038907 Longan, fresh 5121- Citrus, canned 51226- Pineapple, canned 5122901 Figs with sugar, canned 5122902 Figs without sugar, canned 5122909 Bananas, canned, baby 5122910 Bananas and Pineapple, canned, baby 5122915 Litchis, canned	61- Citrus Fr., Juices (incl. cit. juice mixtures) 62107- Bananas, dried 62113- Figs, dried 62114- Lychees/Papayas, dried 62120- Pineapple, dried 62126- Tamarind, dried 63105- Avocado, raw 63107- Bananas 63109- Cantaloupe, Carambola 63110- Cassaba Melon 63119- Figs 63121- Genip 63125- Guava/Jackfruit, raw 6312650 Kiwi 6312651 Lychee, raw 6312660 Lychee, cooked 63127- Honeydew 63129- Mango 63133- Papaya 63134- Passion Fruit 63141- Pineapple 63145- Pomegranate 63148- Sweetsop, Soursop, Tamarind 63149- Watermelon 64120- Papaya Juice 64121- Passion Fruit Juice 64124- Pineapple Juice 64133- Watermelon Juice 6420150 Banana Nectar

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Protected Fruits (continued)	5122916 Mangos with sugar, canned 5122917 Mangos without sugar, canned 5122918 Mangos, canned, baby 5122920 Guava with sugar, canned 5122921 Guava without sugar, canned 5122923 Papaya with sugar, canned 5122924 Papaya without sugar, canned 52232- Bananas, frozen 52235- Melon, frozen 52237- Pineapple, frozen 5331- Canned Citrus Juices 53323- Canned Pineapple Juice 5332408 Canned Papaya Juice 5332410 Canned Mango Juice 5332501 Canned Papaya Concentrate 5341- Frozen Citrus Juice 5342203 Frozen Pineapple Juice 5351- Citrus and Citrus Blend Juices, asep. packed 5352302 Pineapple Juice, asep. packed 5361- Fresh Citrus and Citrus Blend Juices 5362206 Papaya Juice, fresh 5362207 Pineapple-Coconut Juice, fresh 5362208 Mango Juice, fresh 5362209 Pineapple Juice, fresh 5423108 Pineapple, dry 5423109 Papaya, dry 5423110 Bananas, dry 5423111 Mangos, dry 5423117 Litchis, dry 5423118 Tamarind, dry 5423119 Plantain, dry (includes baby foods)	64202- Cantaloupe Nectar 64203- Guava Nectar 64204- Mango Nectar 64210- Papaya Nectar 64213- Passion Fruit Nectar 64221- Soursop Nectar 6710503 Bananas, baby 6711500 Bananas, baby, dry 6720500 Orange Juice, baby 6721300 Pineapple Juice, baby (includes baby foods/juices except mixtures; excludes fruit mixtures)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Exposed Veg.	491- Fresh Dark Green Vegetables 493- Fresh Tomatoes 4941- Fresh Asparagus 4943- Fresh Beans, Snap or Wax 4944- Fresh Cabbage 4945- Fresh Lettuce 4946- Fresh Okra 49481- Fresh Artichokes 49483- Fresh Brussel Sprouts 4951- Fresh Celery 4952- Fresh Cucumbers 4955- Fresh Cauliflower 4958103 Fresh Kohlrabi 4958111 Fresh Jerusalem Artichokes 4958112 Fresh Mushrooms 4958113 Mushrooms, home canned 4958114 Mushrooms, home frozen 4958118 Fresh Eggplant 4958119 Eggplant, cooked 4958120 Eggplant, home frozen 4958200 Fresh Summer Squash 4958201 Summer Squash, cooked 4958202 Summer Squash, home canned 4958203 Summer Squash, home frozen 4958402 Fresh Bean Sprouts 4958403 Fresh Alfalfa Sprouts 4958504 Bamboo Shoots 4958506 Seaweed 4958508 Tree Fern, fresh 4958601 Sauerkraut 5111- Dark Green Vegetables (all are exposed) 5113- Tomatoes 5114101 Asparagus, comm. canned 51144- Beans, green, snap, yellow, comm. canned 5114704 Snow Peas, comm. canned 5114801 Sauerkraut, comm. canned 5114901 Artichokes, comm. canned 5114902 Bamboo Shoots, comm. canned 5114903 Bean Sprouts, comm. canned 5114904 Cabbage, comm. canned 5114905 Cabbage, comm. canned, no sauce 5114906 Cauliflower, comm. canned, no sauce 5114907 Eggplant, comm. canned, no sauce 5114913 Mushrooms, comm. canned 5114914 Okra, comm. canned 5114918 Seaweeds, comm. canned 5114920 Summer Squash, comm. canned	721- Dark Green Leafy Veg. 722- Dark Green Nonleafy Veg. 74- Tomatoes and Tomato Mixtures 7510050 Alfalfa Sprouts 7510075 Artichoke, Jerusalem, raw 7510080 Asparagus, raw 75101- Beans, sprouts and green, raw 7510275 Brussel Sprouts, raw 7510280 Buckwheat Sprouts, raw 7510300 Cabbage, raw 7510400 Cabbage, Chinese, raw 7510500 Cabbage, Red, raw 7510700 Cauliflower, raw 7510900 Celery, raw 7510950 Chives, raw 7511100 Cucumber, raw 7511120 Eggplant, raw 7511200 Kohlrabi, raw 75113- Lettuce, raw 7511500 Mushrooms, raw 7511900 Parsley 7512100 Pepper, hot chili 75122- Peppers, raw 7512750 Seaweed, raw 7512775 Snowpeas, raw 75128- Summer Squash, raw 7513210 Celery Juice 7514100 Cabbage or cole slaw 7514130 Chinese Cabbage Salad 7514150 Celery with cheese 75142- Cucumber salads 75143- Lettuce salads 7514410 Lettuce, wilted with bacon dressing 7514600 Greek salad 7514700 Spinach salad 7520600 Algae, dried 75201- Artichoke, cooked 75202- Asparagus, cooked 75203- Bamboo shoots, cooked 752049- Beans, string, cooked 75205- Beans, green, cooked/canned 75206- Beans, yellow, cooked/canned 75207- Bean Sprouts, cooked 752085- Breadfruit 752090- Brussel Sprouts, cooked 75210- Cabbage, Chinese, cooked 75211- Cabbage, green, cooked

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Exposed Veg. (cont.)	5114923 Chinese or Celery Cabbage, comm. canned 51152- Tomatoes, canned, low sod. 5115301 Asparagus, canned, low sod. 5115302 Beans, Green, canned, low sod. 5115303 Beans, Yellow, canned, low sod. 5115309 Mushrooms, canned, low sod. 51154- Greens, canned, low sod. 5115501 Sauerkraut, low sodium 5211- Dark Gr. Veg., comm. frozen (all exp.) 52131- Asparagus, comm. froz. 52133- Beans, snap, green, yellow, comm. froz. 5213407 Peapods, comm froz. 5213408 Peapods, with sauce, comm froz. 5213409 Peapods, with other veg., comm froz. 5213701 Brussel Sprouts, comm. froz. 5213702 Brussel Sprouts, comm. froz. with cheese 5213703 Brussel Sprouts, comm. froz. with other veg. 5213705 Cauliflower, comm. froz. 5213706 Cauliflower, comm. froz. with sauce 5213707 Cauliflower, comm. froz. with other veg. 5213708 Caul., comm. froz. with other veg. & sauce 5213709 Summer Squash, comm. froz. 5213710 Summer Squash, comm. froz. with other veg. 5213716 Eggplant, comm. froz. 5213718 Mushrooms with sauce, comm. froz. 5213719 Mushrooms, comm. froz. 5213720 Okra, comm. froz. 5213721 Okra, comm. froz., with sauce 5311- Canned Tomato Juice and Tomato Mixtures 5312102 Canned Sauerkraut Juice 5321- Frozen Tomato Juice 5371- Fresh Tomato Juice 5381102 Aseptically Packed Tomato Juice 5413101 Dry Algae 5413102 Dry Celery 5413103 Dry Chives 5413109 Dry Mushrooms 5413111 Dry Parsley 5413112 Dry Green Peppers 5413113 Dry Red Peppers 5413114 Dry Seaweed 5413115 Dry Tomatoes (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	75212- Cabbage, red, cooked 752130- Cabbage, savoy, cooked 75214- Cauliflower 75215- Celery, Chives, Christophine (chayote) 752167- Cucumber, cooked 752170- Eggplant, cooked 752171- Fern shoots 752172- Fern shoots 752173- Flowers of sesbania, squash or lily 7521801 Kohlrabi, cooked 75219- Mushrooms, cooked 75220- Okra/lettuce, cooked 7522116 Palm Hearts, cooked 7522121 Parsley, cooked 75226- Peppers, pimento, cooked 75230- Sauerkraut, cooked/canned 75231- Snowpeas, cooked 75232- Seaweed 75233- Summer Squash 7540050 Artichokes, stuffed 7540101 Asparagus, creamed or with cheese 75403- Beans, green with sauce 75404- Beans, yellow with sauce 7540601 Brussel Sprouts, creamed 7540701 Cabbage, creamed 75409- Cauliflower, creamed 75410- Celery/Chiles, creamed 75412- Eggplant, fried, with sauce, etc. 75413- Kohlrabi, creamed 75414- Mushrooms, Okra, fried, stuffed, creamed 754180- Squash, baked, fried, creamed, etc. 7541822 Christophine, creamed 7550011 Beans, pickled 7550051 Celery, pickled 7550201 Cauliflower, pickled 755025- Cabbage, pickled 7550301 Cucumber pickles, dill 7550302 Cucumber pickles, relish 7550303 Cucumber pickles, sour 7550304 Cucumber pickles, sweet 7550305 Cucumber pickles, fresh 7550307 Cucumber, Kim Chee 7550308 Eggplant, pickled 7550311 Cucumber pickles, dill, reduced salt 7550314 Cucumber pickles, sweet, reduced salt 7550500 Mushrooms, pickled 7550700 Okra, pickled 75510- Olives 7551101 Peppers, hot 7551102 Peppers,pickled 7551301 Seaweed, pickled 7553500 Zucchini, pickled 76102- Dark Green Veg., baby 76401- Beans, baby (excl. most soups & mixtures)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Protected Veg.	4922- Fresh Pumpkin, Winter Squash 4942- Fresh Lima Beans 4947- Fresh Peas 49482- Fresh Soy Beans 4956- Fresh Corn 4958303 Succotash, home canned 4958304 Succotash, home frozen 4958401 Fresh Cactus (prickly pear) 4958503 Burdock 4958505 Bitter Melon 4958507 Horseradish Tree Pods 51122- Comm. Canned Pumpkin and Squash (baby) 51142- Beans, comm. canned 51143- Beans, lima and soy, comm. canned 51146- Corn, comm. canned 5114701 Peas, green, comm. canned 5114702 Peas, baby, comm. canned 5114703 Peas, blackeye, comm. canned 5114705 Pigeon Peas, comm. canned 5114919 Succotash, comm. canned 5115304 Lima Beans, canned, low sod. 5115306 Corn, canned, low sod. 5115307 Creamed Corn, canned, low sod. 511531- Peas and Beans, canned, low sod. 52122- Winter Squash, comm. froz. 52132- Lima Beans, comm. froz. 5213401 Peas, gr., comm. froz. 5213402 Peas, gr., with sauce, comm. froz. 5213403 Peas, gr., with other veg., comm. froz. 5213404 Peas, gr., with other veg., comm. froz. 5213405 Peas, blackeye, comm froz. 5213406 Peas, blackeye, with sauce, comm froz. 52135- Corn, comm. froz. 5213712 Artichoke Hearts, comm. froz. 5213713 Baked Beans, comm. froz. 5213717 Kidney Beans, comm. froz. 5213724 Succotash, comm. froz. 5411- Dried Beans 5412- Dried Peas and Lentils 5413104 Dry Corn 5413106 Dry Hominy 5413504 Dry Squash, baby 5413603 Dry Creamed Corn, baby (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	732- Pumpkin 733- Winter Squash 7510200 Lima Beans, raw 7510550 Cactus, raw 7510960 Corn, raw 7512000 Peas, raw 7520070 Aloe vera juice 752040- Lima Beans, cooked 752041- Lima Beans, canned 7520829 Bitter Melon 752083- Bitter Melon, cooked 7520950 Burdock 752131- Cactus 752160- Corn, cooked 752161- Corn, yellow, cooked 752162- Corn, white, cooked 752163- Corn, canned 7521749 Hominy 752175- Hominy 75223- Peas, cowpeas, field or blackeye, cooked 75224- Peas, green, cooked 75225- Peas, pigeon, cooked 75301- Succotash 75402- Lima Beans with sauce 75411- Corn, scalloped, fritter, with cream 7541650 Pea salad 7541660 Pea salad with cheese 75417- Peas, with sauce or creamed 7550101 Corn relish 76205- Squash, yellow, baby 76405- Corn, baby 76409- Peas, baby 76411- Peas, creamed, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	Household Code/Definition	Individual Code
Root Vegetables	48- Potatoes, Sweetpotatoes 4921- Fresh Carrots 4953- Fresh Onions, Garlic 4954- Fresh Beets 4957- Fresh Turnips 4958101 Fresh Celeriac 4958102 Fresh Horseradish 4958104 Fresh Radishes, no greens 4958105 Radishes, home canned 4958106 Radishes, home frozen 4958107 Fresh Radishes, with greens 4958108 Fresh Salsify 4958109 Fresh Rutabagas 4958110 Rutabagas, home frozen 4958115 Fresh Parsnips 4958116 Parsnips, home canned 4958117 Parsnips, home frozen 4958502 Fresh Lotus Root 4958509 Ginger Root 4958510 Jicama, including yambean 51121- Carrots, comm. canned 51145- Beets, comm. canned 5114908 Garlic Pulp, comm. canned 5114910 Horseradish, comm. prep. 5114915 Onions, comm. canned 5114916 Rutabagas, comm. canned 5114917 Salsify, comm. canned 5114921 Turnips, comm. canned 5114922 Water Chestnuts, comm. canned 51151- Carrots, canned, low sod. 5115305 Beets, canned, low sod. 5115502 Turnips, low sod. 52121- Carrots, comm. froz. 5213714 Beets, comm. froz. 5213722 Onions, comm. froz. 5213723 Onions, comm. froz., with sauce 5213725 Turnips, comm. froz. 5312103 Canned Carrot Juice 5312104 Canned Beet Juice 5372102 Fresh Carrot Juice 5413105 Dry Garlic 5413110 Dry Onion 5413502 Dry Carrots, baby 5413503 Dry Sweet Potatoes, baby (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures)	71- White Potatoes and Puerto Rican St. Veg. 7310- Carrots 7311140 Carrots in sauce 7311200 Carrot chips 734- Sweetpotatoes 7510250 Beets, raw 7511150 Garlic, raw 7511180 Jicama (yambean), raw 7511250 Leeks, raw 75117- Onions, raw 7512500 Radish, raw 7512700 Rutabaga, raw 7512900 Turnip, raw 752080- Beets, cooked 752081- Beets, canned 7521362 Cassava 7521740 Garlic, cooked 7521771 Horseradish 7521850 Lotus root 752210- Onions, cooked 7522110 Onions, dehydrated 752220- Parsnips, cooked 75227- Radishes, cooked 75228- Rutabaga, cooked 75229- Salsify, cooked 75234- Turnip, cooked 75235- Water Chestnut 7540501 Beets, harvard 75415- Onions, creamed, fried 7541601 Parsnips, creamed 7541810 Turnips, creamed 7550021 Beets, pickled 7550309 Horseradish 7551201 Radishes, pickled 7553403 Turnip, pickled 76201- Carrots, baby 76209- Sweetpotatoes, baby 76403- Beets, baby (does not include vegetable soups; vegetable mixtures; or vegetable with meat mixtures)

Appendix 12A. Food Codes and Definitinos Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	**Household Code/Definition**	**Individual Code**
	USDA SUBCATEGORIES	
Dark Green Vegetables	491- Fresh Dark Green Vegetables 5111- Comm. Canned Dark Green Veg. 51154- Low Sodium Dark Green Veg. 5211- Comm. Frozen Dark Green Veg. 5413111 Dry Parsley 5413112 Dry Green Peppers 5413113 Dry Red Peppers (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures/dinners; excludes vegetable juices and dried vegetables)	72- Dark Green Vegetables all forms leafy, nonleafy, dk. gr. veg. soups
Deep Yellow Vegetables	492- Fresh Deep Yellow Vegetables 5112- Comm. Canned Deep Yellow Veg. 51151- Low Sodium Carrots 5212- Comm. Frozen Deep Yellow Veg. 5312103 Carrot Juice 54135- Dry Carrots, Squash, Sw. Potatoes (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures/dinners; excludes vegetable juices and dried vegetables)	73- Deep Yellow Vegetables all forms carrots, pumpkin, squash, sweetpotatoes, dp. yell. veg. soups
Other Vegetables	494- Fresh Light Green Vegetables 495- Fresh Other Vegetables 5114- Comm. Canned Other Veg. 51153- Low Sodium Other Veg. 51155- Low Sodium Other Veg. 5213- Comm. Frozen Other Veg. 5312102 Sauerkraut Juice 5312104 Beet Juice 5411- Dreid Beans 5412- Dried Peas, Lentils 541310- Dried Other Veg. 5413114 Dry Seaweed 5413603 Dry Cr. Corn, baby (does not include soups, sauces, gravies, mixtures, and ready-to-eat dinners; includes baby foods except mixtures/dinners; excludes vegetable juices and dried vegetables)	75- Other Vegetables all forms
Citrus Fruits	501- Fresh Citrus Fruits 5121- Comm. Canned Citrus Fruits 5331- Canned Citrus and Citrus Blend Juice 5341- Frozen Citrus and Citrus Blend Juice 5351- Aseptically Packed Citrus and Citr. Blend Juice 5361- Fresh Citrus and Citrus Blend Juice (includes baby foods; excludes dried fruits)	61- Citrus Fruits and Juices 6720500 Orange Juice, baby food 6720600 Orange-Apricot Juice, baby food 6720700 Orange-Pineapple Juice, baby food 6721100 Orange-Apple-Banana Juice, baby food (excludes dried fruits)

Appendix 12A. Food Codes and Definitins Used in Analysis of the 1987/88 USDA NFCS Data (continued)

Food Product	**Household Code/Definition**	**Individual Code**
Other Fruits	502- Fresh Other Vitamin C-Rich Fruits 503- Fresh Other Fruits 5122- Comm. Canned Fruits Other than Citrus 5222- Frozen Strawberries 5223- Frozen Other than Citr. or Vitamin C-Rich Fr. 5332- Canned Fruit Juice Other than Citrus 5342- Frozen Juices Other than Citrus 5352- Aseptically Packed Fruit Juice Other than Citr. 5362- Fresh Fruit Juice Other than Citrus 542- Dry Fruits (includes baby foods; excludes dried fruits)	62- Dried Fruits 63- Other Fruits 64- Fruit Juices and Nectars Excluding Citrus 671- Fruits, baby 67202- Apple Juice, baby 67203- Baby Juices 67204- Baby Juices 67212- Baby Juices 67213- Baby Juices 673- Baby Fruits 674- Baby Fruits