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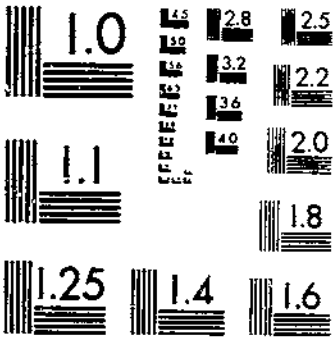

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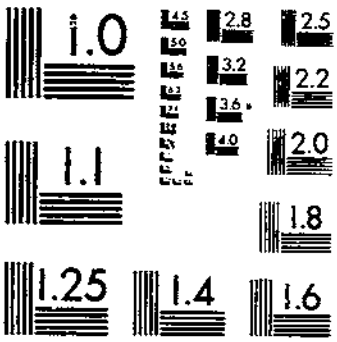

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Conversion Factors and Weights and Measures

For Agricultural Commodities and Their Products

U.S. Department of Agriculture
Economics, Statistics, and Cooperatives Service
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CONTENTS

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CONVERSION FACTORS AND WEIGHTS AND MEASURES FOR AGRICULTURAL COMMODITIES AND THEIR PRODUCTS

The tables in this report were compiled to provide a manual of uniform conversion factors for use in statistical, research, and service programs of the Department. A reasonably complete set of all-purpose factors is presented. However, for a particular commodity, the data may not be entirely adequate for all uses.

The data are intended to represent overall averages except where indicated. However, in some instances the averages are only approximations. All conversion factors included are based on the most recent and reliable information available and are intended to reflect current conditions and practices. Factors for many commodities change from year to year; therefore, caution should be exercised when using these data to compile or revise historical series.

The number of significant figures shown for many factors does not necessarily indicate the degree of precision. Some of the factors are in common use and carry more significant digits than might be justified when considering the accuracy of the data from which they were derived.

Data for the revisions in this report were compiled by Cleveland P. Eley under the general supervision of Henry Badger. Instead of the task force method used in the last revision, commodity specialists in the Commodity Economics Division of the Economics, Statistics, and Cooperatives Service provided leadership for revisions of the tables in their area of interest. These include Larry Duewer and Allen Baker for livestock and livestock products; Alfred Burns, Charles Porter, and Jules Powell for fruits and vegetables; Charles Shaw and Floyd Lasley for dairy products; George Kromer for fats and oils products; Kenneth Blase for poultry and eggs; Frederick Gray for sugar, coffee, and tea; John Lawler for fibers; and Robert Enochian for dehydrated and frozen products. Other persons in the Department also sharing the responsibility for updating this report included Russell Hawes, W. Edmond Tyler, Larry Crabtree, and Donald Liden of the Agricultural Marketing Service; David Shenkenberger and Curtis Green in Food Safety and Quality Service; and Wilda Martinez of the Agricultural Research Service (now part of Science and Education Administration) who coordinated requests for data from scientists at ARS (SEA) regional research laboratories. L. W. Van Meir, National Canners Association, provided data on canned fruits and vegetables.

A new table showing metric wet and dry volume conversion factors has been added. These data along with other metric information provide a basis for converting most weights and measures shown in this report to metric measures.

This report is a revision of Statistical Bulletin No. 362, Conversion Factors and Weights and Measures for Agricultural Commodities and Their Products, published by the Economic Research Service, USDA, in June 1965. Many of the revisions in this report reflect the changing structure of agricultural production and marketing patterns.

Weights and Measures

Table 1--Factors for converting domestic and metric weights and measures commonly used for agricultural commodities

Domestic weight		Metric equivalent		Metric weight		Domestic equivalent	
1 ounce	=	28.3495	grams	1 gram	=	0.035274	ounce
1 pound	=	453.5924	grams	1 gram	=	.0022046	pound
1 pound	=	.453924	kilogram	1 kilogram	=	2.204622	pounds
1 pound	=	.0045359	metric quintal	1 metric quintal	=	220.4622	pounds
1 pound	=	.0005	short ton	1 short ton	=	2,000	pounds
1 pound	=	.0004536	metric ton	1 metric ton	=	2,204.622	pounds
1 pound	=	.0004464	long ton	1 long ton	=	2,240	pounds
1 kilogram	=	.0011023	short ton	1 short ton	=	907.1849	kilograms
1 kilogram	=	.001	metric ton	1 metric ton	=	1,000	kilograms
1 kilogram	=	.0009842	long ton	1 long ton	=	1,016.047	kilograms
1 short ton	=	.907185	metric ton	1 metric ton	=	1.102311	short tons
1 long ton	=	1.016047	metric tons	1 metric ton	=	.984206	long ton
1 short ton	=	.892857	long ton	1 long ton	=	1.12	short tons
1 million pounds	=	500	short tons	1 short ton	=	.002	million pounds
1 million pounds	=	453.5925	metric tons	1 metric ton	=	.0022046	million pounds
1 million pounds	=	446.4286	long tons	1 long ton	=	.00224	million pounds
60-pound bushel of wheat, white potatoes, soybeans							
1 bushel	=	.03	short ton	1 short ton	=	33.333	bushels
1 bushel	=	.0272155	metric ton	1 metric ton	=	36.7437	bushels
1 bushel	=	.0267857	long ton	1 long ton	=	37.333	bushels
1 bushel	=	.272155	metric quintal	1 metric quintal	=	3.67437	bushels
1 bushel	=	27.2155	kilograms	1 kilogram	=	.036744	bushel
56-pound bushel of corn, rye, sorghum grain, flaxseed							
1 bushel	=	.028	short ton	1 short ton	=	35.714	bushels
1 bushel	=	.0254	metric ton	1 metric ton	=	39.368	bushels
1 bushel	=	.025	long ton	1 long ton	=	40	bushels
48-pound bushel of barley, buckwheat, apples							
1 bushel	=	.024	short ton	1 short ton	=	41.667	bushels
1 bushel	=	.021772	metric ton	1 metric ton	=	45.9296	bushels
1 bushel	=	.021429	long ton	1 long ton	=	46.667	bushels
32-pound bushel of oats							
1 bushel	=	.016	short ton	1 short ton	=	62.5	bushels
1 bushel	=	.014515	metric ton	1 metric ton	=	68.8944	bushels
1 bushel	=	.014286	long ton	1 long ton	=	70	bushels
38-pound bushel of oats							
1 bushel	=	.019	short ton	1 short ton	=	52.63	bushels
1 bushel	=	.01724	metric ton	1 metric ton	=	58.016	bushels
1 bushel	=	.01696	long ton	1 long ton	=	58.94	bushels

Table 2--Factors for converting domestic and metric dry and liquid measures 1/

Unit		Metric equivalent	Unit		Domestic equivalent
		Dry measure			Dry measure
1 pint	=	0.5506 liter	1 liter	=	0.8162 pints
1 quart	=	1.1012 liters	1 liter	=	.9081 quart
1 peck	=	8.8098 liters	1 liter	=	.1135 peck
1 bushel	=	35.2391 liters	1 liter	=	.0284 bushel
1 cubic inch	=	.0164 liter	1 liter	=	61.0240 cubic inches
1 cubic foot	=	23.3169 liters	1 liter	=	.0353 cubic foot
1 cubic meter	=	.1000 liter	1 liter	=	.0010 cubic meter
		Liquid measure			Liquid measure
1 fluid ounce	=	.0296 liter	1 liter	=	33.8140 fluid ounces
1 liquid pint	=	.4732 liter	1 liter	=	2.1134 pints
1 liquid quart	=	.9464 liter	1 liter	=	1.0567 quarts
1 gallon	=	3.7854 liters	1 liter	=	.2642 gallon
1 cubic inch	=	.0164 liter	1 liter	=	61.0237 cubic inches
1 cubic foot	=	28.3169 liters	1 liter	=	.0353 cubic foot
1 milliliter	=	.0010 liter	1 liter	=	1,000.0000 milliliters

1/ In the metric system of weights and measures, designations of multiples and subdivisions of any unit may be derived by combining with the name of the unit the prefixes deka, hecto, and kilo, meaning, respectively, 10, 100, and 1,000, and deci, centi, and milli, meaning, respectively, one-tenth, one-hundredth, and one-thousandth.

Table 3--Factors for converting ounces to pounds

Ounces	Plus 0 ounces	Plus 1/4 ounce	Plus 1/2 ounce	Plus 3/4 ounce
		Pounds		
0	NA	0.015625	0.031250	0.046875
1	0.062500	.078125	.093750	.109375
2	.125000	.140625	.156250	.171875
3	.187500	.203125	.218750	.234375
4	.250000	.265625	.281250	.296875
5	.312500	.328125	.343750	.359375
6	.375000	.390625	.406250	.421875
7	.437500	.453125	.468750	.484375
8	.500000	.515625	.531250	.546875
9	.562500	.578125	.593750	.609375
10	.625000	.640625	.656250	.671875
11	.687500	.703125	.718750	.734375
12	.750000	.765625	.781250	.796875
13	.812500	.828125	.843750	.859375
14	.875000	.890625	.906250	.921875
15	.937500	.953125	.968750	.984375

NA = Not applicable.

Table 4--Conversion factors for test weight per Winchester bushel, test weight per imperial bushel, and kilograms per hectoliter 1/

Item	Factor
Pounds per Winchester bushel to--	
Pounds per imperial bushel	1.032
Kilograms per hectoliter	1.287
Pounds per imperial bushel to--	
Pounds per Winchester bushel	.969
Kilograms per hectoliter	1.247
Kilograms per hectoliter to--	
Pounds per Winchester bushel	.777
Pounds per imperial bushel	.802

1/ Winchester bushel is the standard U.S. bushel (volume).

Table 5--Comparison of test weight per Winchester bushel, test weight per imperial bushel, and kilograms per hectoliter

(25-to-65-pound basis Winchester bushel)

Test weight per Winchester bushel	Test weight per imperial bushel	Kilograms per hectoliter
Pounds	Pounds	Kilograms
25	25.8	32.2
26	26.8	33.5
27	27.9	34.7
28	28.9	36.0
29	29.9	37.3
30	31.0	38.6
31	32.0	39.9
32	33.0	41.2
33	34.1	42.5
34	35.1	43.8
35	36.1	45.0
36	37.2	46.3
37	38.2	47.6
38	39.2	48.9
39	40.2	50.2
40	41.3	51.5
41	42.3	52.8
42	43.3	54.1
43	44.4	55.3
44	45.4	56.6
45	46.4	57.9
46	47.5	59.2
47	48.5	60.5
48	49.5	61.8
49	50.6	63.1
50	51.6	64.4
51	52.6	65.6
52	53.7	66.9
53	54.7	68.2
54	55.7	69.5
55	56.8	70.8
56	57.8	72.1
57	58.8	73.4
58	59.9	74.6
59	60.9	75.9
60	61.9	77.2
61	63.0	78.5
62	64.0	79.8
63	65.0	81.1
64	66.0	82.4
65	67.1	83.7

Table 6--Factors for obtaining retail weights from weights at specified market levels

Commodity	Primary weight form	Factor
Dairy products:		
Fluid milk and cream	Farm weight	0.93
Cheese, American, and other	Factory weight	1.00
Meats:		
Beef	Carcass weight	.74
Veal	do.	.83
Lamb	do.	.89
Pork	do.	1/.92
Poultry:		
Chickens	Ready-to-cook weight	1.00
Turkeys	do.	1.00
Eggs	Farm weight	2/.97
Fish:		
Fresh and frozen	Edible weight	3/1.00
Shellfish, fresh and frozen	do.	1.00
Cured fish	Cured weight	1.00
Fats and oils:		
Lard	Fat content	1.00
Margarine	do.	1.25
Compounds and vegetable and cooking fats	do.	1.00
Peanuts, shelled edible	Farmer's stock basis	.556
Sugar	Refined	1.00
	Raw value	.935
Dry beans and peas	Farm weight, cleaned	.96
Grain products:		
Barley, pearl	Farm weight of barley	.604
Barley, other food use	do.	4/.708
Wheat products:		
White flour	Farm weight of wheat	.731
Whole wheat flour or meal	do.	.98
Corn products:		
Corn meal	Farm weight of shelled corn	.893
Hominy grits	do.	.518
Cornstarch	do.	.614
Corn cereals	do.	.384

See footnotes at end of table.

Continued--

Table 6--Factors for obtaining retail weights from weights at specified market levels--Continued

Commodity	Primary weight form	Factor
Grain products-Continued:		
Corn syrup	Farm weight of shelled corn	0.672
Corn sugar	do.	.536
Oat cereal	Farm weight of oats	.579
Rye flour	Farm weight of rye	.80
Buckwheat flour	Farm weight of buckwheat	.60
Rice, milled	Wholesale weight	1.00
Fresh fruits:		
Apples	Farm weight	.96
Apricots	do.	.91
Avocados	do.	94
Bananas	do.	1.00
Cherries	do.	.92
Citrus:		
Oranges	do.	.97
Tangerines	do.	.94
Grapefruit	do.	.97
Lemons	do.	.96
Limes	do.	.95
Tangelos	do.	.96
Cranberries	do.	.96
Dates	do.	.96
Figs	do.	.91
Grapes	do.	.91
Melons:		
Cantaloups	do.	.92
Watermelons	do.	.90
Nectarines	do.	.95
Peaches	do.	.94
Pears	do.	.95
Pineapples	do.	.95
Plums or prunes	do.	.95
Strawberries	do.	.92
Canned fruits and juices	Canned weight	1.00
Chilled fruits and juices	Product weight	1.00
Dried fruits	Packed processed weight	1.00
Frozen fruits and juices	Frozen weight	1.00
Fresh vegetables:		
Onions, dry	Farm weight	.94
Potatoes	do.	.96

See footnotes at end of table.

Continued--

Table 6--Factors for obtaining retail weights from weights at specified market levels--Continued

Commodity	Primary weight form	Factor
Fresh vegetables-Continued:		
Sweet potatoes	Farm weight	0.90
Tomatoes	do.	.85
Dark green and deep yellow vegetables:		
Broccoli	do.	.92
Carrots	do.	.97
Escarole	do.	.93
Kale	do.	.88
Peppers, green	do.	.92
Spinach	do.	.88
Other:		
Artichokes	do.	.93
Asparagus	do.	.91
Beans:		
Lima	do.	.92
Snap	do.	.94
Beets	do.	.93
Brussels sprouts	do.	.92
Cabbage	do.	.93
Cauliflower	do.	.92
Celery	do.	.93
Corn	do.	.92
Cucumbers	do.	.92
Eggplant	do.	.90
Garlic	do.	.81
Lettuce, all varieties	do.	.93
Onions, green	do.	.94
Peas	do.	.95
Canned vegetables	Canned weight	1.00
Frozen vegetables	Frozen weight	1.00
Dehydrated vegetables	Dehydrated weight	1.00
Beverages:		
Coffee	Green bean basis	.84
Tea	Import weight basis	1.00
Cocoa products	Bean basis	5/.80

1/ Average 1975-77. 2/ This factor allows for breakage only. In addition there is a loss of weight of about 4 percent from producer to retailer because of evaporation. The latter loss does not affect the nutritional value of the eggs. 3/ Factor for obtaining edible weight from round weight is 0.45. Factor for obtaining dressed weight from round weight is 0.70. 4/ In terms of malt equivalent. 5/ Chocolate liquor equivalent (53 percent fat content).

Table 7--Net content and approximate servings per container for various canned foods 1/

Product	Container size	Net weight or volume	Cups or pieces	Servings per container	Serving size
Fruits:					
Apples; applesauce; berries; cherries; grapes; grapefruit and orange sections; fruit cocktail; fruits for salad; sliced peaches; pears; pineapple, chunks, crushed, tidbits	No. 8Z tall	8½ -8-3/4 oz.	1 cup	2	½ cup
	No. 303	16 - 17 oz.	1-3/4 - 2 cups	4	½ cup
	No.2	1 lb. 4 oz.	2¼ -2½ cups	5	½ cup
	No. 2½	1 lb. 13 oz.	3¼ -3½ cups	7	½ cup
	No. 10	6 lb. 2 oz. to 6 lb. 12 oz.	12 - 13 cups	25	½ cup
Apricots, whole, medium size	No. 303	16 - 17 oz.	8 - 14	4	2 - 3 apricots
	No. 2½	1 lb. 13 oz.	15 - 18	7	2 - 3 apricots
	No. 10	6 lb. 10 oz.	50 - 60	25	2 - 3 apricots
Apricots, halves, medium size	No. 8Z tall	8-3/4 oz.	6 - 12	2	3 - 5 halves
	No. 303	16 - 17 oz.	12 - 20	4	3 - 5 halves
	No. 2½	1 lb. 13 oz.	26 - 35	7	3 - 5 halves
	No. 10	6 lb. 10 oz.	95 - 130	25	3 - 5 halves
Peaches, halves; pears, halves	No. 303	16 - 17 oz.	6 - 10	3	2 medium halves
	No. 2½	1 lb. 13 oz.	7 - 12	7	1 large half
	No. 10	6 lb. 10 oz.	45 - 65	25	2 medium halves
Pineapple, slices	No. 1 flat	9 oz.	4	2	2 slices
	No. 2	1 lb. 4 oz.	10	5	2 slices
	No. 2½	1 lb. 14 oz.	8	8	1 large slice
	No. 10	6 lb. 12 oz.	28 - 50	25	1 large or 2 small slices
Plums, prunes	No. 8Z tall	8-3/4 oz.	7 - 9	2	2 - 3 plums
	No. 303	16 - 17 oz.	10 - 14	4	2 - 3 plums
	No. 2½	1 lb. 14 oz.	12 - 20	7	2 - 3 plums
	No. 10	6 lb. 10 oz.	40 - 60	25	2 - 3 plums
Figs	No. 8Z tall	8 -9 oz.	6 - 12	2	3 - 4 figs
	No. 303	16 - 17 oz.	12 - 20	4	3 - 4 figs
	No. 2½	1 lb. 14 oz.	18 - 24	7	3 - 4 figs
	No. 10	7 lb.	70 - 90	25	3 - 4 figs
Cranberry sauce	No. 6 - 8Z	6 - 8 oz.	3/4 - 1 cup	4	¼ cup
	No. 300	1 lb.	2 cups	8	¼ cup
	No. 10	7 lb. 5 oz.	12 - 13 cups	50	¼ cup
Olives, ripe 2/	No. 8Z tall	4½ oz.	--	--	3 olives
	No. 1 tall	9 oz.	--	--	3 olives
	Quart olive	1 lb. 2 oz.	--	--	3 olives
	No. 10	4 lb. 2 oz.	--	--	3 olives
Vegetables:					
Asparagus cuts; beans, green and wax, kidney, lima, beets; carrots; corn; hominy; okra; onions; peas; peas and carrots; blackeye peas; pumpkins; sauerkraut; spinach and other greens; squash; succotash; sweetpotatoes 3/; tomatoes; mixed vegetables; potatoes, white, cut, sliced	No. 8Z tall	8 - 8½ oz.	1 cup	2	½ cup
	No. 2 vacuum	12 oz.	1¼ - 1-3/4 cups	4	½ cup
	No. 303	16 - 17 oz.	2 cups	4	½ cup
	No. 2	1 lb. 4 oz.	2¼ - 2½ cups	5	½ cup
	No. 2½	1 lb. 13 oz.	3¼ - 3½ cups	7	½ cup
	No. 10	6 lb. 2 oz to 6 lb. 12 oz.	12 - 13 cups	25	½ cup
Asparagus spears, medium size	No. 1 picnic	10½ oz.	9 - 12 spears	2	4 - 6 spears
	Variable	14½ - 16 oz.	16 - 28 spears	3	4 - 6 spears
	No. 2	1 lb. 3 oz.	20 - 30 spears	5	4 - 6 spears
	No. 5 squat	4 lb. 4 oz.	115 - 145 spears	25	4 - 6 spears
Potatoes, white, peeled, whole, small	No. 303	16 - 17 oz.	8 - 12	4	2 - 3 potatoes
	No. 10	6 lb. 6 oz.	55 - 65	25	2 - 3 potatoes
Beans, baked with pork in sauce	No. 8Z short	8-3/4 oz.	1 cup	1 - 2	½ - 3/4 cup
	No. 300	1 lb.	1-3/4 cups	3 - 4	½ - 3/4 cup
	Jumbo	1 lb. 10 oz.	3 cups	4 - 6	½ - 3/4 cup
	No. 10	6 lb. 14 oz.	12 - 13 cups	16 - 25	½ - 3/4 cup

See footnotes at end of table.

Continued--

Table 7--Net content and approximate servings per container for various canned foods 1/--Continued

Product	Container size	Net weight or volume	Cups or pieces	Servings per container	Serving size
Vegetables--Cont.					
Mushrooms 2/	No. 2Z	2 oz.	1/3 cup	1	1/3 cup
	No. 4Z	4 oz.	2/3 cup	2	1/3 cup
	No. 8Z	8 oz.	1½ cups	4	1/3 cup
	No. 10	4 lb. 4 oz.	12 - 13 cups	36	1/3 cup
Pimentos, peppers, red sweet	--	2 oz.	¼ cup	--	--
	No. 4Z	4 oz.	½ cup	--	--
	No. 7Z	7 oz.	1 cup	--	--
	No. 10	6 lb. 13 oz.	12 - 13 cups	--	--
Juices:					
Apples; cherry; cranberry; grape, grapefruit, grapefruit-orange, loganberry, nectars, orange, pineapple, prune, tangerine, carrot, sauerkraut, tomato, vegetable, vegetable cocktail	No. 6 - 8Z tall	6 - 8 oz.	3/4 - 1 cup	1 - 2	4 - 6 oz.
	No. 211 cylinder	12 fl. oz.	1½ cups	3	4 oz.
	No. 211 cylinder	12 fl. oz.	1½ cups	2	6 oz.
	--	1 pint	2 cups	4	4 oz.
	--	1 pint	2 cups	3	6 oz.
	No. 2	1 pt. 2 fl. oz.	2¼ - 2½ cups	5	4 oz.
	No. 2	1 pt. 2 fl. oz.	2¼ - 2½ cups	3	6 oz.
	No. 2 cylinder	1 pt. 7 fl. oz.	3 cups	6	4 oz.
	No. 2 cylinder	1 pt. 7 fl. oz.	3 cups	4	6 oz.
	--	1 quart	4 cups	8	4 oz.
	--	1 quart	4 cups	5	6 oz.
	No. 3 cylinder	1 qt. 14 fl. oz.	5-3/4 cups	12	4 oz.
	No. 3 cylinder	1 qt. 14 fl. oz.	5-3/4 cups	8	6 oz.
	No. 10	3 quarts	12 cups	24	4 oz
	No. 10	3 quarts	12 cups	16	6 oz.
Lemons and limes	No. 6Z	5½ - 6 oz.	3/4 cup	--	--
Soups:					
Condensed	No. 1 picnic	10½ - 12 oz.	1¼ cups (2½ cups prepared soup)	3	3/4 cup
	No. 3 cylinder	3 lb. 2 oz.	5-3/4 cups (11½ cups prepared soup)	12 - 16	3/4 cup
Ready-to-serve	No. 8Z tall	8 fl. oz. indv.	1 cup	1	1 cup
	No. 1 picnic	12 fl. oz.	1½ cups	2	3/4 cup
	No. 303	15 fl. oz.	2 cups	3	3/4 cup
	No. 2½	1 pt. 5 fl. oz. to 1 pt. 9 fl. oz.	2½ - 3 cups	4	3/4 cup
	No. 10	3 quarts	12 cups	20	3/4 cup
Meat and poultry: 4/					
Chili con carne; chili con carne with beans	No. 300	15 - 16 oz.	2 cups	3 - 4	½ - 2/3 cup
	--	1½ lb.	3 cups	4 - 5	½ - 2/3 cup
	No. 10	6 lb. 12 oz.	12 - 13 cups	18 - 24	½ - 2/3 cup
Corned beef	--	12 oz.	--	4	3 oz.
	--	6 lb.	--	30	3 oz.
Corned beef hash	--	8 oz.	1 cup	1 - 2	½ - 2/3 cup
	--	1 lb.	2 cups	3 - 4	½ - 2/3 cup
	--	1½ lb.	3 cups	5 - 6	½ - 2/3 cup
	--	5 lb. 8 oz. to 5 lb. 14 oz.	12 - 13 cups	18 - 24	½ - 2/3 cup
Deviled ham	--	2¼ - 3 oz.	1/3 cup	3 - 4	1½ tbsp.
	--	4½ oz.	½ cup	5 - 6	1½ tbsp.
Deviled meat; potted meat; meat spreads	--	2 - 3¼ oz.	1/3 cup	3 - 4	1½ tbsp.
	--	5½ oz.	3/4 cup	8	1½ tbsp.
Luncheon meat	--	12 oz.	--	4	2 slices
	--	6 lb.	--	32	(3½ x 3/4 x 3/8 in.)
Tongue; beef, lamb, pork	--	6 oz.	--	2	3 oz.
	--	12 oz.	--	4	3 oz.
	--	1 - 2 lb.	--	5 - 10	3 oz.

See footnotes at end of table.

Continued--

Table 7--Net content and approximate servings per container for various canned foods 1/--Continued

Product	Container size	Net weight or volume	Cups or pieces	Servings per container	Serving size
Meat and poultry: 4/--Cont.					
Hams, whole:					
Small	--	1½ - 4 lb.	--	3 - 4 per pound	2 slices (4 x 3 x 1/8 in.)
Medium	--	6 - 8 lb.	--		
Large	--	9 - 14 lb.	--		
Poultry, boned, chicken and turkey	--	5 - 6 lb.	--	2	3 oz.
	--	12 oz.	--	4	3 oz.
	--	1 lb. 14 oz.	--	10	3 oz.
	--	2 lb. 3 oz.	--	12	3 oz.
Sausage, pork, and frankfurters	--	8 oz.	11 - 12	3 - 4	3 sausages
	--	12 oz.	8 - 9 large	4	2 sausages
Stew, beef and lamb	--	1 lb.	2 cups	2	3/4 cup
	--	1 lb. 4 oz.	2½ cups	3	3/4 cup
	--	1½ lb.	3 cups	4	3/4 cup
Vienna sausage	--	4 oz.	8 - 10	2	4 - 5 sausages
	--	9 oz.	16 - 20	4	4 - 5 sausages
Fish and seafood: 4/					
Clams	--	7½ oz.	1 cup	2	½ cup
Crab meat	--	5½ - 7½ oz.	3/4 - 1 cup	2 - 3	1/3 - ½ cup
Mackerel	--	1 lb.	2 cups	4	½ cup
Oysters	--	8 oz.	1 cup	2	½ cup
Salmon	--	7-3/4 oz.	1 cup	2	½ cup
	--	1 lb.	2 cups	4	½ cup
Sardines	--	3½ - 4 oz.	6 - 10	1½	5 - 7 sardines
Sardines, pilchards	--	15 oz.	6 - 7 large	4	1½ sardines
Shrimp 2/	--	4½ - 6½	25 - 35	3 - 4	10 - 12 medium size 6 - 8 jumbo size
Tuna in oil	--	6 - 7 oz.	1 cup	2	½ cup
	--	13 oz.	1-3/4 cups	4	½ cup
Infant foods: 4/					
Vegetables and fruits:					
Infant, strained and homogenized	--	4-3/4 oz.	½ cup	--	--
	--	6½ oz.	3/4 cup	--	--
Junior, chopped	--	8 oz.	7/8 cup	--	--
Meats:					
Infant, strained	--	3½ oz.	7 tablespoons	--	--
Junior, chopped	--	3½ oz.	7 tablespoons	--	--
Soups:					
Infant	--	4-3/4 oz.	½ cup	--	--
Junior	--	8 oz.	7/8 cup	--	--

-- = Not applicable.

1/ The net weight of various foods in the same size can or glass jar will vary with the density of the food. For the most part only minimum weights are shown in the table. Cups or pieces and servings in the table are approximate, and sizes of servings are given in rounded numbers to furnish a practical guide.

2/ Declared as drained weight. (The number of pieces per container varies as to size of the piece.)

3/ Sweetpotatoes also come in 1 pound 2 ounce to 1 pound 7 ounce cans.

4/ Contents usually declared as net weight. Container size is variable, strained and homogenized foods for infants, and chopped junior foods, come in small jars and jars suitable for the smaller servings used.

Source: National Canners Association.

Table 8--Whole milk equivalents and milk solids factors

Commodity	Milk solids content 1/			Milk solids content 2/								Factors for obtaining whole milk equivalent in terms of-- 3/	
	Fat solids	Nonfat solids	Total milk solids	Milkfat		Milk solids nonfat		Total milk solids	Milkfat in solids	Moisture		Fat solids 4/	Nonfat solids 5/
				Max.	Min.	Max.	Min.	Min.	Min.	Max.	Min.		
	1	2	3	4	5	6	7	8	9	10	11	14	15
	Percent											Pounds	
Whole milk from farm--wholesale	3.67	8.99	12.66	--	--	--	--	--	--	--	--	1.000	1.000
Milk from plant--retail	3.40	8.99	12.39	--	3.25	--	8.25	--	--	--	--	.926	1.000
Fresh milk concentrate	10.50	25.92	36.42	--	7.50	--	--	25.50	--	--	--	2.838	3.007
Flavored milk drinks	1.37	--	--	--	--	--	--	--	--	--	--	.373	1.017
Flavored milk	3.40	--	--	--	--	--	--	--	--	--	--	.568	.974
Skim milk:													
Regular	.36	9.05	9.41	0.50	--	--	8.25	--	--	--	--	.098	1.050
Solids added	.55	9.95	10.50	--	--	--	--	--	--	--	--	.150	1.154
Lowfat milk	1.88	9.04	11.58	2.0	.50	--	8.25	--	--	--	--	.512	1.049
Cultured buttermilk from modified skim milk	.99	--	--	--	--	--	--	--	--	--	--	.270	1.287
Half and half:													
Regular	11.00	--	--	18.0	10.50	--	--	--	--	--	--	3.000	.909
Modified	11.50	9.00	20.50	--	--	--	--	--	--	--	--	3.108	1.044
Cream:													
Sour (cultured)	17.20	--	--	--	18.00	--	--	--	--	--	--	4.687	.986
Sour (acidified)	--	--	--	--	18.00	--	--	--	--	--	--	5.000	.986
Light	18.20	--	--	--	18.00	--	--	--	--	--	--	4.959	.852
Medium	--	--	--	--	--	--	--	--	--	--	--	5.405	.832
Light whipping	30.00	6.26	36.26	--	3.00	--	--	--	--	--	--	8.108	.726
Heavy	33.90	--	--	--	3.60	--	--	--	--	--	--	9.237	.665
Sweetened	40.00	5.37	45.37	--	--	--	--	--	--	--	--	10.811	.623
Dry	50.00	49.20	99.20	--	--	--	--	--	--	--	--	13.514	5.708
Plastic	80.00	1.10	81.10	--	--	--	--	--	--	--	--	21.622	.128
Butter:													
Domestic	80.30	1.00	81.30	--	8.00	--	--	--	--	--	--	21.702	.116
Export	--	--	--	--	--	--	--	--	--	--	--	22.297	.174
Export	--	--	--	--	--	--	--	--	--	--	--	22.568	.174
Butteroil and anhydrous milk fat	99.8	.10	99.90	--	--	--	--	--	--	--	--	26.973	.012
Buttermilk	--	--	--	--	--	--	--	--	--	--	--	.135	1.021
Dry buttermilk	5.30	91.90	97.20	--	4.50	--	--	--	--	40.00	--	1.433	10.661
Condensed or evaporated buttermilk	1.50	26.40	27.90	--	--	--	--	--	--	--	--	.405	3.063
Condensed milk:													
Sweetened	8.50	19.50	28.00	--	8.50	--	--	28.00	--	--	--	2.297	2.262
Unsweetened	7.90	18.00	25.90	--	--	--	--	--	--	--	--	2.135	2.088
Condensed skim milk, sweetened or unsweetened	.20	29.80	30.00	--	--	--	--	--	--	--	--	.054	3.457

See footnotes at end of table.

Continued--

Table 8--Whole milk equivalents and milk solids factors--Continued

Commodity	Milk solids content 1/			Milk solids content 2/								Factors for obtaining whole milk equivalent in terms of-- 3/	
	Fat solids	Nonfat solids	Total milk solids	Milkfat		Milk solids nonfat		Total milk solids	Milkfat in solids	Moisture		Fat solids 4/	Nonfat solids 5/
				Max.	Min.	Max.	Min.	Min.	Min.	Max.	Min.		
	1	2	3	4	5	6	7	8	9	10	11	14	15
	Percent											Pounds	
Evaporated milk	7.90	18.00	25.90	--	7.50	--	--	25.50	--	--	---	2.135	2.088
Dry whole milk	26.50	71.00	97.50	--	2.60	--	--	--	--	--	---	7.162	8.237
Nonfat dry milk:													
Regular	.80	91.20	97.00	1.50	--	--	--	--	--	0.50	---	.216	11.160
Instant	.70	95.30	96.00	--	--	--	--	--	--	--	---	.189	11.056
Yogurt	1.66	8.98	10.64	--	--	--	--	--	--	--	---	.452	2.447
Casein	--	--	--	--	--	--	--	--	--	--	--	.081	10.731
Eggnog	7.00	--	--	--	--	--	--	--	--	--	--	--	--
Cheddar cheese:													
Natural legal comp.	--	--	--	--	--	--	--	--	50.00	39.00	--	8.243	3.538
Natural commercial comp.	--	--	--	--	--	--	--	--	--	--	--	8.703	3.573
Pasteurized process cheese	--	--	--	--	--	--	--	--	50.00	40.00	--	8.108	3.480
Pasteurized process cheese food	--	--	--	--	23.00	--	--	--	--	44.00	--	6.216	3.828
Pasteurized process cheese spread	--	--	--	--	20.00	--	---	--	--	60.00	44.00	5.405	2.320
Swiss cheese:													
Natural legal comp.	--	--	--	--	--	--	--	--	43.00	41.00	--	6.865	3.898
Natural commercial comp.	--	--	--	--	--	--	--	--	--	--	--	7.568	3.828
Pasteurized process cheese	--	--	--	--	--	--	--	--	43.00	42.00	--	7.270	3.840
Italian types, mozzarella:													
Scamonza	--	--	--	--	--	--	--	--	45.00	60.00	52.00	6.703	3.503
Hard, grating	--	--	--	--	--	--	--	--	32.00	34.00	--	6.351	5.046
Blue mold, domestic type	--	--	--	--	--	--	--	--	50.00	46.00	--	8.243	3.422
Cream cheese, natural	37.00	12.00	49.00	--	33.00	--	--	--	--	55.00	--	10.000	1.392
Lowfat cottage cheese	--	--	--	2.00	.50	--	--	--	--	82.50	--	--	--
Cottage cheese curd, dry	.30	20.70	21.00	--	--	--	--	--	--	80.00	--	.082	2.401
Creamed cottage cheese	4.20	17.50	21.70	--	4.00	--	--	--	--	80.00	--	1.135	2.030
Whey, unseparated, from mfg. of cheddar cheese	.40	6.60	7.00	--	--	--	--	--	--	--	--	.108	.766
Dry whey	1.20	94.30	95.50	1.25	--	--	--	--	--	5.00	--	.324	10.940
Lactose from separated cheese whey (98 percent lactose)	--	99.75	99.75	--	--	--	--	--	--	--	--	--	11.572
									Food solids per gallon	Weight per gallon			
									Min.	Min.			
									12	13			
Ice cream	10.00	11.00	21.00	--	--	--	--	--	--	--		2.703	1.276
	12.00	10.00	22.00	--	--	--	--	--	--	--		3.243	1.160

See footnotes at end of table.

Continued--

Table 8--Whole milk equivalents and milk solids factors--Continued

Commodity	Milk solids content 1/			Milk solids content 2/								Factors for obtaining whole milk equivalent in terms of-- 3/	
	Fat solids	Nonfat solids	Total milk solids	Milkfat		Milk solids nonfat		Total milk solids	Milkfat in solids	Moisture		Fat solids 4/	Nonfat solids 5/
				Max.	Min.	Max.	Min.	Min.	Min.	Max.	Min.		
	1	2	3	4	5	6	7	8	9	10	11	14	15
	Percent											Pounds	
									Food solids per gallon Min. 12	Weight per gallon Min. 13			
Ice cream--Continued	14.00	9.00	23.00	--	10.00	--	6.00	20.00	1.6 lb.	4.5 lb.		3.784	1.044
	16.00	8.00	24.00	--	--	--	--	--	--	--		4.324	.928
Ice milk	2.00	14.00	16.00	--	--	--	--	--	--	--		.541	1.624
	4.00	12.00	16.00	7.00	2.00	--	--	11.00	1.3 lb.	--		1.081	1.392
	6.00	11.00	17.00	--	--	--	--	--	--	--		1.622	1.276
Fruit sherbet	2.00	2.00	4.00	2.00	1.00	--	--	2.00 6/5.00	--	6.0 lb.		.541	.232

-- = Not applicable.

1/ Based on Federal Food and Drug Standards of Identity and U.S. Average Factory Production Data. Industry averages are from table 45 Federal Milk Order Market Statistics for 1975, Stat. Bull. 554, Agr. Mktg. Serv., U.S. Dept. Agr.

2/ Federal Food and Drug Standards of Identity.

3/ These factors are based upon total conversion of the fat or solids not fat and do not represent actual yields attainable. For computing whole milk equivalents from milk of composition other than that of the single test (3.7 fat and 8.62 solids--not fat) shown, use the following: (1) Fat in the product ÷ fat in the milk = whole milk equivalent in terms of fat as in column 5. Example--to compute the whole milk equivalent at 4.0 percent fat of 18 percent cream: 0.18 ÷ 0.04 = 4.50. (2) (1 - fat in the product) ÷ (1 fat in the milk) x nonfat solids in the milk = nonfat solids in the product. Example--for 18 percent cream: (1 - 0.18) ÷ (1 - 0.04) provides the whole milk equivalent in terms of nonfat solids as in column 6. (3) To determine nonfat solids equivalents for mellorine type frozen desserts, use the factors for ice cream mixes of equivalent fat percentages.

4/ Computed from column 1 on basis of whole milk containing 3.7 percent fat.

5/ Computed from column 2 on basis of whole milk containing 8.62 percent solids--nonfat.

6/ Maximum total milk solids in fruit sherbet.

Table 9--Whole milk, skim milk, buttermilk, and whey equivalents

Commodity	Conversion to--	Factors
Skim milk cheese	Fluid skim milk	16.0
Cottage, pot, and bakers' cheese	do.	7.14
Nonfat dry milk	do.	11.3
Dry casein	do.	35.7
Condensed and evaporated skim milk, sweetened and unsweetened	do.	3.0
Concentrated skim milk (for animal feed)	do.	3.0
Dry buttermilk	Fluid buttermilk	11.0
Condensed or evaporated buttermilk	do.	3.0
Dry whey	Fluid whey	13.5
Dry lactose	do.	25.0
Butter	Fluid whole milk	22.8
Whole milk cheese	do.	10.0
Evaporated milk	do.	2.14

Table 10--Dairy products: Net weight of standard units

Commodity	Unit	Pounds per unit 40°F. 1/	Pounds per unit 50°F. 1/	Pounds per unit 68°F. 1/
Whole milk--3.7 fat--8.62 S.N.F.	Gallon	8.62	8.60	8.58
Milk, standardized--3.5 fat--8.64 S.N.F.	do.	8.62	8.61	8.58
Skim milk, regular	do.	8.64	8.63	8.61
Skim milk, modified	do.	8.68	8.67	8.65
Cultured buttermilk	do.	8.66	8.66	8.62
Half and half, regular	do.	8.56	8.54	8.50
Chocolate flavored milk	do.	8.81	8.80	8.78
Chocolate flavored drink	do.	8.81	8.80	8.78
Cream, 18%	do.	8.52	8.50	8.45
20%	do.	8.51	8.49	8.43
36%	do.	8.41	8.37	8.29
40%	do.	8.38	8.35	8.25
Evaporated milk 2/	48/14-1/2 oz.(cans)	3/43.50	--	--
Condensed milk, sweetened	48/14 oz. (cans)	42.00	--	--
	48/15 oz. (cans)	45.00	--	--
Ice cream - 10-12% fat	Gallon	--	--	4.50
- 12% mix liquid	do.	--	--	9.00
Ice milk - 4% fat	do.	--	--	4.50
- 4% mix (liquid)	do.	--	--	9.00
Fruit sherbet	do.	--	--	6.00

-- = Not applicable.

1/ To convert pounds per gallon to kilo per liter, multiply indicated figure by 0.4536 and divide by 3.785 (number of litters in 1 gallon). 2/ Weights of other can sizes: evaporated milk; 6 ounces, 6.75 pounds. Weight per gallon of liquid ice cream mix and similar products at 68° can be obtained by use of the following formula:

$$\text{Specific gravity} = \frac{100}{\frac{\%\text{Fat}}{0.93} + \frac{\%\text{Sugar} + \%\text{Nonfat milk solids}}{1.58} + \%\text{Water}}$$

Specific gravity x 8.34 = Weight of 1 gallon of product. 3/ To convert pounds to kilograms, multiply pounds by 0.4536.

Meat and Meat Products

Conversion factors for meats and meat products are used to calculate the dressed weight equivalent of bone-in cuts, boneless meat, and of cooked, prepared, or canned meat items. The fundamental basis for meat conversion factors is the relation between the amount of usable meat in each cut or carcass and the amount of waste in bone, fat, tendons, ligaments, and inedible trimmings. Factors for converting boneless beef into dressed weight equivalent were developed from data on the yield of boneless meat from various grades of carcasses. The cutting was under commercial boning practices.

Dressed meat equivalent (carcass weight) for beef, veal, lamb and mutton, and pork is defined as follows:

Beef: Weight of the dressed carcass with kidney and suet in.
Veal: Weight of dressed carcass with hide off and kidney and suet in.
Lamb and mutton: Weight of dressed carcass with kidney and suet in.
Pork: Weight of the dressed carcass with head off and kidney and leaf fat out.

Conversion factors for all formulated meat products are based upon the weight of boneless, and in the case of pork, skinless meat in each unit of finished product. Formulas for certain products, such as franks or weiners, may vary from the factors shown depending upon relative prices and availability of different types of meat and edible offal, and processing methods used.

Table II--Cattle, calves, sheep and lambs, and hogs commercially slaughtered: Average live weight and dressing yields 1966-75 and 1976

Species	Live weight		Dressing yields	
	Average 1966-75	1976 1/	Average 1966-75	1976
	- - - - Pounds - - - -		- - - - Percent - - - -	
Cattle	1,024	1,018	59.0	59.1
Calves	247	267	56.3	56.7
Sheep and lambs	104	109	49.2	49.5
Hogs	240	238	2/70.4	2/71.4

1/ Cattle and calf weights for 1976 were affected by the large number of nonfed cattle marketed.
2/ Dressing yield for packer-style, pork carcass, federally inspected slaughter. To obtain shipper-style pork carcass, add 7 percent.

Table 12--Beef: Percentage yields of bone-in cuts and boneless meat

Carcass and wholesale cuts	Yield of untrimmed bone-in wholesale cuts		Yield of trimmed boneless meat 1/	
	Prime, Choice, and Good 2/	Canner and Cutter	Prime, Choice, and Good 2/	Canner and Cutter
	Percent			
Carcass, whole	100.0	100.0	69.8	73.3
Forequarter	52.2	52.1	71.7	72.0
Rib	9.6	8.3	58.1	58.9
Chuck, square cut	27.2	29.4	77.0	77.7
Plate	8.3	7.4	72.6	73.5
Brisket	4.2	3.5	74.6	71.1
Foreshank	2.9	3.6	60.5	53.4
Hindquarter	47.8	47.9	67.7	74.8
Round	22.7	25.0	77.1	78.7
Sirloin	8.8	10.1	74.6	77.1
Short loin	8.2	6.9	66.7	70.1
Flank	5.7	4.8	51.5	74.4
Kidney knob	2.5	1.2	--	--

-- = Not applicable.
1/ All cuts trimmed of fat exceeding that amount normally left on retail cuts (1/4 to 1/2 inch).
2/ Based on cattle representing the full range of yield grades but with an average of roughly yield Grade 3.

Table 13--Beef: Boneless to bone-in conversion factors

Carcass and wholesale cuts	Factors for converting trimmed boneless meat to--			
	Untrimmed bone-in equivalents		Trimmed bone-in equivalents	
	Prime, Choice, and Good 1/	Canner and Cutter	Prime, Choice, and Good 1/	Canner and Cutter
Carcass, whole	1.43	1.36	1.43	1.36
Forequarter	1.39	1.39	1.31	1.38
Rib	1.72	1.70	1.60	1.69
Chuck, square cut	1.30	1.29	1.26	1.29
Plate	1.38	1.36	1.18	1.32
Brisket	1.34	1.41	1.14	1.35
Foreshank	1.65	1.87	1.65	1.86
Hindquarter	1.48	1.34	1.25	1.27
Round	1.30	1.27	1.20	1.25
Sirloin	1.34	1.30	1.18	1.24
Short loin	1.50	1.43	1.15	1.29
Flank	1.94	1.34	1.07	1.08

1/ Based on cattle representing the full range of yield grades but with an average of roughly yield Grade 3.

Table 14--Veal and calf: Percentage yield of bone-in cuts and boneless meat plus boneless to bone-in conversion factors

Carcass and wholesale cuts	Yield of bone-in wholesale cuts		Yield of trimmed boneless meat 1/		Factors for converting boneless meat to untrimmed bone-in equivalent	
	Choice and Good	Standard, Utility, and Cull	Choice and Good	Standard, Utility, and Cull	Choice and Good	Standard, Utility, and Cull
	Percent					
Carcass, whole	100.0	100.0	68.5	69.5	1.46	1.44
Foresaddle	48.6	49.7	70.4	69.3	1.42	1.45
Chuck	26.1	27.6	73.5	72.8	1.36	1.38
Breast	14.3	14.3	62.8	62.6	1.59	1.62
Hotel rack, 7 rib	8.2	7.8	73.8	69.3	1.35	1.45
Hindsaddle	51.4	50.3	66.6	70.1	1.51	1.44
Leg, includes sirloin	36.4	38.8	72.8	73.5	1.38	1.37
Loin	7.0	6.4	73.3	69.8	1.36	1.45
Flank	4.8	3.4	53.4	68.5	1.87	1.48
Kidney knob	3.2	1.7	--	--	--	--

-- = Not applicable.

1/ All cuts trimmed of fat exceeding that amount normally left on retail cuts (½ to ½ inch).

Table 15--Fresh pork: Percentage yields of bone-in cuts and boneless meat, plus boneless to bone-in conversion factors 1/

Carcass and wholesale cuts	Approximate percentage of live weight	Yield of bone-in trimmed wholesale cuts	Yield of boneless meat from wholesale cuts	Factors for converting boneless meat to bone-in equivalents
	Percent			
Packer-dressed carcass	71.00	100.00	67.0	1.49
Boneless, skinless meat	47.57	67.00	100.0	1.00
Hams:				
Skinned, bone-in	16.96	23.89	61.5	1.63
Skinned, semi-boneless	13.06	18.40	77.0	1.30
Skinless, boneless	10.43	14.69	100.0	1.00
Shoulders:				
Picnics:				
Skinned, bone-in	6.90	9.72	70.5	1.42
Skinless, boneless	4.86	6.85	100.0	1.00
Butts, skinless:				
Bone-in (Boston)	5.15	7.25	70.0	1.43
Boneless	3.60	5.08	100.0	1.00
Loins:				
Bone-in	14.16	19.94	30.0	3.33
Boneless	4.25	5.98	100.0	1.00
Bellies:				
Slab, skin on	12.91	18.18	93.0	1.08
Slab, skin off	12.01	16.91	100.0	1.00
Jowls (bacon squares)	1.10	1.55	--	--
Spareribs	2.76	3.89	--	--
Feet, front	0.60	0.85	--	--
Tails	0.20	0.28	--	--
Neckbones	0.90	1.27	--	--
Trimmings:				
80-percent lean	0.71	1.00	--	--
50-percent lean	0.96	1.35	--	--
Fat, skin, etc.	6.20	8.73	--	--
Shrink and loss	1.49	2.10	--	--

-- = Not applicable.
1/ Developed in cooperation with Agr. Mktg. Serv., U.S. Dept. Agr.

Table 16--Lamb: Percentage yields of bone-in cuts and boneless meat plus boneless to bone-in conversion factors 1/

Wholesale cuts	Carcass weight	Boneless meat average 2/	Factors for converting trimmed boneless meat to bone-in equivalent
	Percent		
Carcass, whole 3/	100.0	65.8	1.52
Foresaddle, whole	51.4	65.9	1.52
Breast, including shank	16.4	59.9	1.67
Chuck	27.2	70.2	1.42
Hotel rack	7.8	63.5	1.57
Hindsaddle, whole	48.6	65.7	1.52
Leg	31.0	69.0	1.45
Loin, including flank and kidney	17.6	60.3	1.66

1/ Based on Prime, Choice, and Good yield Grade B carcasses.
2/ USDA boning practice--cuts trimmed to ¼ inch of fat.
3/ Pluck out--heart, lungs, trachea, and esophagus have been removed.

Table 17--Edible offal: Relationship between procurement and product weights

Product	Factors for converting to equivalent weight of edible offal 1/
Brains	1
Cheek meat	1
Head meat	1
Heart	1
Kidneys 2/	1
Liver	1
Stomach or tripe	1
Sweetbreads	1
Tail	1
Tongue	1

1/ Edible offal is defined as all edible parts from cattle, calves, hogs, and sheep that are not included in the carcass weight as carried in reported meat production by the U.S. Dept. Agr.
2/ Kidneys are usually left in beef, veal, lamb, and mutton carcasses, but they are classified as edible offal.

Table 18--Choice beef: Retail cut yields as percent of carcass weight by yield grades

Retail cut	Yield Grade				
	1	2	3	4	5
	Percent				
Rump, boneless	3.7	3.5	3.3	3.1	2.9
Inside round	4.9	4.5	4.1	3.7	3.3
Outside round	4.8	4.6	4.4	4.2	4.0
Round tip	2.7	2.6	2.5	2.4	2.3
Sirloin	9.1	8.7	8.3	7.9	7.5
Short loin	5.3	5.2	5.1	5.0	4.9
Blade chuck	9.9	9.4	8.9	8.4	7.9
Rib, short, 7 inches	6.3	6.2	6.1	6.0	5.9
Chuck arm, boneless	6.4	6.1	5.8	5.5	5.2
Brisket, boneless	2.5	2.3	2.1	1.9	1.7
Flank, steak	.5	.5	.5	.5	.5
Lean trim	12.3	11.3	10.3	9.3	8.3
Ground beef	13.3	12.2	11.1	10.0	8.9
Kidney	.3	.3	.3	.3	.3
Total salable retail cuts	82.0	77.4	72.8	68.2	63.6
Fat	7.6	12.7	17.8	22.9	28.0
Bone	10.4	9.9	9.4	8.9	8.4
Total	100.0	100.0	100.0	100.0	100.0

Table 19--Beef, cured, corned, pickled, dried, or dehydrated: Relationship between procurement and carcass weights

Product	Factors for determining equivalent carcass weight
Boneless beef:	
Cured, corned, or pickled: 1/	
Brisket or corned beef, unspecified	1.12
Plate or family beef	1.25
Dried or chipped beef, sliced or unsliced	1.94
Dehydrated beef	4.12

1/ Based on 20-percent gain in pickling brisket from fresh weight, and 10-percent gain in pickling plate.

Table 20--Meat and meat food products, fresh or frozen: Factors for converting to equivalent carcass weight 1/

Product	Beef	Pork	Other red meat	Poultry	Variety meats
Cured:					
Beef briskets	1.34	--	--	--	--
Beef-other	1.36	--	--	--	--
Pork	--	1.16	--	--	--
Other meats	--	--	1.52	--	--
Smoked or dried or cooked:					
Hams-bone-in	--	1.00	--	--	--
Hams-bone-in, water added	--	.91	--	--	--
Hams-semi-boneless	--	1.30	--	--	--
Hams-semi-boneless, water added	--	1.18	--	--	--
Hams-boneless	--	1.63	--	--	--
Hams-boneless, water added	--	1.48	--	--	--
Hams-sectioned and formed	--	1.63	--	--	--
Hams-sectioned and formed, water added	--	1.48	--	--	--
Hams-dry cured	--	1.25	--	--	--
Pork-regular	--	1.16	--	--	--
Pork-water added	--	1.05	--	--	--
Bacon	--	1.03	--	--	--
Beef, cooked	1.7	--	--	--	--
Beef, dried	1.94	--	--	--	--
Other smoked, dried or cooked meat 2/	--	--	--	--	--
Sausage:					
Fresh beef	1.26	--	--	--	--
Fresh pork	--	1.39	--	--	--
Fresh other	.54	.69	--	--	0.07
Uncooked cured sausage	.54	.67	--	--	.07
Dried	1.36	1.12	--	--	--
Semi-dried	1.09	.82	--	--	--
Franks/weiners, regular retail	.54	.52	--	0.21	--
Franks/weiners, regular bulk	.54	.52	--	.21	--
Franks/weiners, with extenders, retail	.52	.51	--	.21	--
Franks/weiners, with extenders, bulk	.52	.51	--	.21	--
Franks/weiners, with variety meat, retail	.34	.30	--	.21	.30
Franks/weiners, with variety meat, bulk	.34	.30	--	.21	.30
Franks/weiners, with extenders and variety meats, retail	.29	.30	--	.21	.30
Franks, weiners with extenders and variety meats, bulk	.29	.30	--	.21	.30
Bologna-regular	.54	.52	--	.21	--
Bologna-with extenders	.52	.51	--	.21	--
Bologna-with variety meats	.34	.30	--	.21	.30
Bologna-with variety meats and extenders	.29	.30	--	.21	.30
Liver sausage and branschweiger	.27	.30	--	--	.50
Other	.34	.52	.03	.21	.10
Fresh/frozen product:					
Steaks, chops (chopped/formed)	1.36	--	--	--	--
Hamburger, ground beef	1.35	--	--	--	--
Other-fresh/frozen	1.35	--	--	--	--
Convenience foods (frozen and unfrozen):					
Pizza	.12	.04	--	--	--
Pies	.31	.03	--	--	--
Dinners	.16	.15	--	--	--
Entrees	.34	.37	--	--	--
Others	.20	.15	--	--	--
Miscellaneous meat product:					
Cured meat loaves	.54	.77	--	--	--
Nonspecific loaves	.34	.52	.03	.21	.10
Meat patties	.82	.07	--	.11	.05
Other formulated products	.50	.22	.03	.19	.09

-- = Not applicable.

1/ Based on product standards for processed items under Federal inspection and meat yield from carcasses provided by Agr. Mktg. Serv., U.S. Dept. Agr. 2/ Variable.

Table 21--Canned meat and meat food products: Factors for converting to equivalent carcass weight 1/

Canned meat products	Beef	Pork	Other red meats	Poultry	Variety meats
Luncheon meat	0.41	0.77	--	--	0.10
Chile con carne	.52	.01	--	0.02	--
Meat stew	.33	.01	--	--	--
Hash product	.67	--	--	--	--
Pasta meat product	.16	--	--	--	--
Canned hams:					
Under 3 lbs.	--	1.51	--	--	--
3-6 lbs.	--	1.51	--	--	--
Over 6 lbs.	--	1.51	--	--	--
Pork shoulder, picnics, and loins	--	1.38	--	--	--
Viennas	.33	.75	0.02	.21	--
Franks and weiners	.54	.52	--	.21	--
Miscellaneous sausage products	.34	.60	--	.21	.10
Deviled ham	--	1.55	--	--	--
Potted meat food products and spreads	.04	.15	--	.04	.80
Tamales	.30	--	--	--	--
Sliced dried beef	1.94	--	--	--	--
Chopped beef hamburgers	1.33	--	--	--	--
Vinegar pickled products	.27	1.12	--	--	--
Byproducts, other than pickled	--	--	--	--	.98
Corned beef	1.69	--	--	--	.07
Soup	.13	--	--	--	--
All other:					
With 20 percent or more meat	.27	.30	.02	--	.09
Less than 20 percent meat	.05	.06	.01	--	.005

-- = Not available.

1/ Based on product standards for processed items under Federal inspection provided by Animal and Plant Health Inspection Service and meat yields from carcasses provided by Agr. Mktg. Serv., U.S. Dept. Agr.

Table 22--Commercial meat and meat products imports: Factors for obtaining carcass weight equivalents

Product	Commodity number 1/	Factors
Beef:		
Fresh or chilled	106.1020	1.00
Frozen	106.1040	1.00
Boneless	106.1060	1.36
Sausage canned	107.2000	1.26
Sausage not canned	107.2520	1.26
Corned beef canned	107.4820 & 107.4840	1.79
Canned beef	107.5220 & 107.5240	1.90
Beef or veal, cured or pickled	107.4000 & 107.4500	1.79
Beef or veal, prepared or	107.5500	1.36
preserved, except	107.6020	1.36
sausage	107.6040	1.94
Veal:		
Fresh, chilled, or frozen	106.1080	1.00
Pork:		
Fresh or chilled	106.4020	1.00
Frozen	106.4040	1.00
Fresh sausage	107.1000	1.39
Canned sausage	107.1500	1.37
Hams and shoulders not cooked, canned, or boned	107.3020	1.00
Bacon not cooked	107.3040	1.03
Other prepared or preserved	107.3060	1.16
Canned hams and shoulders	107.3515 & 107.3525	1.51
Canned bacon	107.3540	1.03
Other canned	107.3560	1.39
Lamb, mutton, and goat: 2/		
Fresh, chilled, or frozen		
Lamb	106.3000	1.00
Mutton	106.2020	1.52
Goat	106.2040	1.64
Prepared and processed	107.7520	1.52
Other sausages and mixtures	107.2540 & 107.7540	
Beef		.54
Pork		.77
Edible offals	106.8000 & 106.8500 107.7000, and 107.7560	1.00

1/ Commodity numbers are from import schedule A, U.S. Dept. Comm.
2/ Most of the mutton and goat is boneless meat.

Table 23--Commercial meat and meat product exports: Factors for obtaining carcass weight equivalents

Product	Commodity numbers 1/	Factors
Beef:		
Fresh or chilled:		
With bone	106.1025	1.00
Without bone	106.1060	1.43
Retail cuts	107.3820	1.37
Canned	107.4200	.88
Other	107.4600	.79
Veal:		
Fresh or chilled	106.1080	1.00
Retail cuts	107.3840	1.06
Pork:		
Fresh or chilled		
Carcasses	106.4020	1.00
Hams and shoulders	106.4040	1.11
Other	106.4060	1.47
Retail cuts	107.3715	1.03
Canned	107.3725	1.46
Bacon	107.3740	1.03
Hams and shoulders	107.3750	1.30
Other	107.3770	1.16
Lamb and mutton:		
Fresh or chilled	106.2500	1.00
Goat:		
Fresh or chilled	106.5200	.08
Sausage and similar products	107.0100 & 107.0200	
Beef		.41
Pork		.66
Edible offal		.05
Other meat and edible offal:		
Fresh or chilled	107.6200	1.00
Canned and other	107.6400 & 107.6600	
Beef		.02
Pork		.08
Edible offal		.89
Edible offal:		
Beef:		
Tongues	106.8200	1.00
Livers	106.8400	1.00
Other	106.8600	1.00
Veal	106.8800	1.00
Sheep and lamb	106.9000	1.00
Pork:		
Livers	106.9200	1.00
Other	106.9400	1.00
Other	106.9600	1.00

1/ Commodity numbers are from export schedule B, U.S. Department of Commerce.

Table 24--Poultry: Average live weight and ready-to-cook yield, 1973-75 1/

Poultry	Average live weight				Yield, live to ready-to-cook 2/			
	1973	1974	1975	1973-75 weighted average	1973	1974	1975	1973-75 weighted average
	Pounds				Percent			
Chicken:								
Young	3.73	3.79	3.76	3.76	71.70	71.97	72.53	72.07
Mature	4.39	4.40	4.27	4.36	62.57	62.86	62.99	62.80
All	3.78	3.83	3.79	3.80	2/71.05	71.32	71.92	71.43
Turkeys:								
Fryer-roaster	9.05	9.13	9.20	9.13	77.74	78.54	78.99	78.42
Young	19.52	19.49	19.13	19.38	78.99	78.94	79.35	79.09
Old	19.34	19.53	19.69	19.52	77.96	78.58	77.98	78.20
All	18.42	18.35	18.11	18.30	78.91	78.91	79.32	79.04
Ducks	6.29	6.27	6.25	6.27	71.20	71.07	69.96	70.74
Geese	13.13	13.14	13.05	13.11	70.36	69.45	69.29	69.69

1/ Based on total poultry slaughtered under Federal regulation.
2/ Yield of ready-to-cook weight, including neck and giblets, as a percentage of total live weight inspected.

Table 25--Broiler parts: Weight in relationship to carcass weight 1/

Part	Unit	Weight of ready-to-cook broiler carcass in ounces 2/				
		26	30	34	38	42
Wings:						
Calculated average	Ounces	1.9	2.1	2.4	2.7	2.9
Range for 95% of parts	do.	1.6-2.1	1.9-2.4	2.1-2.7	2.4-2.9	2.7-3.2
Calculated percentage of carcass weight	Percent	6-8	6-8	6-8	6-8	6-8
Drumsticks:						
Calculated average	Ounces	2.1	2.5	2.8	3.1	3.5
Range for 95% of parts	do.	1.8-2.5	2.1-2.8	2.4-3.2	2.8-3.5	3.1-3.8
Calculated percentage of carcass weight	Percent	7-10	7-9	7-9	7-9	7-9
Thighs:						
Calculated average	Ounces	2.8	3.2	3.6	4.1	4.5
Range for 95% of parts	do.	2.2-3.3	2.7-3.7	3.1-4.2	3.5-4.6	4.0-5.1
Calculated percentage of carcass weight	Percent	9-13	9-12	9-12	9-12	9-12
Backs:						
Calculated average	Ounces	3.6	4.1	4.6	5.2	5.7
Range for 95% of parts	do.	2.8-4.4	3.3-4.9	3.8-5.4	4.4-6.0	4.9-6.5
Calculated percentage of carcass weight	Percent	11-17	11-16	11-16	12-16	12-16
Breasts:						
Calculated average	Ounces	8.4	9.7	10.9	12.2	13.5
Range for 95% of parts	do.	7.2-9.6	8.4-10.9	9.7-12.2	11.0-13.4	12.2-14.7
Calculated percentage of carcass weight	Percent	28-37	28-36	29-36	29-35	29-35
Total weight of all parts 3/	Ounces	25.6	29.4	33.1	37.2	41.0

1/ Table based on equations in table 3, page 28 of Marketing Research Report No. 604, Relations for Weight and Sizes of Broiler Parts to Carcass Weights, U.S. Dept. Agr., in cooperation with the University of Georgia.

2/ Ice-packed carcass, weighed after giblets and neck were removed and free water was allowed to drain from carcass for about 1 minute.

3/ Total of all parts adds to less than carcass weight due to loss from evaporation and weepage (dripping). Weight loss for all carcass in the above-mentioned study was 2.27 percent.

Table 26--Broiler parts: Weights in relationship to eviscerated carcass weight

Cut	Share of carcass weight 1/
	Percent
Breast and wing (forequarter)	25.1
Breast cuts:	
Split breast with back	17.2
Keel-cut breast	13.5
Keel portion	8.8
Wishbone-cut breast	14.8
Wishbone portion	7.1
Quartered breast:	
Anterior	10.6
Posterior	7.3
Split breast with shoulder	15.3
Split breast with ribs	15.3
Split breast (GI)	13.5
Wing cuts:	
Wing	7.4
Wing with breast portion	8.2
Wing segments:	
Proximal (first joint)	3.4
Distal (second joint)	2.8
Tips	1.9
Whole leg with back (hindquarters)	24.4
Thigh cuts:	
Thigh with back	16.6
Thigh with back portion	13.9
Thigh portion with back	11.6
Thigh with connecting fat and skin	10.9
Thigh	9.1
Thigh portion with back (from 3-piece leg)	8.9
Thigh-drumstick portion (from 3-piece leg)	9.5
Drumstick cuts:	
Drumstick	8.4
Drumstick with thigh portion	11.8
Drumstick portion (from 3-piece leg)	5.4
Back portions removed from--	
Thigh with back portion	2.8
Split breast with shoulder and thigh with connecting fat and skin	16.3
Split breast with ribs	5.3
Split breast with thigh	22.9

1/ Each percentage is the mean of 240 values.

Source: Hudspeth, J.P., Lyon, B.G., and Mercuri, A.J., Weights and Cooked Yields of Broiler Parts Related to Eviscerated Carcass Weights, ARS Rpt. S-46, U.S. Dept. Agr., Oct. 1974, p. 5.

Table 27--Turkey parts: Approximate weights and percentage of carcass 1/

Part	Cut from 7/8-pound fryer-roaster	Cut from 13/14-pound hen	Cut from 19/20-pound tom	Percentage of carcass
	Pounds			Percent
Breast, bone in	2.63	5.75	7.75	40.0
Half breast, bone in	(1.81)	(2.88)	(3.88)	--
Three-joint wing (each)	.47	.66	1.00	10.0
Two-joint wing or one-joint wingettes (each)	(.24)	(.33)	(.50)	--
Thigh, bone in (each)	.67	1.17	1.53	16.0
Drumstick, bone in (each)	.59	.78	1.17	12.0
Giblets, excluding neck	.40	.43	.69	3.5
Tail	.19	.22	.31	1.5
Soup pack, including back and neck	1.15	1.94	3.25	15.0
Cutting loss	--	--	--	2.0
Total	--	--	--	100.0

-- = Not applicable.

1/ Weights and percentage vary depending on turkey size and conformation and method of cutting.

Source: Price Schroeder, "California Turkey Industry," paper, California Banker's Short Course, Modesto, Calif., Feb. 1976.

Table 28--Factors relating to shell eggs

U.S. weight classes for consumer grades	Minimum net weight per--		
	Case (30 dozen)	Dozen	
	Pounds	Ounces	Pounds
Shell eggs:			
Jumbo	56.0	30	1.88
Extra large	50.5	27	1.69
Large	45.0	24	1.50
Medium	39.5	21	1.31
Small	34.0	18	1.12
Peewee	28.0	15	.94
Average weight sold at retail	47.0	25	1.57
	Liquid or frozen, minimum amount approximating 1 dozen eggs		
	Whole	Yolk	Albumen
	Pounds		
Shell eggs:			
Jumbo	1.64	0.71	0.93
Extra large	1.48	.64	.84
Large	1.32	.57	.75
Medium	1.16	.50	.66
Small	1.00	.43	.57
Peewee	.80	.35	.47
Average weight sold at retail	1.38	.60	.78
	Dried, minimum amount approximating 1 dozen eggs		
	Whole	Yolk	Albumen
	Pounds		
Shell eggs:			
Jumbo	0.42	0.32	0.12
Extra large	.38	.29	.11
Large	.34	.26	.10
Medium	.30	.23	.09
Small	.26	.20	.08
Peewee	.21	.16	.06
Average weight sold at retail	.35	.27	.10

Table 29--Estimated conversion factors for yields of liquid eggs and dried eggs and the moisture content of dried eggs, by types of product, 1977

Egg products	Liquid yield from 30 dozen shell eggs 1/	Yield from 1 dozen shell eggs		Requirements for 1 pound of dried egg products		Yield of dried egg product from		Approximate moisture content of dried egg product 3/
		Liquid egg	Dried egg	Liquid egg 2/	Shell eggs	100 pounds of liquid egg	30 dozen shell eggs	
	Pounds				Dozen	Pounds		Percent
Whole eggs	39.5	1.317	.347	3.8	2,89	26.32	10.39	3-4
Albumen (flake)	22.6	.753	.099	7.6	10.09	13.16	2.97	12-16
Albumen (spray)	22.6	.753	.092	8.2	10.90	12.20	2.76	6-8
Yolk	16.9	.563	.256	2.2	3.91	45.45	7.68	3.5-4.5

Note: Data represent recent commercial experience as well as the effect of current sanitary regulations on yields of egg products.

1/ Based on: Whole eggs, 24.7 percent total egg solids; egg whites, 11 percent total egg solids; and yolks, 43 percent minimum total egg solids.

2/ Concentration factors used by U.S. Dept. Agr. for estimating the conversion of liquid to dried to check yields and volume reports.

3/ Values recommended for "Approximate Moisture Content of Dried Egg Product," Poultry Division, Agr. Mktg. Serv., U.S. Dept. Agr., letter dated Dec. 7, 1976.

Fish and Shellfish

Table 30--Fish and shellfish: Factors relating to specified weights 1/

Product	Factors converting to--			
	Round weight 2/	Reported weight 3/	Dressed weight 4/	Edible weight 5/
Fish, fresh and frozen:				
Not packaged, domestically produced:				
Round weight	1.000	1.000	0.700	0.450
Dressed weight	1.429	--	1.000	.643
Edible weight	2.222	--	1.556	1.000
Packaged, domestically produced:				
Round weight	1.000	.338	--	.338
Packaged weight	2.959	1.000	--	1.000
Imports, reported weight	1.948	1.000	1.364	.877
Shellfish, fresh and frozen:				
Not packaged, including shrimp, oysters, crab, lobster, etc.:				
Reported weight	--	1.000	--	.450
Edible weight	--	2.222	--	1.000
Packaged, including fresh shucked oysters, clams, shrimp, etc.	--	1.000	--	1.000
Fish, cured, all types, including smoked pickled, salted, and dried fish:				
Reported weight (i.e., cured weight)	1.500	1.000	--	.750
Edible weight	2.000	1.333	--	1.000

-- = Not available.

1/ Factors are for specified groups and are not applicable to individual species.

2/ Weight of the fish as removed from the water.

3/ Production as reported to the National Marine Fisheries Service; imports as reported by the Bur. Census.

4/ Weight of fin fish after removal of entrails, head, tail, and fins.

5/ Weight of the edible portion of the fish or shellfish.

Table 31--Shellfish: Net weight per gallon

Product	Pounds per gallon
Clams	8.75
Oysters	8.75
Scallops	8.75

Table 32--Canned fish and shellfish: Net weight per standard case

Product	Pounds per case
Alewives	45
Anchovies	31.25
Mackerel	45
Salmon	48
Sardines:	
Maine	23.4
Pacific	45
Shad	45
Tuna and tuna-like fish:	
Solid	21
Chunks	19.5
Flakes and grated	18
Crab meat, natural	19.5
Shrimp, wet pack 1/	6.75
Clam products:	
Whole and minced 1/	15
Juices, chowders, broth, etc.	30
Oysters, natural 1/	7
All other	48

1/ Cut out or drained weights of can contents. All others are net can contents.

Table 33--Oil-bearing materials: U.S. conversion factors relating to yield of oil and meal per unit crushed 1/

Oil-bearing material	Unit	Factors for obtaining-- Crude oil yield		Loss in refining crude oil		Cake or meal yield	
		Pounds	Percent	Pounds	Percent	Pounds	Percent
Babassu kernels	Short ton	1,260	63.0	75.6	6.0	--	--
Castor beans 2/	do.	900	45.0	3/	3/	1,080	54.0
Copra (coconut oil)	do.	1,280	64.0	84.9	6.6	704	35.0
Corn gern 4/	do.	1,000	50.0	80.0	8.0	1,000	50.0
Cottonseed	do.	320	16.0	23.0	7.2	910	45.4
Flaxseed (linseed) 5/ 6/	Bu. (56 lb.)	19.9	35.6	7/	7/	37.1	66.2
Mustard seed	Short ton	460	23.0	3/	3/	--	--
Olives	do.	300	15.0	3/	3/	--	--
Palm (fresh fruit bunches)	do.	400	20.0	NA	NA	--	--
Palm kernels	do.	940	47.0	63.0	6.7	1,020	51.0
Peanuts: 6/							
Farmers' stock	do.	634	31.7	24.1	3.8	838	41.9
Shelled peanuts 8/	do.	843	42.2	32.0	3.8	1,114	55.9
Rapeseed	do.	700	35.0	NA	NA	1,200	60.0
Safflower seed	do.	720	36.0	3/	3/	1,200	60.0
Sesame seed	Bu. (56 lb.)	26.3	47.0	3/	3/	27.3	48.7
Soybeans 6/	Bu. (60 lb.)	10.7	17.9	.41	3.8	47.3	78.8
Sunflower seed, oil type	Short ton	800	40.0	NA	NA	9/1,100	9/55.0
Tung nuts (fruit basis) 10/	do.	318	15.9	3/	3/	--	--

NA = Not available. -- = Not applicable.

1/ Based on 1970-74 crop year averages for soybeans, cottonseed, flaxseed, and peanuts. 2/ Castor oil also is reported as dehydrated. To convert crude to dehydrated, multiply by 0.88; to convert dehydrated to crude, multiply by 1.136. 3/ Not customarily reported as refined oil. 4/ Includes both wet and dry processing. The wet process accounts for about 85 percent of the total crush. 5/ Total outturn per bushel of flaxseed processed may exceed 56 pounds since some mills add flaxseed screenings to the meal. 6/ See separate tables on flaxseed, peanuts, and soybeans for additional factors. 7/ Customarily, linseed oil is refined from raw (degummed) oil rather than crude. The loss in refining is about 2.5 percent. 8/ Straight run peanuts included shelled No. 1 and 2 grades and oil stock. Estimated oil content of peanuts exported averages about 43.5 percent. Some additions shells are added to residue to produce cake and meal. 9/ Includes about 36 percent meal and 19 percent hulls. 10/ 15 percent moisture.

Table 34--Vegetable oils and products: Conversion factors relating to crude and refined oils and to pounds and gallons

Oil and product	Factors for obtaining--			
	Refined oil from crude oil	Equivalent crude oil from refined oil	Pounds from gallons	Gallons from pounds
Oil:				
Babassu	0.94	1.06	7.5	0.133
Castor	1/	1/	8.0	.125
Coconut	.93	1.08	7.5	.133
Corn	.92	1.09	7.7	.130
Cottonseed	.93	1.08	7.7	.130
Fish (menhaden)	1/	1/	7.7	.130
Grain screenings	1/	1/	7.7	.130
Linseed	1/	1/	7.7	.130
Murumuru	1/	1/	7.5	.133
Mustardseed	1/	1/	7.7	.130
Oiticica	1/	1/	7.8	.128
Olive	1/	1/	7.6	.132
Ouricuri	1/	1/	7.5	.133
Palm	.93	1.08	7.7	.130
Palm kernel	.93	1.08	7.5	.133
Peanut	.96	1.04	7.7	.130
Perilla	1/	1/	7.7	.130
Rapeseed	1/	1/	7.7	.130
Safflower	1/	1/	7.7	.130
Sesame seed	1/	1/	7.7	.130
Soybean	.96	1.04	7.7	.130
Sunflower seed	1/	1/	7.7	.130
Tucum	1/	1/	7.5	.133
Tung	1/	1/	7.8	.128
Product:				
Cooking and salad oils	--	--	7.4	.135
French dressing	--	--	8.7	.115
Mayonnaise	--	--	8.0	.125
Oil and vinegar dressing	--	--	8.4	.119
Salad dressing	--	--	8.7	.115
Sandwich spread	--	--	8.7	.115

-- = Not available.
1/ Not customarily reported as refined oil.

Additional factors: A standard tank car usually contains about 60,000 pounds or 8,000 gallons of oil. A jumbo tank car usually contains about 150,000 pounds or 20,000 gallons of oil. A standard size oil-drum contains 55 gallons of oil.

Table 35--U.S. oilseeds: Average yield per harvested acre 1/

Oil-bearing material	Average yield		Crude oil produced	Cake and meal produced
	Bushels 2/	Pounds	Pounds	Pounds
Cottonseed	3/	770	125	350
Flaxseed	10.4	580	205	385
Peanuts (farmers' stock)	3/	2,225	705	930
Safflowers	3/	1,890	680	1,135
Soybeans	26.6	1,595	285	1,255
Sunflowers (oil type)	3/	1,000	400	550

1/ Yields of oilseeds are 5-year averages, 1970-74. Yields of oil and cake or meal are based on the 5-year average yields of oilseeds converted to oil and cake or meal equivalents on the basis of 5-year, 1970-74, crop year average percentage outturns, as follows:

Oil outturn: Cottonseed, 16.0 percent; flaxseed (linseed oil), 35.6 percent; peanuts, 31.7 percent; safflowers, 36.0 percent; soybeans, 17.9 percent; and sunflowers, 40.0 percent.

Cake or meal outturns: Cottonseed, 45.4 percent; linseed, 66.2 percent; peanuts, 41.9 percent; safflowers, 60.0 percent; soybeans, 78.8 percent; and sunflowers, 55.0 percent.

2/ Bushel weight: Flaxseed, 56 pounds; and soybeans, 60 pounds.
3/ Usually reported in short tons.

Table 36--Fat and oil products: Approximate serving size quantity to purchase 100 servings, and measures

Product	Serving size	Quantity to purchase for 100 servings	Measure
Table fat, butter or margarine	1 teaspoon	1.04 pounds	1 pound - 2 cups
Salad dressing, mayonnaise or French	1 tablespoon	1.60 quarts	1 gallon = 8 pounds
Peanut butter	4 tablespoons	14.10 pounds	1 pound = 1 3/4 cups
Peanuts, roasted, shelled, and chopped	4 tablespoons (1.6 ounces)	10.00 pounds	1 pound = 2 1/2 cups

Source: Food Buying Guide for Type A School Lunches, 1972, Food Nutr. Serv., U.S. Dept. Agr.

Table 37--Conversion factors for obtaining fat content of selected foods based on fat analysis

Product	Factors
Edible fats and oils:	
Butter	0.81
Margarine	.81
Cooking and salad oils	1.00
Lard	1.00
Oleo stock and oleo stearin	1.00
Shortening	1.00
Other foods:	
Custard or pudding	.05
French fries	.13
French fries, frozen	.06
French fries, frozen, heated	.08
French dressing	.39
Italian dressing	.60
Mayonnaise	.80
Peanuts, salted 1/	.48
Peanut butter	.50
Potato chips and shoestring potatoes	.40
Salad dressing	.42
Sandwich spread	.36
Dairy products and substitutes:	
Ice cream	.11
Coffee whitener (creamer), dry	.27
Cream, light 2/	.18
Half and half 2/	.11
Mellorine 3/	.08
Milk 2/	.034
Whipped cream, heavy	.38
Baking mixes, dry form:	
Biscuit	.13
Cake, white	.12
Gingerbread	.10
Pie crust	.33
Baked goods:	
Biscuits	.17
Bread, white	.03
Cake, white	.16
Cookies, assorted	.20
Crackers, saltines	.12
Doughnuts, cake type	.19
Doughnuts, yeast type	.27
Pies, assorted	.11
Pizza, with cheese	.08
Pretzels	.05
Rolls, plain pan rolls	.06

1/ The unroasted peanut contains from 45 to 50 percent fat. Approximately 2 percent fat is added during the roasting process. 2/ Based on milk marketing order data.

3/ Fat content varies based on State laws.

Source: Composition of Foods, Agr. Handb. 8, and based on data in Nutritive Value of American Foods, Agr. Hdbk. 456, Agr. Res. Serv., U.S. Dept. Agr.

Table 38--Fat content and major fatty acid composition of selected foods

Food	Total fat	Fatty acids 1/		
		Saturated 2/	Unsaturated	
			Oleic	Linoleic
	Percent			
Salad and cooking oils:				
Safflower	100	10	13	74
Sunflower, oil type, northern	100	11	14	70
Corn	100	13	26	55
Cottonseed	100	23	17	54
Soybean 3/	100	14	25	50
Sesame	100	14	38	42
Soybean, specially processed	100	11	29	31
Peanut	100	18	47	29
Palm 4/	100	45	40	8
Olive	100	11	76	7
Coconut	100	80	5	1
Vegetable fats-shortening	100	23	23	6-23
Table spreads:				
Margarine, first ingredient on label: 5/6/				
Safflower oil (liquid), tub	80	11	18	48
Corn oil (liquid), tub	80	14	26	38
Soybean oil (liquid), tub 7/	80	15	31	33
Corn oil (liquid), stick	80	15	33	29
Soybean oil (liquid), stick 7/	80	15	40	25
Cottonseed or soybean oil partially hydrogenated, tub 7/	80	16	52	13
Butter	81	46	27	2
Animal fats:				
Poultry	100	30	40	20
Lard 4/	100	38	46	10
Beef, lamb, and pork	100	45	44	2-6
Fish, raw: 7/				
Salmon	9	2	2	4
Tuna	5	2	1	2
Mackerel	13	5	3	4
Herring, Pacific	13	4	2	3
Nuts:				
Walnuts, English	64	4	10	40
Walnuts, black	60	4	21	28
Brazil	67	13	32	17
Peanuts or peanut butter	51	9	25	14
Pecan	65	4-6	33-48	9-24
Egg yolk	31	10	13	2
Avocado	16	3	7	2

1/ Total is not expected to equal "Total fat."
2/ Includes fatty acids with chains from 8 through 18 carbon atoms.
3/ Suitable as salad oil.
4/ From Fatty Acids in Food Fats, Home Econ. Res. Rpt. 7, Agr. Res. Serv., U.S. Dept. Agr., 1959.
5/ Mean values of selected samples and may vary with brand name and date of manufacture.
6/ Includes small amounts of mono-unsaturated and di-unsaturated fatty acids that are not oleic of linoleic.
7/ Linoleic acid includes higher polyunsaturated fatty acids.

Source: Fats in Food and Diet, AIB-361, U.S. Dept. Agr.

Table 39--Soybean products: Factors relating to yields of selected items

Product	Factors for obtaining--				
	Pounds of product from pound of soybeans	Equivalent pounds of soybeans from pound of product	Pounds of product from bushel of soybeans	Equivalent bushels of soybeans from pound of product	Pounds of product from short ton of soybeans
Soybean oil, crude 1/	0.179	5.59	10.7	0.092	358
Soybean oil, refined 1/	.171	5.85	10.3	.098	342
Soybean cake or meal, 44 percent protein 1/	.788	1.27	47.3	.021	1,576
Soybean Hulls 2/	.070	14.29	4.2	.238	140
Flour, flakes or grits:					
Full fat	.833	1.20	50.0	.020	1,666
Low fat	.592	1.69	35.5	.028	1,184
Defatted, industrial	.558	1.79	33.5	.030	1,116

1/ 1970-74 crop year average. 2/ Removed when 50-percent protein meal produced.

Table 40--Flaxseed products: Factors relating to yields of selected items

Product	Factors for obtaining--				
	Pounds of product from pound of flaxseed	Equivalent pounds of flaxseed from pound of product	Pounds of product from bushel of flaxseed	Equivalent bushels of flaxseed from pound of product	Pounds of product from short ton of flaxseed
Linseed oil, crude 1/	0.356	2.81	19.9	0.0502	712
Linseed oil, refined 2/	.266	3.76	14.9	.0671	532
Linseed cake or meal 1/	.662	1.51	37.1	.0270	1,324

1/ 1970-74 crop year average.
2/ Customarily, linseed oil is refined from raw (degummed) oil, rather than crude. The loss in refining is about 2.5 percent.

Table 41--Conversion factors and weights for obtaining peanuts and peanut products

Peanuts and peanut products	Factors and weights
	Factors
Peanuts, unshelled: 1/	
Cleaned unshelled stock from farmers' stock 2/	1.00
Equivalent farmers' stock from cleaned unshelled stock 2/	1.00
Peanuts, shelled: 1/ 3/	
Equivalent farmers' stock from total shelled peanuts	1.33
Total shelled peanuts from farmers' stock	.7519
Shelled oil-stock peanuts from farmers' stock (oil stock pickouts and straight run ungraded peanuts)	.195
Shelled edible peanuts from farmers' stock 4/	.556
Equivalent farmers' stock from shelled edible peanuts 4/	1.80
Peanut butter:	
Peanut butter from farmers' stock peanuts	.528
Equivalent farmers' stock peanuts from peanut butter	1.89
Peanut butter from shelled edible peanuts 5/	.95
Equivalent shelled edible peanuts from peanut butter	1.05
Pounds of peanut butter from short tons of farmers' stock	1.056
Equivalent short tons of farmers' stock from pounds of peanut butter	.00094
	Pounds
Oil, oil cake, and meal: 1/	
Yield per short ton of farmers' stock: 6/	
Crude peanut oil	634
Peanut cake or meal	838
Estimated product outturn per short ton of shelled peanuts crushed:	
Crude peanut oil	843
Peanut cake and meal 7/	1,114

1/ Based on 1970-74 crop averages.
2/ Beginning 1966 crop year, farmers' stock peanuts are reported in terms of net weight so no adjustments are necessary.
3/ Excludes roasting stock.
4/ Excludes shelled oil stock peanuts.
5/ Including additives.
6/ Yields from farmers' stock are provided for statistical convenience. In actual practice, only the shelled peanuts are crushed for oil. Some of the shells are then added to the residue to produce the cake and meal.
7/ Some additional shells are added to the residue to produce cake and meal.

Table 42--Factors relating to dry edible beans and peas and their products 1/

Products	Factors for obtaining--	
	Dry beans and peas from product	Products from dry beans and peas
Canned:		
Light and dark red kidney	0.262	3.81
Dry limas	.258	3.87
Garbanzos	.255	3.92
Pinto	.257	3.89
Blackeye peas	.267	3.74
Navy (pea)	.287	3.49
Red beans	.272	3.68
Black turtle soup	.306	3.27
Great Northern (small white	.258	3.88
Dried peas (whole)	.250	4.00
Dehydrated:		
Green pea soup	.611	1.64

1/ Data from four canners.

Table 43--Factors relating to whole grain and processed wheat

Commodity	Unit	Factors for converting-- Units of wheat to pounds of commodity	Units of commodity to bushels of wheat
Wheat, whole grain	Pound	1.0	0.01667
	Bushel	60.0	1.0
	Short ton	2,000.0	33.33
	Metric ton	2,204.622	36.744
	Long ton	2,240.0	37.33
White flour	Pound	.730	.0228
	100-pound sack	73.00	2.283
	Bushel	43.80	--
	Short ton	1,460.0	45.66
	Metric ton	1,609.4	50.33
	Long ton	1,635.2	51.14
Semolina or farina 1/	Pound	.58	.0287
	100-pound sack	58.00	2.874
	Bushel	34.80	--
	Short ton	1,160.0	57.47
	Metric ton	1,278.7	63.35
	Long ton	1,299.2	64.37
Whole wheat flour or cracked wheat	Pound	.908	.01701
	100-pound sack	98.0	1.700
	Bushel	58.8	--
	Short ton	1,960.0	34.01
	Metric ton	2,160.5	37.49
	Long ton	2,195.2	38.09
Wheat meal or whole wheat meal	Pound	.990	.01684
	100-pound sack	99.0	1.684
	Bushel	59.4	--
	Short ton	1,980.0	33.67
	Metric ton	2,182.6	37.12
	Long ton	2,217.6	37.71

-- = Not applicable.

1/ At a 73-percent extraction rate, semolina and farina comprise approximately 58 percent and flour 15 percent.

Table 44-Factors relating to wheat and white flour content of specified products 1/

Product	Factors for converting --			
	Bushels of wheat to pounds of product	Pounds of product to bushels of wheat	Pounds of white flour to pounds of product	Pounds of product to pounds of white flour
Baked goods: 2/				
Bread:				
Brown	109.5	0.0091	2.50	0.40
Cracked wheat (18 percent cracked wheat flour)	81.5	.0123	1.86	.54
Hearth and hard rolls	66.1	.0150	1.51	.66
Raisin	112.6	.0089	2.57	.39
Rye (20 percent rye flour)	76.6	.0130	1.75	.57
White pan	69.2	.0144	1.58	.63
Whole wheat (100 percent whole wheat flour)	93.3	.0107	--	--
Cake, medium rich formula:				
Angel food	261.1	.0039	5.96	.17
Chocolate	190.1	.0053	4.34	.23
Fruit	446.8	.0023	10.2	.10
Pound, yellow and rich	184.0	.0055	4.2	.24
White and yellow	171.3	.0059	3.91	.26
Cookies:				
Bars (military)	112.1	.0089	2.56	.39
Sandwich	99.4	.0100	2.27	.44
Fig bars	168.6	.0059	3.85	.26
Wafers, vanilla or butter and other	109.5	.0091	2.50	.40
Crackers:				
Crackers (military)	48.2	.0207	1.10	.91
Soda, saltines, oysterettes	43.8	.0228	1.00	1.00
Graham, 14 percent whole wheat flour	79.7	.0125	1.82	.55
Pretzels or pilot bread	45.1	.0221	1.03	.97
Doughnuts:				
Cake	106.8	.0093	2.44	.41
Yeast-raised	83.2	.0121	1.9	.53
Rolls, soft	70.1	.0141	1.60	.62
Sweet baked foods, yeast leavened	106.4	.0093	2.43	.41
Flour mixes:				
Bread	49.9	.0201	1.14	.88
Cake	109.5	.0091	2.50	.40
Doughnut or waffle	66.6	.0150	1.52	.66
Pancake	97.2	.0101	2.22	.45
Macaroni and noodle products:				
Macaroni or spaghetti	42.0	.0237	3/ .96	1.04
Noodles, 5.5 percent egg or egg yolk solids	44.7	.0222	1.02	.98
Spaghetti, canned	109.5	.0091	2.50	.40

See footnotes at end of table.

Continued--

Table 44--Factors relating to wheat and white flour content of specified products 1/--Continued

Product	Factors for converting--			
	Bushels of wheat to pounds of product	Pounds of product to bushels of wheat	Pounds of wheat to pounds of product	Pounds of product to pounds of wheat
Wheat cereals:				
Ready-to-serve:				
40 percent bran flakes	29	0.0345	0.49	2.04
Malted cereal, granules	53	.0190	.88	1.14
Malted wheat flakes	55	.0183	.91	1.10
Puffed wheat	51	.0196	.85	1.18
Shredded wheat 1/	55	.0182	1/ .92	1.09
Sugar-coated wheat cereal	103	.0097	1.72	.58
Premixed cereal 4/	240	.0042	4.00	.25
Precooked, infant-type mixed cereal	120	.0083	2.00	.50
Wheat flakes	65	.0154	1.08	.93
Uncooked and quick-cooking:				
Bulgur	52	.0192	.87	1.15
Rolled wheat	56	.0180	.93	1.08
Whole wheat meal	59	.0169	.98	1.02

-- = Not applicable.

1/ All factors are based on 60 pounds of wheat per bushel except for shredded wheat cereal which is based on 54 pounds per bushel.

2/ Baked and finished weight.

3/ About 4-percent moisture loss below flour's normal moisture content.

4/ Premixed cereal is ready to eat.

Table 45--Factors relating to corn content of specified products 1/

Product	Factors for converting--			
	Bushels of corn to pounds of product	Pounds of product to bushels of corn	Pounds of corn to pounds of product	Pounds of product to pounds of corn
Corn, shelled 2/	56.0	0.0179	1.00	1.00
Corn meal, degermed	31.6	.0316	.564	1.77
Corn meal, nondegermed, regular	50.0	.0200	.893	1.12
Corn flour	33.0	.0303	.589	1.70
Corn grits or hominy grits	29.0	.0345	.518	1.93
Hominy, canned	145.0	.0069	2.589	.39
Hominy, dry	27.3	.0366	.488	2.05
Cornstarch, 10 percent moisture 3/	34.4	.0291	.614	1.63
Cornstarch, pearl, 12 percent moisture or laundry starch 3/	35.2	.0284	.629	1.59
Corn sugar:				
Dextrose, hydrate, 8 percent moisture	30.0	.0333	.536	1.87
Dextrose, anhydrous, moisture free 4/	27.5	.0364	.491	2.04
Corn sirup, 43° Baume, 19.73 percent moisture, 42 percent dextrose equivalent 3/	37.6	.0266	.672	1.49
Corn flakes or corn cereal	21.5	.0465	.384	2.60
Corn-soya cereal 5/	33.6	.0297	.60	1.66
Precooked infant-type mixed cereal	500.0	.0020	8.929	.11
Premixed cereal	101.8	.0098	1.818	.55
Pancake mix	330.0	.0030	5.882	.17
Pudding powder, 33 percent cornstarch	103.8	.0096	1.854	.54
Chocolate pudding powder, 18 percent cornstarch	186.6	.0054	3.333	.30
Corn snacks	67.5	.0148	.830	.1205
Corn oil:				
Refined	1.6	.625	.0286	35.0
Crude	1.8	.556	.0321	31.1
Corn feeds, gluten feed, gluten meal, and corn oil meal or cake 6/	14.9	.0671	.266	3.76
Hominy feed	20.0	.050	.357	2.80

1/ All factors are based on 56 pounds of shelled corn per bushel. Product spectrum varies with corn milled and product mix sought. Factors presented are based on maximum yield of product. 2/ Five bushels of shelled corn = 1 barrel; 10 bushels of ear corn = 1 barrel; 70 pounds of ear corn = 1 bushel of shelled corn. 3/ From 17-percent moisture corn. 4/ Based on continued reprocessing of uncrystallized dextrose liquors. 5/ Corn-soya cereal contains approximately 34 percent soya flour. 6/ Conversion factors cover all corn feeds combined. Data are not available to show separate components of corn feeds, though gluten feed is generally about 55-60 percent of total corn feeds, gluten meal around 40 percent, and corn oil meal only about 2 percent.

Oats and Oat Products

Table 46--Factors relating to oat content of specified products

Product	Factors for converting--			
	Bushels of oats to pounds of product	Pounds of product to bushels of oats	Pounds of oats to pounds of product	Pounds of product to pounds of oats
32-pound bushel				
Oats, unprocessed	32.0	0.03125	1.0	1.0
Oat flour	20.3	.04926	.634	1.577
Rolled oats or oatmeal:				
Quick cooking or regular	18.5	.05405	.579	1.730
Ready-to-eat cereal	20.5	.04878	.641	1.560
Precooked infant-type cereal	100.1	.010	3.128	.320
38-pound bushel 1/				
Oats, unprocessed	38.0	.02632	1.0	1.0
Oat flour	24.1	.04149	.634	1.577
Rolled oats or oatmeal:				
Quick cooking or regular	22.0	.04545	.579	1.730
Ready-to-eat cereal	24.3	.04115	.641	1.560
Precooked infant-type cereal	118.9	.0084	3.128	.320

1/ This bushel weight represents the bulk of the oats processed for human food.

Barley and Barley Products

Table 47--Factors relating to barley and malt content of specified products

Product	Factors for converting--				
	Bushels of barley to pounds of product	Pounds of product to bushels of barley	Pounds of barley to pounds of product	Pounds of product to pounds of barley	Pounds of product to pounds of malt
Barley, unprocessed	48	0.02083	1.000	1.000	1.412
Barley flour	25	.04166	.500	2.000	--
Pearl barley	29	.03448	.604	1.655	--
Malt	34	.02941	.708	1.412	1.000
Malt syrups and malt extract	26	.03846	.542	1.846	.764

-- = Not applicable.

Rye and Rye Products

Table 48--Factors relating to rye content of specified products

Product	Factors for converting--			
	Bushels of rye to pounds of product	Pounds of product to bushels of rye	Pounds of rye to pounds of product	Pounds of product to pounds of rye
Rye, unprocessed or rolled	56.0	0.0179	1.00	1.00
Rye flour	44.8	.0223	.80	1.250
Rye bread, 20 percent rye flour	224.0	.0045	4.00	.250
Pancake mix, 5 percent rye flour	903.2	.0011	16.13	.062
Rye malt	40.0	.0250	.71	1.400

Buckwheat and Buckwheat Products

Table 49--Factors relating to buckwheat content of specified products

Product	Factors for converting--			
	Bushels of buckwheat to pounds of product	Pounds of product to bushels of buckwheat	Pounds of buckwheat to pounds of product	Pounds of product to pounds of buckwheat
Buckwheat, unprocessed	48.0	0.0208	1.00	1.00
Buckwheat flour	28.8	.0347	.60	1.67
Buckwheat cereals	22.3	.0448	.46	2.15
Buckwheat pancake mix, 42 percent buckwheat flour	68.6	.0146	1.43	.70

Table 50--Factors relating to rice content of specified products 1/

Product	Factors for converting--			
	Hundredweight of rough rice to pounds of product	Pounds of product to hundredweight of rough rice	Pounds of milled rice to pounds of product	Pounds of product to pounds of milled rice
Rice, rough	100.0	0.01000	1.5038	0.6650
Brown	82.0	.01220	1.2330	.8110
Milled 2/	66.5	.01504	1.0000	1.0000
Brewers	3.0	.33333	.0451	22.1667
Bran	10.9	.09174	.1639	6.1009
Polish	1.6	.62500	.0241	41.5625
Rice grits	69.5	.01439	1.0451	.9568
Rice flour	64.2	.01558	.9654	1.0358
Rice starch	49.1	.02037	.7383	1.3544
Precooked rice	63.9	.01565	.9609	1.0407
Dehydrated precooked rice	60.5	.01653	.9098	1.0992
Rice cereals, ready-to-serve:				
Puffed rice	66.5	.01504	1.0000	1.0000
Rice flakes	61.2	.01634	.9203	1.0866

1/ Rice conversion factors vary substantially depending on the type and variety of rice milled. These data are based on national averages over a period of time and are not a perfect measure of any crop's milling yield.
2/ Excluding brewers' rice.

Note: Miscellaneous factors relating to rice:

1 bushel rough rice equals 45 pounds
1 hundredweight rough rice equals 100 pounds
or 2.22 bushels
1 barrel rough rice equals 162 pounds
or 3.6 bushels

Grain Sorghum and Grain Sorghum Products

Table 51--Factors relating to grain sorghum content of specified products

Product	Factors for converting--			
	Hundred-weight of grain sorghum to pounds of product	Pounds of product to hundred-weight of grain sorghum	Pounds of grain sorghum to pounds of product	Pounds of product to pounds of grain sorghum
Grain sorghum, unprocessed	100.0	0.0100	1.000	1.00
Grain sorghum starch, 10 percent moisture 1/	61.7	.0162	.617	1.62
Grain sorghum starch, pearl or laundry starch, 12 percent moisture 1/	63.1	.0158	.631	1.58
Dextrose, crystalline 2/	54.4	.0184	.544	1.84
Grain sorghum feeds, gluten feed, gluten meal, and grain sorghum oil meal or cake, 12 percent moisture	35.0	.0286	.350	2.86

1/ Starch calculated at 89.5 percent recovery.
2/ Assumes complete conversion of starch to dextrose.

Sugar, Beet and Cane

Many products contain not only beet or cane sugar but also other sweeteners, such as conventional corn sirup, high fructose corn sirup, dextrose (corn sugar), honey, or molasses. The conversion factors refer to typical beet or cane sugar content. In view of substitutability, products may contain a smaller or larger proportion of beet or cane sugar than those indicated. Other sweeteners are particularly important in the manufacture of candy.

Table 52--Raw sugar content of specified sugar products

Product	Sugar in specified units of product 1/	
	Raw value	Refined sugar
	Pounds	
Sugar, granulated	1.070	1.00
Lump sugar	1.070	1.00
Brown sugar	.963	.90
Powdered sugar 2/	1.038	.97
Invert sugar	.856	.80
Invert sirup		
Medium invert	.790	.74
High invert	.740	.69
Sucrose sirup	.690	.64

1/ Raw value of any quantity of sugars is equivalent to raw sugar testing 96° by the polariscope as defined in the Sugar Act of 1948, as amended.
2/ Powdered sugar on the average contains about 3 percent cornstarch to prevent lumping.

Table 53--Refined beet and cane sugar in confectionery products

Product	Percentage of refined sugar in product
Confections: 1/	
Candy:	
Uncoated candies:	
Caramels	30 - 45
Creams, candy corn, crystallized creams, etc.	70
Grained mint types, so-called pure sugar	90
Fudges	40 - 45
Hard candies such as fruit drops, Christmas candies, etc.	50 - 75
Jellies, soft, sugar-sanded	45
Jellies, jube jel	35
Lozenges, sugar wafers and pressed tablets	90
Marshmallows	45
Marshmallows, grain, circus peanuts, etc.	57
Nougats	40
Taffy, English-type	50
Taffy, wrapped	25
Sugar-panned candies:	
Jelly beans and related products	60
Caramels	60
Chocolate centers	65
Creams	70
Fudges	75
Hard candies such as cinnamon drops	70
Marshmallows	80
Peanut and nut meats	50
Chocolate-coated candies:	
Brittles, nut or peanut	50
Caramels	35
Creams, assorted	60
Fruits such as cordial cherries	60
Fudges	52
Jellies	25 - 50
Marshmallows	45
Nougats	45
Peanuts and nut meats	40
Bars, uncoated:	
Nougats, taffy, caramels, jelly, etc.	40
Peanut brittle	30 - 67
Solid chocolate, stars, etc:	
Bittersweet chocolate	40
Sweet chocolate	50
Milk chocolate	55
Coated bars--chocolate or confectioners coatings:	
Caramel-nougat	45
Coconut	40
Creamed	65
Fudge	52
Marshmallows	52
Nougats	48

See footnote at end of table.

Continued--

Table 53--Refined beet and cane sugar in confectionery products--Continued

Product	Percentage of refined sugar in product
Confections--Continued:	
Candy--Continued:	
Peanut brittle	50
Peanut or nut roll bar	35
Novelty chocolate bars:	
Almond	40
Cereal	40
Peanut	40
Miscellaneous candy:	
Chocolate	38
Nonchocolate	52
Unspecified	45
Chewing gum	56
Chocolate, sweetened cooking	50
Cocoa, beverage powder (military)	52
Fruit peel, candied	70
Popcorn, candied	60

1/ The sugar content of confections may vary as much as 10 percent from the indicated figures.

Table 54--Refined beet and cane sugar content of specified products

Product	Unit	Pounds of refined sugar per unit of product
Dairy products:		
Chocolate milk	Pound	.05 - .07
Condensed milk, sweetened	do.	.42
	48 14 ounce cans	17.64
Condensed skim milk, sweetened	Pound	.40
Ice cream	do.	.15
	Gallon (4.7 pounds)	.70
Ice cream mix:		
Paste	Pound	.36
Powder	do.	.40
Sherbet	do.	.28
Water ice	do.	.29
Dessert powders:		
Custard or starch pudding powder	do.	.61
Gelatin-base powders	do.	.85
Fountain sirups and soft drinks:		
Beverage powders, synthetic lemon or orange 1/	--	--
Butterscotch or marshmallow topping	Pound	.40
	Gallon (11 pounds)	4.40
	6 No. 10 cans	19.80
Chocolate sirup for topping	Pound	.26
	Gallon (11 pounds)	2.86
	6 No. 10 cans	12.87
Chocolate sirup for beverages	Pound	.38
	Gallon (10.27 pounds)	3.90
	6 No. 10 cans	17.55
Cola, clear fruit or other soft drink sirups	Pound	.55
	Gallon (10.5 pounds)	5.80
Cola-type soft drinks, bottled	Pound	.10
	Gallon (8.65 pounds)	.866
	24 7 ounce bottles	1.14
	24 12 ounce bottles	1.95
Fruit flavored soft drinks	Pound	.12
	Gallon (8.7 pounds)	1.05
	24 7 ounce bottles	1.37
	24 12 ounce bottles	2.36
Gingerale, bottled	Pound	.084
	Gallon (8.6 pounds)	.722
	24 12 ounce bottles	1.62
Fruit products:		
Fruit, frozen	Pound	.20
Fruit products, other--		
Apple butter	do.	.29
Jellies, jams, preserves	do.	.55
Marmalade	do.	.67
Mincement	do.	.35
Miscellaneous:		
Mayonnaise	do.	.10
	Gallon	.81
Pickles, sweet	Pound	.35
Salad dressing	do.	.24
	Gallon	2.11

-- = Not applicable.
1/ Synthetic beverage powders are sweetened with corn sirup and dextrose.

Table 55--Sugar content of canned fruits

Canned product	Natural fruit sugar	Added refined cane and beet sugar 1/	
		Weight in 24 No. 2-1/2 cans	Percent
	Percent	Pounds	Percent
Apricots	14.4	2.97	6.6
Cherries (sweet)	13.9	2.75	6.1
Figs	19.0	.90	2.0
Fruit cocktail	11.0	3.15	7.0
Fruit for salad	9.9	3.52	8.1
Peaches	11.8	3.13	7.2
Pears	11.6	2.78	6.4
Plums	14.8	2.79	6.2

1/ Based on the finished canned product packed in heavy syrup.

Table 56--Net weights, sugar solids content, and total solids content per unit of specified products at 20° Celsius

Product	Unit 1/	Net weight per unit	Total sugar solids content 2/	Total solid content
			Pounds	
Corn sirup, regular 42° Baume	Pound	1.00	0.78	0.783
	No. 10 can	8.88	6.92	6.95
	Gallon	11.68	9.11	9.15
Corn sugar or dextrose (hydrate)	Pound	1.00	.92	.92
Honey	Pound	1.00	.78	.83
	Gallon	11.84	9.24	9.83
Maple sirup	Pound	1.00	.64	.66
	Gallon	11.03	7.06	7.28
Maple sirup, imitation:				
Thin type	Pound	1.00	.66	.66
	Gallon	11.03	7.28	7.28
Thick type	Pound	1.00	.73	.73
	Gallon	11.39	8.31	8.31
Maple sugar	Pound	1.00	.87	.90
Molasses, edible, first centrifugal: 3/				
U.S. Grade A	Pound	1.00	.635	.79
	No. 10 can	8.91	5.66	7.04
	Gallon	11.72	7.44	9.26
U.S. Grade B	Pound	1.00	.615	.79
	No. 10 can	8.91	5.48	7.04
	Gallon	11.72	7.21	9.26
U.S. Grade C	Pound	1.00	.58	.79
	No. 10 can	8.91	5.17	7.04
	Gallon	11.72	6.80	9.26
Molasses, inedible blackstrap 4/ 5/	Pound	1.00	.50	.795
	Gallon	11.74	5.87	9.33
	Tank car	93,920	46,960	74,666
Refiner's sirup: 6/				
U.S. Grade A	Pound	1.00	.6624	.72
	Gallon	11.34	7.51	8.16
U.S. Grade B	Pound	1.00	.6192	.72
	Gallon	11.34	7.02	8.16

See footnotes at end of table.

Continued--

Table 56--Net weights, sugar solids content, and total solids content per unit of specified products at 20° Celsius--Continued

Product	Unit 1/	Net weight per unit	Total sugar solids content 2/	Total solid content
			Pounds	
Refiner's sirup: 6/--Cont.				
U.S. Grade C	Pound	1.00	0.5928	0.76
	Gallon	11.55	6.85	8.78
U.S. Grade D	Pound	1.00	.532	.76
	Gallon	11.55	6.14	8.78
Sugar can sirup:				
U.S. Grade B, unsulfured	Pound	1.00	.68	.74
	No. 10 can	8.70	5.92	6.44
	Gallon	11.45	7.79	8.47
U.S. Grade B, sulfured	Pound	1.00	.65	.74
	No. 10 can	8.70	5.66	6.44
	Gallon	11.45	7.44	8.47
Sorgo sirup	Pound	1.00	.68	.76
	No. 10 can	8.78	5.97	6.67
	Gallon	11.55	7.85	8.78

1/ The No. 10 can is estimated to contain 0.76 gallon, based on internal volume of 189.7 cubic inches and 93 percent fill when cold.

2/ Total sugar solids refers to all sugars, not only sucrose. The sugar content of all products except corn sirup and honey consists of one or more of the following sugars: dextrose, levulose (monosaccharides), and sucrose (a disaccharide). Corn sirup, regular, 42° Baume contains 34 percent of mono, di, tri saccharides, which types of sugars are generally associated with sweetness. These types include dextrose and maltose (a disaccharide). In addition, corn sirup contains 44 percent higher sugars (polymers of dextrose) which have little or no sweetness. The sugar content of honey averages 38 percent levulose, 31 percent dextrose, 7 percent maltose, 1.5 percent sucrose, and 1.5 percent higher sugars.

3/ U.S. Grade A is based on a minimum total sugar content of 63.5 percent and minimum density of 79° Brix.

U.S. Grade B is based on a minimum total sugar content of 61.5 percent and minimum density of 79° Brix.

U.S. Grade C is based on a minimum total sugar content of 58.0 percent and minimum density of 79° Brix.

4/ Based on average total sugar content of 50 percent and minimum density of 79.5° Brix.

5/ One gallon of ethanol made from 2.4 gallons of inedible blackstrap molasses.

6/ U.S. Grade A is based on a Brix solids content of not less than 72 percent and a ratio of total sugars to Brix solids of not less than 92 percent.

U.S. Grade B is based on a Brix solids content of not less than 72 percent and a ratio of total sugars to Brix solids of not less than 86 percent.

U.S. Grade C is based on a Brix solids content of not less than 76 percent and a ratio of total sugars to Brix solids of not less than 78 percent.

U.S. Grade D is based on a Brix solids content of not less than 76 percent and a ratio of total sugars to Brix solids of not less than 70 percent.

Cocoa and Cocoa Products

In processing, cocoa beans are roasted and hulled with a resultant loss in weight of 20 percent. The 80 percent remaining is chocolate liquor, sometimes called ground or bitter chocolate. About 53 percent of the liquor is composed of cocoa butter or fat and 47 percent is composed of a nonfat powder residual. Since it is impossible to completely separate the butter from the nonfat powder residual, the manufacturer will leave a minimum of fat in the powder--usually about 12 percent, but if breakfast cocoa is desired, about 22 percent is left.

Table 57--Factors relating to cocoa bean content of specified products

Product	Unit	Equivalent pounds of cocoa beans per unit of product	Remarks
Chocolate, unsweetened, commercial, or pure chocolate liquor	Pound	1.25	
Chocolate, sweetened, commercial	do.	.73	Factor to be used for most types, which usually contain 30 percent chocolate liquor; and 14 percent cocoa butter.1/
Cocoa powder, unsweetened	do.	1.18	12 percent cocoa fat. 2/
Cocoa, breakfast	do.	1.04	22 percent fat. 2/
Cocoa beverage powder (military)	do.	.39	18 percent cocoa (18 percent fat). Cocoa beverage component for military rations; also may be used for instant, sweetened or soluble cocoa.
Cocoa beverage powder, malted type, commercial	do.	.31	
Cocoa butter	do.	1.33	Beans pressed to 12 percent residual fat. 2/
Chocolate sirup for topping	do.	.24	Chocolate liquor 13.5 percent; cocoa butter 2.5 percent.
	Gallon (11 lb.)	2.64	
Chocolate sirup for beverages	Pound	.26	Cocoa 11 percent.
	Gallon (10.27 lb.)	2.67	
Chocolate flavored milk, chocolate flavored drink	Pound	.02	Cocoa 1.0 percent.
	Gallon (9 lb.)	.20	
Chocolate ice cream	Pound	.06	Cocoa 2.5 percent.
	Gallon (4.5 lb.)	.28	
Candy:			
Chocolate bars or discs, sweet, solid, enriched, high melt (military)	Pound	.21	Chocolate liquor 17 percent.

See footnotes at end of table.

Continued--

Table 57--Factors relating to cocoa bean content or specified products--Continued

Product	Unit	Equivalent pounds of cocoa beans per unit of product	Remarks
Candy--Continued			
Chocolate fudge bars (military)	Pound	.12	Chocolate liquor 6 percent; cocoa 1.8 percent.
Chocolate-coated bars, commercial	do.	.20	
Chocolate drops, candy-coated or pan-coated chocolates	do.	.50	Chocolate liquor 40 percent.
Chocolate bars or chocolate candy, unspecified	do.	.67	An average figure for use when no detailed specifications are given.
Candy, miscellaneous, or unspecified	do.	.28	Based on assumption that slightly less than half of such candy is, or contains, chocolate. Used when type of candy is not specified.
Chocolate pudding, or chocolate dessert powder	do.	.31	Breakfast cocoa 15 percent.
Chocolate cake mix	do.	.14	Breakfast cocoa 7 percent.
Cookies, oatmeal, chocolate chip (military)	do.	.13	Chocolate liquor 5.6 percent; cocoa butter 2.2 percent.

1/ If the proportions of chocolate liquor and cocoa butter are known and are different from those shown for this item, calculate factor with following formula:

$$\text{Pounds of beans per unit of product} = \frac{1.25\ (x + 2.15y)}{100}$$

x = percent of liquor
y = percent of butter

2/ In the case of cocoa butter and cocoa powder, approximately twice the amount of beans implied by these conversions are needed to produce a given amount of product. The factors have been adjusted to exclude the proportionate volume resulting in production of residual products.

Table 58--Fruit, vegetable, and juice containers: Dimensions, capacities, and conversion factors

Industry designation	Dimensions 1/	Total capacity avoirdupois ounces of water at 68° F.	Conversion factor: No. 303 equivalent	Conversion factor: No. 2 equivalent	Conversion factor: No. 2 1/2 equivalent
6Z	202x308	6.00	0.360	0.295	0.204
8Z short	211x300	7.90	.470	.386	.266
8Z tall	211x304	8.65	.514	.422	.291
No. 1 flat	307x203	8.89	.527	.433	.298
No. 1 picnic	211x400	10.90	.648	.532	.367
No. 211 cylinder	211x414	13.55	.803	.660	.455
No. 2 vac. (12 ounce vac.)	307x306	14.70	.871	.716	.494
No. 300	300x407	15.20	.902	.740	.511
No. 1 tall	301x411	16.60	.989	.810	.561
No. 303	303x406	16.85	1.000	.821	.567
No. 300 cylinder	300x509	19.40	1.149	.945	.651
No. 2	307x409	20.50	1.217	1.000	.689
No. 303 cylinder	303x509	21.85	1.295	1.066	.734
No. 3 vacuum	404x307	23.85	1.416	1.163	.802
Jumbo	307x510	25.70	1.528	1.255	.866
No. 2 cylinder	307x512	26.35	1.564	1.284	.886
No. 2 1/2	401x411	29.75	1.765	1.450	1.000
29 Z	307x700	32.50	1.925	1.580	1.091
32 Z (quart)	307x710	35.50	2.103	1.729	1.192
No. 3 cylinder, (46 ounces)	404x700	51.70	3.063	2.515	1.735
No. 5 squat	603x408	68.15	4.034	3.322	2.286
No. 10	603x700	109.45	6.483	5.336	3.673

1/ The first figures represent the diameter of the container and the second figures the height. The first digit in each figure represents inches and the second two digits sixteenths of an inch; i.e., 307 is 3-7/16 inches

Source: National Canners Association.

Table 59--Canned fruits and vegetables: Case conversion factors by container designation

Container designation	Containers per case	Factor to multiply by to convert to--		
		24/303's	24/2's	24/2-1/2's
	Number			
6Z	48	0.72	0.59	0.41
8Z short	72	1.41	1.16	.80
8Z tall	24	.52	.42	.29
No. 1 flat	48	1.05	.87	.60
No. 1 picnic	48	1.30	1.06	.73
No. 211 cylinder	24	.80	.66	.46
No. 2 vac. (12 ounce vac.)	24	.87	.72	.49
No. 300	24	.90	.74	.51
No. 1 tall	24	.99	.81	.56
No. 303	24	1.00	.82	.57
No. 300 cylinder	24	1.15	.94	.65
No. 2	24	1.22	1.00	.69
No. 3 vacuum	24	1.42	1.16	.80
No. 2 1/2	24	1.77	1.45	1.00
29Z	12	.96	.79	.55
32Z (quart)	12	1.05	.86	.60
No. 3 cylinder	12	1.53	1.26	.87
No. 5 squat	6	1.01	.83	.57
No. 10	6	1.62	1.33	.92

Source: National Canners Association.

Table 60--Shipping containers for fresh fruits and vegetables

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh fruits:			
Apples	Carton, tray pack	40	45
	Carton, cell pack	37	44
	Carton or box, loose pack	37	43
	Carton of 12 3-pound bags	36	
	Carton of 8 5-pound film bags	40	
Apricots:			
California	Los Angeles, lug	24	26
Washington	Carton or box	28	
Avocados	2-layer carton, flat or lug	25	28
	1-layer carton or flat	12-1/2	14
Florida	4/5 bushel carton	36	40
Bananas	Carton	40	
Berries:			
Blueberries	12 1-pint trays	11	12
Raspberries, blackberries, and boysenberries	12 1/2-pint trays	5-1/2	7-1/2
Strawberries	12 1-pint trays	10	12
	16-quart crate	32	
Cranberries	Carton of 24 1-pound packages	24	
Cherries	Lug or carton	18	20
	Cherry lug	12	
Figs	1-layer flat, tray pack	5	6
	2-layer flat, tray pack	10	15
Grapefruit:			
Florida	4/5 bushel carton	42-1/2	
Texas	7/10 bushel carton	40	
Western:			
Desert area	Carton	34	
Summer	Carton	33-1/2	
Grapes, table, California:			
Coachella Valley	Lug, plain pack	22	
Other areas	Lug or carton, plain pack	23	
Grape juice, California	Lug, lidded, as marked	36	42
Kiwifruit:			
California	1-layer flat	4	6
New Zealand	1-layer carton	7	9

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh fruits--Continued:			
Lemons	Carton	38	
Limes	Carton	20	
	1/5 bushel carton	10	
Mangoes:			
Florida	Flat	14	
Mexico	Lug	10	11
Nectarines	Los Angeles. Lug, 2-layer tray pack	22	
	Lug or carton, tight-fill	25	
Olives	Lug or carton, loose pack	26	
Oranges:			
Florida	4/5-bushel carton	45	
Texas	7/10-bushel carton	42-1/2	45
California-Arizona	7/10-bushel carton	38	
Peaches:			
California	2-layer, lug or carton	22	
	Western peach box	18	
Other areas	1/2-bushel crate or carton	25	
	3/4-bushel crate or carton	38	
Papayas	Carton	10	
Pears	Standard box or carton, wrap pack	45	48
	Carton, tight-fill pack	36	
Persimmons	2-layer tray pack, lug or carton	20	25
	1-layer tray pack, flat or carton	10	12
Pineapples	2-layer carton	40	
	1-layer carton	20	
Plantains	Carton	50	
Plums	Lug or carton, loose pack	28	30
	4-basket crate	24	32
Pomegranates	2-layer carton or lug	22	26
Prickly pears	Box, wrapped pack	18	
Prunes, fresh	Cartons	30	
Quince	2-layer tray, lug or carton	22	
	Bushel carton	40	

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh fruits--Continued			
Tangelos:			
Florida	4/5 bushel carton	40	45
California	1/2-bushel carton	25	30
Tangerines:			
Florida	4/5-bushel carton	47	50
California	1/2-bushel carton	25	30
Fresh vegetables:			
Anise	15-1/2-inch wirebound crate	40	50
	Carton and crate packed, 1-1/2 to 2-1/2 dozen	25	
	Crate	60	70
Artichokes	Carton or box by count or loose pack	20	25
Asparagus	Pyramid crate	30	36
	1/2-pyramid crate or carton	15	17
	Carton of 16 1-1/2 pound packages	24	25
Beans, snap and lima	Bushel crate, hamper, or basket	28	32
	Carton	28	32
Beets	1-2/5-bushel crate, 24s	36	40
	4/5-bushel crate, 12s	15	20
Topped	Sack, as marked	25	50
Broccoli	14 to 18 bunches, carton	20	24
Brussels sprouts	Carton	25	
	12 10-ounce cups, flat or carton	7-1/2	8
Cabbage	Sack, crate, or carton	50	55
Savoy	Sack, crate, or carton	37	
Carrots:			
Bunched	Carton, 2-dozen bunches	23	27
Topped	48 1-pound bags or 24 2-pound bags in master container	48	
	Mesh bag, loose, as marked	25	55
Mini	20 12-ounce cello	15	17
Cauliflower	Flat or 2-layer carton of 9 to 16 trimmed heads	18	24
	Long Island type crate	45	55

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh vegetables--Continued:			
Celery:			
California	15-1/2 inch crate, flatpack	60	65
Florida	14-1/2 inch crate	55	60
Celery hearts:			
California	Carton of 12 18-film bags (2 to 3 stalks each)	24	28
Florida	Carton of 12 18-film bags (2 to 3 stalks each)	32	38
Chinese cabbage	15-1/2 inch wirebound crate	50	53
	1-1/9-bushel wirebound crate	40	45
Chives	Flat of 12 pots	10	
Corn, sweet	Wirebound crate 4-1/2 to 5 dozen	42	50
	Sacks	35	40
Cucumbers	Bushel carton or wirebound crate	50	55
	1-1/9-bushel carton and wirebound	50	55
	Los Angeles lug	28	32
	Carton of 24	22	28
Cucumbers, greenhouse	Carton, 1-layer pack	8	10
Eggplant	Carton packed 18's and 24's	20	23
	Bushel carton, 1-1/9-bushel carton, or wirebound crate	30	35
Escarole and endive	Carton or wirebound crate of 24 heads	30	36
	1-1/9-bushel wirebound crate	25	28
Garlic	Carton or crate, bulk	30	
	Carton of 12-tube or 12-film bag package (2 cloves each)	10	
Greens	Bushel basket, crate or carton	20	25
	1-2/5 or 1-3/5 bushel wirebound crate	30	35
Horseradish	Sack	50	60
Leeks	4/5-bushel crate	20	
Lettuce:			
Iceberg	Western Iceberg carton of 18 to 30 heads	36	45
Romaine	1-1/9-bushel wirebound crate	20	25

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh vegetables: Continued--			
Lettuce:			
Big Boston	Carton and Eastern carton of 24 heads	20	24
Other	Bib	5	8
	Leaf	10	13
Melons:			
Cantaloups	1/2 carton or crate packed 12, 15, 18, 23	35	40
	Jumbo crate, packed 18-45	70	80
	2/3 cartons 15, 18, 24, 30	53	55
Casabas	Carton, bliss style, packed 4, 5, 6, or 8	32	34
Crenshaws	Carton, bliss style, packed 4, 5, 6, or 8	30	33
Honeydews	Carton, various counts	29	32
	Flat crate standard	40	
Persians	Carton, 4, 5, or 6	35	50
Watermelons:			
Western and New Mexico	Bulk	40,000	
Florida, Texas, and other States	Bulk	45,000	
	Bulk bin, small size	800	1,000
	Bulk bin, medium size	1,400	1,800
	Carton, holding 3 to 5 melons	65	80
Texas and Mexico	Carton, 3 or 4	65	80
Mushrooms	Carton of 8 1-pound packages	8	
	Carton of 9 8-ounce packages	4 1/2	
	Carton, loose pack	10	
	4-quart basket	3	5
Okra	Bushel hamper or crate	30	
	5/9 bushel crate	18	
	Carton	18	
	12-quart basket	15	18
Mexico	Crate or carton	15	18

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh vegetables--Continued			
Onions:			
Dry	Sack	50	
	Sack	25	
	Carton, 15 3-pound bags	45	
	Carton, 20 2-pound bags	40	
Green	Carton or crate, 4-dozen bunches	15	25
	Carton or crate, 2 dozen	20	
Parsley	Carton, bushel basket, or crate 5-dozen bunches	20	25
Parsnips	Film bags	25	
	Carton of 12-1-pound cello bags	12	
Peas:			
Southern Florida	Bushel hamper or crate	24	26
Green	Bushel basket or wirebound crate	28	32
Peppers:	Bushel carton	25	30
Green, California	1-1/9 bushel wirebound crate	25	30
	Carton	27	34
Chili: California	Lugs or carton, loose pack	16	25
Texas and Mexico	3/4 bushel carton	20	
Potatoes	100-pound sack	100	
	50-pound sack or carton	50	
	20-pound film or paper bag	20	
	5 10-pound film or paper bags	50	
	10 5-pound film or paper bags	50	
Radishes, topped	Carton of 24 8-ounce film bags	12	
	Carton of 30 6-ounce film bags	11	12
	40-pound film bag	40	
Rhubarb	Carton or lug	20	
	5-pound carton	5	
Rutabagas	Bag or carton	25	
	Sack or carton	50	
Salad mix	Carton of 8 5-pound film bags	40	
Shallots, dry	Bag	5	
	16-quart carton	32	

See footnote at end of table.

Continued--

Table 60--Shipping containers for fresh fruits and vegetables--Continued

Commodity	Shipping container	Approximate net weight 1/	
		Pounds (range)	
Fresh vegetables--Continued:			
Spinach	Carton or wirebound crate, 2 dozen	20	22
	12 10-ounce film bags	7 1/2	8
	Bushel basket or crate	20	25
Squash:			
Winter	1-1/9-bushel crate	40	50
	Bulk bin carton, collapsible and reuseable	800	900
	Various bulk bins	900	2,000
Summer	5/9 bushel crate or carton	21	
	1/2 bushel basket or carton	21	
	Carton or Los Angeles lug	24	28
	3/4 lug	18	22
	1-1/9 bushel crate	42	45
Sweet potatoes	Carton, crate or bushel basket	50	
	Carton, California	40	
Tomatoes:			
Cherry	12-pint carton	16	18
Mature green	Carton	30	
Pinks and ripe	2-layer flat, carton, or tray pack	20	
	3-layer lug or carton	30	
	Carton, loose pack	30	
Greenhouse	Basket	8	10
Turnips, topped	Film bag	25	
	Film and mesh bag or bushel basket	50	
	Carton of 24 1-pound film bags	24	
Watercress	Carton, 25 bunches	8	

1/ Weight ranges are shown for most commodities. Actual weights larger and smaller than the ranges shown may be found. The mid-point of the range should be used if a single value is desired.

Table 61--Canned fruits and juices: Net weight per case 1/

Commodity	Packing	(Containers) 48 8-ounce	24 No. 303	12 No. 3 cylinders
		Pounds		
Canned fruits:				
Citrus:				
Grapefruit and orange sections	Sirup	24	24	37.5
Grapefruit sections	do.	24	24	37.5
	Water	24		

Commodity	Packing	24 8-ounce tall	24 No. 303	24 No. 2	24 No. 2½	6 No. 10
Noncitrus:						
Apples	Sp. Gr. 0.95	--	24.0	30	--	40.5
	Water	--	--	--	--	37.5
Apple butter		--	--	--	--	46.5
Applesauce	Sp. Gr. 1.07	--	24.0	--	43.5	40.5
Apricots	Heavy sirup	13.1	24.0	--	45.0	40.5
	Light sirup	12.8	24.0	--	43.5	39.8
Blackberries	Heavy sirup	12.8	24.0	--	--	39.8
	Light sirup	12.8	24.0	--	--	39.4
	Water	12.0	24.0	--	--	38.6
Cherries:						
Unpitted	Heavy sirup	13.1	24.0	--	45.0	40.5
	Light sirup	12.8	24.0	--	43.5	39.8
Pitted	Heavy sirup	13.1	24.0	--	43.5	40.5
	Water	12.0	24.0	--	42.0	38.6
Cranberry sauce	42 percent solids	--	24.0	--	--	43.9
Figs	Heavy sirup	13.1	25.5	--	45.0	41.3
Fruit cocktail	Extra heavy sirup	13.1	25.5	--	45.0	41.3
	Heavy sirup	13.1	24.0	--	45.0	40.5
Fruit for salad	Extra heavy sirup	13.1	25.5	--	45.0	41.3
	Heavy sirup	13.1	24.0	--	45.0	40.5
Grapes	Extra heavy sirup	12.4	24.0	--	45.0	41.3
	Heavy sirup	12.4	24.0	--	--	--
Peaches	do.	13.1	24.0	--	43.5	40.5
	Light sirup	12.8	24.0	--	43.5	39.8
Pears	Heavy sirup	12.8	24.0	--	43.5	39.8
	Light sirup	12.8	24.0	--	43.5	39.4
Pineapple	Heavy sirup	--	--	--	44.3	40.5
	Water	--	--	--	--	39.8
Plums	Heavy sirup	13.2	24.0	--	45.0	--
	Light sirup	12.8	24.0	--	43.5	39.8
Prunes, stewed	Extra heavy sirup	--	--	--	45.0	41.3
	Heavy sirup	--	--	--	--	40.5

Commodity	Packing	48 6½-ounce	24 No. 2	12 No. 3 cylinders	Gallon
Canned juices:					
Citrus:					
Blended citrus		19.5	29.6	37.3	8.7
Grapefruit		19.5	29.6	37.3	8.7
Lemon and lime		--	29.2	36.8	8.6
Orange		19.5	29.6	37.3	8.7
Tangerine		19.5	29.6	37.3	8.7

Commodity	Packing	24 No. 2	12/32z glass	12/40z glass	Gallon
Noncitrus:					
Apple		29.9	26.2	32.8	8.8
Grape		30.6	26.5	33.0	9.0
Nectar		29.9	26.0	32.5	8.8
Pineapple		29.9	26.2	32.8	8.8
Prune	18.5° brix	--	26.7	33.4	--

-- = Not available.
1/ Weights are derived from Net Contents Statements for Canned Food Labels - 1977, National Canners Association.

Table 62--Fruit juices and concentrates: Factors relating to farm and processed weights 1/

Item and specification	Approximate brix	Equivalent farm weight per gallon	Gallons per unit of farm weight		Net weight per gallon
	Degrees	Pounds	Box 2/	Ton	Pounds
Apple:					
Single strength	13	12	--	170	8.8
Frozen 3 to 1 concentrate	45	47	--	43	10.0
Cirtus fruits: 3/					
Orange					
Single strength juice	12	16	5.5	122	8.7
Frozen concentrate	45	69	1.3	29	10.0
Grapefruit					
Single strength juice	10	18	4.7	110	8.7
Frozen concentrate	40	83	1.0	24	9.8
Lemon					
Single strength juice	4/	26	2.9	76	--
Nonfrozen concentrate	4/	112	.7	17.9	--
Concentrate for lemonade	4/	18	4.2	110	--
Grape:					
Single strength	16	11	--	175	8.9
Frozen concentrate	50	40	--	50	10.3
Pineapple:					
Single strength	14	15	--	133	8.8
4 to 1 concentrate	61	75	--	27	10.8
3 to 1 concentrate	50	60	--	33	10.3
Prune (from fresh prunes):					
Single strength	31	13	--	155	9.4
1 1/2 to 1 concentrate	73	32	--	62	11.4

-- = Not available.

1/ For additional information on concentration of fruit juices, see Calculations of Volume and Weight Reduction in the Concentration of Fruit Juices, ARS 74-7, Agr. Res. Serv., U.S. Dept. Agr., June 1956.

2/ Oranges, 90 pounds; grapefruit, 85 pounds; lemons, 76 pounds.

3/ Orange and grapefruit products based on Florida yields; lemons on California.

4/ Lemon product yields are based on a standard ton containing 36.5 pounds of anhydrous citric acid.

Table 63--Canned fruits: Factors relating to farm and processed weights

Commodity	Pounds farm weight: From pounds canned	Pounds farm weight: From case No. 24 2-1/2	Pounds canned from pounds farm weight	Cases canned per ton farm weight 1/: 24/2-1/2's	24/303's	6/10's	Cases of 24/2-1/2's from pounds canned	Net weight per case 24/2-1/2's
	Pounds			Cases				Pounds
Citrus fruit:								
Citrus salad	2.096	91.32	0.477	21.9	38.8	23.8	0.02299	43.5
Grapefruit sections	2.020	87.72	.495	22.8	40.3	24.8	.02299	43.5
Orange sections	2.222	96.62	.450	20.7	36.6	22.5	.02299	43.5
Other fruit:								
Apples	1.859	72.46	.538	27.6	48.6	30.0	.02564	39.0
Applesauce	1.250	53.90	.800	37.1	65.6	40.5	.02299	43.5
Apricots	.694	31.25	1.440	64.0	113.3	69.9	.02222	45.0
Berries:								
Blackberries	.646	28.09	1.549	71.2	125.0	77.5	.02299	43.5
Blueberries	.836	36.36	1.196	55.0	97.4	60.1	.02299	43.5
Boysenberries	.694	29.24	1.440	68.4	120.0	74.4	.02299	43.5
Gooseberries	.595	25.06	1.680	79.8	140.0	86.8	.02299	43.5
Loganberries	.654	29.24	1.530	68.4	120.0	74.4	.02299	43.5
Raspberries	.641	26.99	1.560	74.1	130.0	80.6	.02299	43.5
Strawberries	.725	30.49	1.380	65.6	115.0	71.3	.02299	43.5
Cherries:								
Red tart-pitted	1.055	45.87	.948	43.6	76.8	47.4	.02299	43.5
Sweet-pitted	1.022	44.44	.979	45.0	79.6	49.0	.02299	43.5
Sweet-unpitted	.707	30.77	1.414	65.0	115.0	70.8	.02299	43.5
Cranberries	.388	16.31	2.580	122.6	2/ 215.0	133.3	.02083	48.0
Figs	.654	29.41	1.530	68.0	120.4	74.1	.02222	45.0
Fruit cocktail	.889	40.00	1.125	50.0	88.5	54.5	.02222	45.0
Fruits for salad	.889	40.00	1.125	50.00	88.5	54.5	.02222	45.0
Olives 3/	.945	25.51	1.058	78.4	138.6	85.4	.03704	27.0
Peaches:								
Clingstone	.836	36.36	1.196	55.0	97.4	60.1	.02299	43.5
Freestone	1.022	44.44	.979	45.0	79.6	49.0	.02299	43.5
Pears	1.000	43.48	1.000	46.0	81.4	50.1	.02299	43.5
Pineapple	1.709	76.92	.585	26.0	46.0	28.3	.02222	45.0
Plums, fresh	.663	29.85	1.508	67.0	118.6	73.0	.02222	45.0

Note: Relationships between farm and processed weights for most commodities vary widely from season to season and between localities. Factors shown in this table represent average relationships for all producing areas.

1/ Basic figure is 24/2's for citrus; 24/303's for applesauce and berries; 6/10's for apple slices and red tart cherries: 24/300's for cranberries; and 24/2 1/2's for other products. Case conversion factors based on table 61.

2/ Basis 24 cases of No. 300's.

3/ Drained weight.

Table 64--Canned vegetables: Factors relating to farm and processed weights

Commodity	Pounds farm weight: From pounds canned	Pounds farm weight: From case No. 24/303's	Pounds canned from pounds farm weight	Cases canned per ton farm weight 1/: 24/303's	Cases canned per ton farm weight 1/: 24 2-1/2's	Cases canned per ton farm weight 1/: 6/10's	Cases 24/303's from pounds canned	Net weight per case 24/303's
	Pounds			Cases				Pounds
Asparagus	1.220	28.57	0.819	70	39.5	43.2	0.0427	23.4
Lima beans 2/	.625	15.38	1.599	130	73.4	80.2	.0407	24.6
Snap beans	.712	16.67	1.404	120	67.8	74.1	.0427	23.4
Beets	1.290	31.75	.755	63	35.6	38.9	.0407	24.6
Carrots	1.333	32.79	.750	61	34.5	37.7	.0407	24.6
Corn:								
Cream style	2.033	50.00	.492	40	22.6	24.7	.0407	24.6
Whole grain	2.538	62.50	.394	32	18.1	19.8	.0407	24.6
Mushrooms	1.403	34.48	.713	58	32.8	35.8	.0407	24.6
Okra	1.030	24.10	.971	83	46.9	51.2	.0427	23.4
Peas 2/	.739	18.18	1.353	110	62.1	67.9	.0407	24.6
Pimentos	2.410	57.14	.415	35	19.8	21.6	.0422	23.7
Potatoes, white	1.572	37.74	.636	53	29.9	28.7	.0417	24.0
Pumpkin and squash	2.710	66.67	.369	30	16.9	18.5	.0407	24.6
Sauerkraut	1.859	43.48	.538	46	26.0	28.4	.0427	23.4
Spinach	.901	20.00	1.110	100	56.5	61.7	.0450	22.2
Sweetpotatoes	1.292	30.77	.784	65	36.7	40.1	.0420	23.8
Tomatoes	1.553	36.36	.644	55	31.1	34.0	.0427	23.4
Tomato catsup 3/	2.457	66.67	.407	30	17.1	18.6	.0369	27.1
Tomato juice	1.527	36.36	.655	55	31.1	34.0	.0420	23.8
Tomato paste 3/	5.432	142.86	.184	14	8.0	8.7	.0380	26.3
Tomato puree 4/	3.247	80.00	.308	25	14.2	15.5	.0407	24.6
Pickles	.744	17.86	1.344	112	63.8	69.4	.0416	30.0

1/ Basic figure is yield of 24/303's per ton. One case 24/303's is equivalent to 0.57 cases 24/2 1/2's and 0.62 cases 6/10's.
2/ Shelled basis.
3/ 33 percent solids.
4/ 11 percent solids.

Table 65--Dehydrated and dried fruits: Relationship between farm and processed weights

Commodity	Factors for converting to--		
	Farm weight from natural condition weight	Farm weight from packed processed weight	Packed processed weight from natural condition weight
Apples	8.00	8.00	1.00
Apricots	6.00	5.56	1.08
Dates: 1/			
Whole	1.00	1.00	1.00
Pitted	NA	1.14	.875
Figs	3.00	2.94	1.02
Peaches:			
Cling	7.50	6.94	1.08
Freestone:			
Elberta	7.00	6.48	1.08
Other	6.00	5.55	1.08
Pears	6.50	6.31	1.03
Prunes: 2/			
California	2.90	2.60	1.04
Pacific Northwest	3.14	3.05	1.03
Raisins:			
Thompson, sultana 3/	4.30	4.62	.93
Golden seedless	4.30	4.53	.95
Muscat, seeded	4.00	5.00	.80

NA = Not available.

1/ Includes only farm sales of dates for human consumption after farm cullage. Average farm sales of cull dates directly into nonfood channels estimated at 14 percent of U.S. production.

2/ To convert canned dried prunes to dried prunes, multiply by 0.691085.

3/ Includes unseeded muscats.

Table 66--Fruits and vegetables: Relationship of freeze-dried product to frozen weight 1/

Frozen food	Moisture content	Weight of freeze-dried products as percentage of frozen counterpart	Factors to convert freeze-dried weight to frozen weight
	Percent	Percent	
Apples, uncooked, sliced, sweetened	73.3	27.2	3.7
Apricots, uncooked	85.4	14.9	6.7
Blueberries, uncooked, unsweetened	85.0	15.3	6.5
Broccoli, cooked or uncooked	90.6	9.6	10.4
Brussels sprouts, cooked or uncooked	89.3	10.9	9.2
Cauliflower, cooked or uncooked	92.9	7.2	13.9
Green peas, cooked	81.7	18.7	5.4
Green peppers, cooked	94.7	5.4	18.5
Mushrooms, uncooked, whole, pieces or sliced	90.4	9.8	10.2
Pears, uncooked pieces or slices	82.7	17.6	5.7
Pineapple, uncooked slices or chucks, sweetened	77.1	23.4	4.3
Plums, Italian, uncooked slices or pieces	78.7	21.7	4.6
Raspberries, red, uncooked	74.3	26.2	3.8
Snap beans, cooked	91.6	8.6	11.6
Strawberries, whole, uncooked	75.5	24.8	4.0

1/ Freeze-dried products contain 2 percent moisture..

Table 67--Dehydrofrozen fruits and vegetables: Relationship between moisture content of product and weight reduction

Percentage original moisture content	Percentage moisture content in product at percentage weight reduction of--			
	50	60	70	80
	Percent			
95	90	87.5	83.3	75
90	80	75.0	66.7	50
85	70	62.5	50.0	25
80	60	50.0	33.3	0
75	50	37.5	16.7	--
70	40	25.0	0	--
65	30	12.5	--	--
60	20	0	--	--
55	10	--	--	--
50	0	--	--	--

-- = Not applicable.

Table 68--Dehydrofrozen fruits and vegetables: Relationship between prepared material and product

Commodity	Pounds of prepared material to produce pound dehydrofrozen product 1/
	Pounds
Apples	2
Carrots	2
Cherries	2 - 2.5
Green peas	2
Pimentos	3
Potatoes:	
Piece form	2
Mashed	4

1/ After peeling, trimming, and cutting. Preparation losses should be the same as for freezing.

Table 69--Fruits, dehydrated (low moisture): Relationship between farm and processed weights

Items	Packaged weight of dehydrated product: No. 10 can	Packaged weight of dehydrated product: Gallon can	Pounds of fresh product to make a pound of dehydrated product
	Pounds	Pounds	
Apples:			
Wedges	2.0	--)	
Slices	2.0	--)	
Dice	2.4	--)	10.0
Nuggets	2.5	--)	
Powder	--	5)	
Apricots:			
Slices	2.75	--)	
Dice	3.5	--)	
Nuggets	3.5	--)	7.0 - 8.0
Powder	--	6)	
Cherries:			
Sour-pitted	.7	--	7.0
Dates:			
Nuggets	3.5	--)	
Powder	3.5	6)	1/ 1.75
Figs:			
Slices	3.0	--)	
Powder		6)	1/ 1.35
Peaches:			
Slices	2.0	--)	
Dice	3.0	--)	
Nuggets	3.0	--)	7.0 - 8.0
Powder	--	6)	
Pears:			
Slices	1.5	--	11.0 -12.0
Prunes:			
Whole pitted	3.0	--)	
Nuggets	3.0	--)	1/ 1.71
Powder	--	6)	
Strawberries			
Freeze-dried	.7	--	11.0 -14.0

-- = Not available.
1/ From commercially dried fruit.

Table 70--Vegetables, dehydrated: Relationship between farm and processed weights and weight of product per 5-gallon container

Commodity	Moisture content: Average for raw material	Moisture content: Dehydrated product	Average losses from sizing, trimming, peeling, blanching, sorting, and other 1/	Factors for converting to-- 2/: Processed weight from farm weight	Factors for converting to-- 2/: Equivalent farm weight from processed	Weight of product per 5-gallon container: Product	Weight of product per 5-gallon container: Pounds
	Percent						
Asparagus	92	4	55	0.0037	27	Dice	8
						Powder	17
Beans, green	89	4	30	.080	12.5	1/2 inch cut	7
Beets without tops	87	4	10	.122	8.2	Powder	30
Cabbage	92	4	30	.048	21	Dice	9
						Powder	30
Carrots	86	4	35	.095	10.5	Dice	10-20
						Powder	35
Celery:							
Stalk and leaf flakes	93	35	10	.065	15.4	Flakes	3-6
Stalk slice	94	3.5	25	.047	21.2	Slice	6
Garlic	71	5	15	.260	4	Sliced	15
						Powder	30
Greens	92	4	20-50	.040-.067	15-25	Flakes	8
						Powder	18
Onion	88	4	11	.110	9	Flakes	10-15
						Powder	25
Parsley	89	4	15	.097	10.3	Flakes	4
						Powder	20
Peas, green	78	4	10	.200	5		18
Peppers:							
Green bell	93	3.5	40	.049	20.4	Dice	8
						Powder	20
Red bell	90	5.5	38	.064	15.6	Dice	10
						Powder	25

Continued--

See footnotes at end of table.

Table 70--Vegetables, dehydrated: Relationship between farm and processed weights and weight of product per 5-gallon container--Continued

Commodity	Moisture content: Average for raw material	Moisture content: Dehydrated product	Average losses from sizing, trimming, peeling, blanching, sorting, and other 1/	Factors for converting to-- 2/: Processed weight from farm weight	Factors for converting to-- 2/: Equivalent farm weight from processed	Weight of product per 5-gallon container: Product	Weight of product per 5-gallon container: Pounds
	Percent						
Potatoes:							
Dice	80	6	40	0.125	8.0	--	17
Granules	78	6	33	.14-.17	5.9-7.1	--	36
Flakes	80	4.5	33	.14-.17	5.9-7.1	--	10
Turnips	91	5	33	.063	16	Dice	14
						Powder	25
Sweet potato flakes	69	3	23.5	.143	7		
Onions, green tops	90	4	20	.083	12.0	Flakes	6
						Minced	8
Tomato flakes	93	4	20	.058	17.0	Flakes	12
Horseradish	70	5	20	.025	4.0	Powder	20
Leek	88	4	27	.091	11.0	Powder	22
Okra	90	5	13	.091	11.0	Powder	22
Pimento	89	4	65	.040	25.0	Powder	25
Pumpkin	91	5	13	.083	12.0	Powder	25
Spinach	90	4	10	.094	10.6	Powder	18

-- = Not applicable.

1/ Includes fines and defects removed during final inspection of dried product and other process losses.

2/ Successful dehydration of many of these vegetables depends upon the ability to divert undesirable sizes and/or grades to other kinds of processing. If such outlets are not available, shrinkage ratios will be greater than shown.

Table 71--Frozen fruits and vegetables: Estimated average relation between farm and processed weights

Commodity	Percentage recovery	Factors for converting to--		Approximate fruit-to-sugar ratio 2/
		Farm weight from frozen weight 1/	Frozen weight from farm weight 1/	
	Percent			
Frozen fruits:				
Apples	60	1.67	0.60	0 or 7 to 1
Apricots	78	1.10	.91	6 or 8 to 1
Berries:				
Blackberries	95	1.05	.95	0
Blueberries	97	1.03	.97	0
Boysenberries	88	1.14	.88	0
Gooseberries	97	1.03	.97	0
Loganberries	88	1.14	.88	0
Raspberries	95	1.05	.95	0
Strawberries	93	.89	1.12	5 or 4 to 1
Cherries, sour	75	1.11	.90	5 to 1
Cherries, sweet	85	1.18	.85	0
Grapes	85	1.18	.85	0
Peaches	67	1.25	.80	5 to 1
Pineapples	50	1.60	.625	4 to 1
Prunes	85	1.18	.85	0
Frozen vegetables:				
Asparagus	52	1.92	.52	2/
Lima beans 3/	95	1.05	.95	2/
Snap beans	85	1.18	.85	2/
Broccoli	75	1.33	.75	2/
Brussels sprouts	75	1.33	.75	2/
Cauliflower	70	1.43	.70	2/
Corn, cut	27	3.70	.27	2/
Carrots	55	1.82	.55	2/
Okra	85	1.18	.85	2/
Peas, green 3/	92	1.09	.92	2/
Peas, southern	50	2.00	.50	2/
Potatoes, white	40	2.50	.40	2/
Peppers, sweet	70	1.43	.70	2/
Spinach	70	1.43	.70	2/
Other greens	75	1.33	.75	2/
Squash	55	1.82	.55	2/
Sweetpotatoes	50	2.00	.50	2/

1/ Frozen weight is weight of frozen fruit plus sugar content. Where more than one fruit-to-sugar ratio is shown, the first is used in this computation.
2/ Fruit-to-sugar ratio does not apply to vegetables.
3/ Shelled.

Table 72--Fruit and vegetable juice powders: Factors relating to farm and processed weights

Items	Approximate percentage solids content of juice	Yield of juice as a percentage of raw material	Factors for converting to-- Processed weight from farm weight	Equivalent farm weight from processed weight
	Percent			
Apple	12	75	0.092	8
Citrus:				
Grapefruit	11	49	.055	18
Lemon	9	40	.037	27
Orange	13	55	.072	14
Grape	17	75	.130	8
Pineapple 1/	15	58	.089	11
Prune	32	74	.250	4
Tomato	6.4	70	.045	24

1/ Assuming juice is only product. In practice, however, juice is made only from edible grade peels, cores, trimmings, and sortouts.

Table 73--Potatoes: Estimated conversion factors for selected products

Products	Pounds farm weight	Pounds of finished product	Recovery	To obtain farm weight equivalent, multiply product weight by--
	Pounds		Percent	Number
Starch:				
Maine	100	9.3	9.3	10.75
Idaho	100	12.5	12.5	8.00
Average	100	11.1	11.1	9.00
Frozen	100	40.0	40.0	2.50
Chips	100	1/ 24.5	1/ 24.5	4.08

Note: In commercial potato peeling plants, preparation loss including waste and shrinkage ranged from 5 to 48 percent, averaging approximately 25 percent.
1/ From potatoes with 1.075 specific gravity.

Source: Marketing Research Report No. 105, Oct. 1955.

Hops

Table 74--Hop content of beer

Size of container	Factor for converting to hop content (cured weight)
	Pounds
Barrel (31 gallons)	0.2

Tree Nuts

Table 75--Tree nuts: Relationship between shelled and in-shell, and between farm and retail weights

Commodity	Factors for converting to--			
	Shelled weight from in-shell weight	In-shell equivalent from shelled weight	Retail weight from orchard-run 1/	Orchard run equivalent from retail weight 1/
Almonds:				
Domestic 2/	0.60	1.67	0.95	1.05
Imported	.30	3.33	NA	NA
Brazil nuts	.50	2.00	NA	NA
Cashews	.22	4.55	NA	NA
Chestnuts	.84	1.19	NA	NA
Filberts:				
Domestic	.40	2.50	.95	1.05
Imported	.45	2.22	NA	NA
Macadamias (Hawaii)	.38	2.63	NA	NA
Pecans:				
Improved	.40	2.50	.91	1.10
Seedling	.36	2.78	.91	1.10
Walnuts, English:				
Domestic 3/	.36	2.78	.87	1.15
Imported	.42	2.38	NA	NA
Walnuts, black	.17	5.88	NA	NA
Pistachios	.50	2.00	.33	1.67

NA = Not available.

1/ Orchard-run weight before culling. Both orchard-run and retail weight are in-shell basis.

2/ Average for domestic crop in recent years. The following illustrate the variation among various varieties: Nonpareli, Merced, and Thompson 0.60; Mission 0.40; Peerless 0.35. Peerless is frequently marketed in-shell.

3/ Average for portion of crop shelled commercially. Equivalent shelled-in-shell ratio for graded walnuts sold in-shell is 0.45, and average for entire U.S. walnut crop is 0.40.

Coffee and Tea Products

Table 76--Factors for obtaining equivalents of green coffee beans and leaf tea from specified products

Product	Description	Factors
Coffee:		
Green, bag 1/	Standard bag of 60 kilograms, number of pounds	132.276
Parchment	The green coffee bean contained in the parchment skin	.800
Roasted	Green coffee roasted to any degree and includes ground coffee	1.190
Pure instant soluble	The water-soluble solids derived from roasted coffee	2.500
Decaffeinated	Green roasted or soluble coffee from which caffein has been extracted:	
	Green	1.000
	Roasted	1.190
	Instant soluble	2.500
Tea, pure instant soluble	2.5 pounds of dry leaf tea yields 1 pound of soluble tea	2.500

1/ All coffee in the naked bean form before roasting.

Yeast

Table 77--Relationship between yeast solids of specified types of yeast and yeast products

Product	Factors for converting to--	
	Compressed yeast	Dry active yeast
Compressed yeast	1.00	0.305
Dry active yeast 1/	3.17	1.00

1/ The functional relationship between dry and compressed yeast differs from the weight relation. It requires about 40-45 percent of the weight of compressed yeast to give an equivalent activity of dried yeast. These factors are based upon the following average moisture levels: compressed yeast, 70.5 percent; dry active yeast, 8.0 percent; and nutritional yeast, 4.5 percent.

Table 78--Tobacco: Factors for adjusting stocks reported by dealers and manufacturers to a farm-sales-weight equivalent

Type	Type number	Factors to multiply by to convert-- Stemmed stocks to-- Unstemmed equivalent	Farm-sales-weight equivalent	Unstemmed stocks to farm-sales-weight equivalent from packed weight
Auction market areas (types 11-37): 1/				
Flue-cured	11-14	1.295	1.470	1.12
Virginia fire-cured	21	1.299	1.598	1.23
Tennessee and Kentucky fire-cured	22-23	1.324	2/1.471	1.04
Burley	31	1.345	1.550	1.12
Southern Maryland	32	1.373	1.400	1.02
One Sucker	35	1.413	1.554	1.10
Green River	36	1.389	1.570	1.13
Virginia sun-cured	37	1.326	1,538	1.16
Miscellaneous domestic	72-73	1.333	1.493	1.12
Imported leaf (types 81-93):				
Cigar leaf	81-89	1.400	1.624	1.16
Oriental and Aromatic	91	1.333	1.466	1.10
Flue-cured	92	1.295	1.450	1.12
Burley	93	1.345	1.506	1.12

Type	Type number	Factors to multiply by to convert-- Stemmed stocks to-- Unstemmed equivalent	Farm-sales-weight equivalent	Unstemmed stocks to farm-sales-weight equivalent from packed weight: Sweated weight 3/	Marked weight 3/	Farm-sale weight 3/
Domestic-grown cigar leaf (types 41-62):						
Pennsylvania seedleaf	41	1.444	2/1.718	1.19	1.05	1.00
Ohio	42-44	1.454	1.730	1.19	1.05	1.00
Puerto Rican	46	1.314	1.551	1.18	1.16	1.00
Connecticut Broadleaf	51	1.375	1.622	1.18	1.04	1.00
Connecticut Havana Seed	52	1.386	1.635	1.18	1.04	1.00
Southern Wisconsin	54	1.383	1.687	1.22	1.06	1.00
Northern Wisconsin	55	1.404	1.713	1.22	1.06	1.00
Connecticut share	61	1.245	1.419	1.14	1.10	1.00
Georgia and Florida shade	62	1.235	1.408	1.14	1.10	1.00

1/ Types 11-37 are reported on the basis of packed weight.
2/ Farm-sales-weight equivalent based on unstemmed sweated weight factor.
3/ The instructions for reporting unstemmed cigar-leaf of the domestic types require that dealers and manufacturers indicate the weight basis on which the tobacco is reported, namely, farm-sales-weight, marked weight, or sweated weight. The stocks are converted to the farm-sales-weight equivalent on the basis of average factors reflecting the percentage reported each quarter in each of these categories.

Naval Stores

Table 79--Naval stores: Weights and measures

Item	Unit	Amount
Crude pine gum:		
Gum naval stores (crops):		
Faces 1/	Number	10,000
Barrels, standard	do.	215
Net weight (each)	Pounds	435
Yield (each):		
Gum turpentine)	Gallons	9.8
Rosin	Pounds	299
Rosin:		
Gum:		
Drum:		
Net weight	Pounds	2/517
Gross weight	do.	534
Volume	Cubic feet	8.27
Shipping space	do.	9.4
Bag, net weight	Pounds	100
Other types:		
Drum:		
Net weight	do.	500 - 520
Average	do.	515
Volume	Cubic feet	8.27
Shipping space	do.	9.4
Bag, net weight	Pounds	100
Turpentine:		
Drum:		
Net weight	do.	396
Gross weight	do.	450
Liquid measure at 70° Fahrenheit	Gallons	55
Barrel, liquid measure at 70° Fahrenheit	do.	50
Gallon, measure at 70° Fahrenheit	Pound	7.2
Tank car, average	Gallons	6,000 - 8,000
Tank truck, average	do.	4,000

1/ Usually one "face" per tree in the United States.
2/ Statistical data published by USDA are in terms of 520-pound drums.

Table 80--Technical data on spirits of turpentine by type

Item	Unit	Gum spirits	Steam distilled wood	Sulfate wood	
				Refined	Crude
Specific gravity at 15.5°/15.5° Celsius:	Lbs/in.^{2}				
Typical for fresh turpentine	do.	0.868	0.862	0.867	--
Specification range, U.S. standard	do.	.860-.875	.860-.875	.860-.875	--
Specific gravity change per degree Fahrenheit	do.	.00045	.00045	.00045	--
Specific gravity change per degree Celsius	do.	.00082	.00082	.00082	--
Average weight per U.S. standard gallon at 70° Fahrenheit	lbs.	7.2	7.14	7.2	--
Coefficient of expansion:					
Per degree Fahrenheit	coef.	.000525	.000525	.000525	--
Per degree Celsius	do.	.000945	.000945	.000945	--
Refractive index at 20° Celsius:					
Typical index	Index	1.470	1.466	1.468	--
Specification range (U.S. standard)	do.	1.465-1.478	1.465-1.478	1.465-1.478	--
Refractive index change per degree Celsius	do.	.00045	.00045	.00045	--
Distillation range, U.S. standard:					
Initial distillation temperature	°C	150-160	150-160	150-160	--
Distilling below 170° Celsius, minimum	Pct.	90	90	90	--
Flash point range:					
Tag closed cup	°F	90-95	90-95	90-95	--
Cleveland open cup	do.	100-110	100-110	100-110	--
Aniline point, typical range	°C	14-25	18-25	14-25	
Composition of American turpentines:	Pct.				
Alpha-pinene	do.	60-65	75-80	60-65	50-65
Beta-pinene	do.	25-35	2	25-30	20-30
Dipentene and other monocyclic terpenes	do.	5-8	15-20	5-7	16-18
Camphene	do	--	4-8	0-2	0-2
Total		100	100	100	100

-- = Not available.

Cotton, Cottonseed, and Cottonseed Products

Computation and use of factors

Basis of computation. Factors have been computed on the basis of the 5-crop seasons from 1971/72 through 1975/76 and represent ratios of the 5-season averages. The 5-season average was used to bring the factors more nearly into conformity with current experience.

Use of factors. Users of these factors are cautioned with respect to the following limitations: The factors are not "official," even though they are based upon latest available official figures. Nor are they permanently fixed at the stated values because later information and shifts in relationships may necessitate revisions. Since basic data underlying certain series have differing variabilities, it should be kept clearly in mind that application of the factors will not necessarily result in the most satisfactory figure for use in current work if other evidence suggests that base period relationships are not continuing. Factors should be applied to U.S. totals only and not to State or area totals. These factors apply to full-season totals only.

Definitions

Seed cotton -- Cotton as harvested but before ginning. It is the raw product which has been harvested and contains the lint, seed, and foreign matter.

Ricked seed cotton -- One of two forms used to store seed cotton in the field before ginning. It is a free standing stack of seed cotton which has been mechanically compacted (to about 7 to 8 pounds per cubic foot) after harvesting into a form of varying length, 20 to 200 feet, 4 to 5 feet high, and about 7 feet wide. Because it sits on the ground, the rick is not often used in areas of frequent rainfall.

Module seed cotton -- One of two forms used to store seed cotton in the field before ginning. Modules may be 24 to 32 feet long and about 7 feet wide. Stripped cotton is mechanically compacted 9 to 12 pounds per cubic foot to a height of 9 to 10 feet. Picked cotton is compacted to 10 to 13 pounds per cubic foot to a height of 7 to 8 feet.

Lint -- Cotton which has been separated from the seed by the ginning process.

Bale -- A package of compressed cotton lint as it comes from the gin. Including the bagging and ties, it weighs about 500 pounds and its dimensions vary depending upon the degree of compression that may range from 12 to 32 pounds per cubic foot. A bale is the form of package by which cotton moves in domestic and foreign commerce. However, cotton is bought and sold on a net weight (pound or kilogram) basis.

Running bale -- Any bale of varying lint weight as it comes from the gin.

480-pound net weight bale -- An average bale weight used to maintain statistical comparability. It has superseded the formerly used term, 500-pound gross weight bale.

Universal density bale -- A bale pressed in a gin or repressed in a compress one time to a density of at least 28 pounds per cubic foot.

Tare -- Weight of the ties (or bands) and bagging materials which contain the bale. The weight of these packaging materials varies and is excluded from the reported or sale weight of the lint. The bands can be steel straps or wire. The bagging material can be jute, woven polypropylene fiber, or polyethylene plastic film, or cotton (woven or warp knit) depending on the type of bale packaged.

Oilseed -- The cottonseed which is crushed for the oil and meal.

Planting seed -- The cottonseed that is planted. Seed not planted is crushed in oil mills for the oil, meal, linters, hulls, etc.

Motes -- Immature cottonseeds with fiber attached.

Linters -- Short fibers which remain attached to the cottonseed after ginning. They are separated from the seed and used in cushioning products, as stuffing, or as a source of cellulose for a variety of chemical products.

Table 81--Cotton bale size by various agencies in compiling statistical data

Agency	Bale size	Statistical data
U.S. Department of Agriculture:		
Economics, Statistics, and Cooperatives Service	480-pound net weight	U.S. production
Foreign Agricultural Service	do.	U.S. exports 1/
International Cotton Advisory Committee	478-pound net weight	World production, imports, exports, stocks, and consumption
U.S. Department of Commerce, Bureau of the Census	480-pound net weight	U.S. production and imports
	Pound	U.S. imports, mill stocks, exports, and consumption
	Running bale	U.S. production, exports, stocks, and consumption

1/ Net weight of 480 pounds lint is used for most countries beginning with 1946, and 478 pounds for prior years.

Table 82--Factors for converting cotton acreages, cotton, and cotton products to various equivalents 1/

From	To obtain	Multiply by
Acreage:		
Planted	Acreage harvested	0.932
	Cottonseed produced, tons	.358
	Cottonseed crushed, tons	.338
	Cotton produced, 480-pound bales	.919
	Cotton produced, pounds	.441
	Linters, pounds	60.700
	Linters, tons	.030
Harvested	Acreage planted	1.073
	Cottonseed produced, tons	.384
	Cottonseed crushed, tons	.362
	Cotton produced, 480-pound bales	.986
	Cotton produced, pounds	.473
	Linters, pounds	65.200
	Linters, tons	.033
Cottonseed produced:		
Tons	Cottonseed crushed, tons	.944
	Linters, tons	.085
Pounds	Seed cotton, pounds	1.616
Cottonseed crushed, tons	Linters, tons	.090
	Cottonseed crude oil produced, tons	.161
	Cottonseed meal produced, tons	.451
Cotton produced: 480-pound bales	Cottonseed produced, tons	.389
	Cottonseed crushed, tons	.367
	Cottonseed crude oil produced, tons	.059
	Cottonseed meal produced, tons	.166
	Linters, tons	.033
Pounds	Cottonseed produced, pounds	1.622
	Cottonseed crushed, pounds	1.531
	Cottonseed crude oil produced, pounds	.246
	Cottonseed meal produced, pounds	.691
	Linters, pounds	.138
	Seed cotton, pounds	2/ 2.622
Cotton:		
480-pound bale	Running bales	.961
Running bales	480-pound bales	1.040
Seed cotton, pounds	Cotton produced, pounds	2/.381
	Cottonseed produced, pounds	2/.619

1/ All figures based on the 5-year average, 1971/72-1975/76. 2/ Cotton production plus cottonseed production. Cottonseed for planting: The 1971/72-1975/76 5-year average quantity of cottonseed used for planting 1 acre of cotton was 27.4 pounds per acre. One pound per acre equals 1.12085 kilograms per hectare. One kilogram per hectare equals 0.89218 pound per acre.

Table 83--Factors relating to cottonseed products 1/

Product	Factors for converting cottonseed products to	
	Tons per ton	Pounds per ton
Crude oil	0.161	322
Cake and meal	.451	902
Hulls	.251	502
Linters	.090	181
Waste	.047	93

1/ All figures are based on the 5-year average, 1971/72-1975/76.

Table 84--Space displacement of cotton and cotton products 1/

Product	Cubic feet per short ton	Pounds per cubic foot
Seed cotton:		
Untramped	400	5
Ricked	286-333	6- 7
Module		
Stripped	167-222	9-12
Picked	154-200	10-13
Cottonseed:		
Dry, delinted	57	35
Dry, not delinted	80-111	18-25
Hulls	167	12
Oil	35- 36	56-57
Cake, crushed or lumpy	44- 50	40-45
Meal, extracted	50- 57	35-40

1/ Industry sources.

*U.S. GOVERNMENT PRINTING OFFICE : 1979 0-280-931/ESCS-48

Table 85--Scoured yield of greasy shorn and pulled domestic wools

Grades	Domestic production of greasy wool 1/	Scoured yield 1/	
		Shorn	Pulled
		Percent	
Fine; 64's and finer	29.0	46.0	67.0
1/2 blood; 60's and 62's	14.7	47.0	72.0
3/8 blood; 56's and 58's	26.4	56.0	79.0
1/4 blood; 50's and 54's	24.6	59.0	81.0
Low 1/4 blood; 46's and 48's	4.6	61.0	82.0
Common and braid; 36's, 40's and 44's	.7	64.0	84.0
Weighted average, all grades	100.0	52.8	72.9

1/ Based on Current Industrial Report: MA-22M, "Stocks of Wood and Related Fibers," Bur. of the Census, U.S. Dept. Comm., 1971-76 reports. Percent of production by grade was based on the stocks reports and wool supply and use data for 1971-75.

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