SHELF LIFE

"How long will this keep?" is the defining question of food storage. Everything you read in this work revolves around this central question. The length of time a particular food will remain palatable and nutritious in storage determines its usefulness for our purposes. The fact of the matter is that there are few hard and clear answers. As a result it is not uncommon to find two or more sources that purport to know, but give conflicting advice. The following will hopefully cut through some of the fog.

A. "BEST USED", "USE BY" AND OTHER FOOD PRODUCT DATES

Although there are some twenty States in the U.S. that have food product dating laws the Federal government has little regulation concerning food product dating except for infant formulas and some baby foods. It does, however, require that if a manufacturer puts a calendar date on a food product it must also put wording to the effect of "use by" or "best before" next to it to explain what the date means. This is called "open dating" which is to say that it is a plain, easy to read calendar date rather than "closed or coded dating" that must be deciphered. Another date also commonly seen is the "sell by" date. While not as useful for food storage, it does have importance for day-to-day fresh food purchases.

Because there are few Federal food product dating standards manufacturers use their own to determine acceptable shelf lives. For the most part, these are based upon changes in a product's texture, appearance, taste and cooking qualities. When a food item begins to exhibit signs of aging that would make it unappealing to potential customers it is considered to be at the end of its marketable shelf life. Look for statements such as "use by", "best if used by", "best if used before" or similar wording to find this date. For shelf stable and frozen products it must include both the day, month, and year. These dates are useful for determining how long a product should be retained in storage before it ought to be rotated out. By the time a food begins to undergo taste and appearance degradation the more sensitive nutrient content will have seriously faded so should be rotated out of storage, eaten, then replaced with fresher stock. If the product was properly preserved and not subjected to extreme storage conditions it is not unsafe to use after this date. If there is nothing to replace it with it may be kept still longer, but the palatability and nutritive content will only continue to degrade.

Fresh food items such as meat, milk and eggs use a "sell by" date which simply means that the item should not be purchased beyond that date. Products using this date type are only required to use the day and month. Provided that it was

properly transported and stored, an item kept past this date is not unsafe to use, but will begin to exhibit signs of aging that will make it unappealing and should be frozen or consumed shortly thereafter.

NOTE: The shelf life of any food, whether indicated with a "use by" or "sell by" date or found on some chart, is predicated upon assumed storage conditions. If the actual storage conditions are different from these assumptions then the shelf life will naturally vary. As is explained in *Section I: Time, Temperature, Moisture, Oxygen and Light*, environmental storage conditions have a major impact on the length of time any foodstuff will remain palatable, nutritious and even whether it will remain safe to eat.

As a general rule, when a shelf life is given for a non-refrigerated food, it is for conditions of 70° F in a dark, dry location unless stated otherwise. *Be sure to read the fine print on any shelf life chart you may come across so you will know what its values are predicated upon.* There are some floating around giving shelf lives of foods in storage temperatures as low as 40° F. At that temperature you would expect to keep your fresh butter, eggs and milk, but few have the ability to keep any significant amount of canned goods in so cool a storage area.

Regardless of what the date or chart may indicate a food subjected to poor storage conditions will become non-nutritious, unpalatable, perhaps unsafe to eat even though its listed time is not yet up. An example of this would be keeping egg salad at room temperature for several hours at a picnic. The eggs may have been laid yesterday, but you are taking your chances if you eat it. Never put blind faith in any date. Always keep in mind that they are predicated on unspoken assumptions. IF THE CONTAINER IS BULGING, MOLDED, FOUL SMELLING OR SPEWS LIQUID WHEN OPENED, THROW IT OUT! But throw it out safely so that children and animals cannot get into it.

Please see *Section III: Spoilage* for further information.

B. CLOSED DATING CODES USED BY SOME FOOD MANUFACTURERS

In spite of the fact that increasing numbers of food processing companies are moving to open dating this is not yet universal. For those products that do not come with a plain "best used by" date it is still possible, albeit with more difficulty, to determine the rotation period for that specific product.

For a processor to move their product in interstate commerce it must exhibit a *packing code*. This allows them to easily track their product for purposes of stock

rotation and in the event of a recall. These packing codes are usually a series of letters and numbers that indicate dates, times, and sometimes places of manufacture. These dates are not "use by" dates, but the time when the container was actually filled. As they are not intended for general public knowledge these codes are frequently unique to a particular processor and are not commonly published.

It is possible to get the keys to these codes by contacting the processor and asking how to decipher the dating code for specific product lines. Over time, readers have been doing this and the code keys below are the ones that I have found or been sent to me. Obviously, they are only a few of the many, many products that use closed dating and I hope that future readers will continue to send these codes in as they are gleaned from the processors.

Frankly, when it comes to the potential hundreds of products that would require deciphering their packing codes the entire process is a nuisance. While it is better to have an encoded date than not to have one at all, it would be better still if processors would use clear open “best used by” dating so we wouldn't have to carry a book of code keys like covert agents every time we go to the grocery. Should you happen to call a processor customer service number you might encourage them to do just that.

Before I list specific manufacturers there is one fairly widely used code key that may be useful. Some processors use a system where all the days of the year are listed 1-365 (366 for leap year) as the first three digits in the code. This number is then followed by a single letter such as "B" and then by a single digit that represents the year.

Some examples of this might be:

Packing code	Date packed
045B03	February 14, 2003
121H02	May 1, 2002
187K99	July 4, 1999
304U98	October 31, 1998

There may be other widely used coding systems yet to be discovered and as they become available I will include them in this work.

Specific Product Lines

IMPORTANT NOTE: I have not personally verified all of these code keys. Also, closed date coding schemes may change over time. For this reason, the code keys given below may not always be correct. Check a number of containers

in a product line to verify that a particular code key will work with the product line in which you are interested.

ARMOUR STAR CANNED MEAT PRODUCTS

Vienna Sausage, Stew, Chili, Deviled Ham, Potted Meat, Slice Dried Beef, Soups, etc. but does NOT include Armour Star Roast Beef or Corned Beef.

The code is on the bottom of the container. The first letter is the month of production; A=January, B=February, C=March and so on. The following two numbers represent the day of the month it was processed and the third number indicates the year.

Example: A code of B148C23 would be B=Feb, 14 = the fourteenth day, 8=1998. B148C23=February 14, 1998 and the last three characters would be plant or processing line locations.

Armour Star Microwaveable Meals have a two line production code on the container lid. The second line is the is date and uses the same code as above.

BERTOLLI OLIVE OIL

Packed two years prior to the use by date on the bottle or can.

BUSH BROTHERS & CO.

Baked beans, chili, etc.

A five digit code on the bottom of the can. The first digit is the month, the next two digits is the day of the month, the next number is the year and the last digit is ignored.

Example: A code of 50173 deciphers to be:

5 = the fifth month or May
01 = the first day of May
7 = 1997
3 = last number is discarded.

Thus 50173 is May 1st, 1997.

CAMPBELL SOUPS

Best by date on cans. Filled exactly two years prior to that date.

DEL MONTE

Canned fruits, vegetables, etc. I'm not sure if it applies to *all* product lines.

A five character packing code, usually on the bottom. The first character is a digit representing the year. The next three characters are digits representing the day of the year the product was packed. The last character is a letter and may be ignored.

Example: A packing code of 8045B deciphers to be:

8 = 1998
045 = The 45th day of the year or February 14th.
B = A plant code.

Thus 8045B is February 14th, 1998.

GENERAL MILLS

The manufacturing date is coded to their fiscal year that begins on June 1st and ends on May 31st.

Interpret the code as follows:

The first character of the code is a letter and represents the month the product was made.
The second character in the code is a number which represents the year the product was made.
The following two characters are numbers that represent the day of the month the product was made.
The remaining characters following identify plant location and shift information.

Example: A packing code of E731B would translate as follows:

E = October
7 = 1997
31 = 31st day of the month
B = A plant location

The following is their 12 month cycle. The letter "I" is not used because it can be confused with the number "1".

A = June E = October J = February
B = July F = November K = March
C = August G = December L = April
D = September H = January M = May

HANOVER FOODS CORP.

Small whole potatoes, green beans, corn, etc.

A five digit code on the bottom of the can. Omit the first digit. The next digit is the year. The remaining three digits are the day of the year the product was packed.

Example: A code of 28304 deciphers to be:

2 - discard this number
8 = 1998
304 = the 304th day of the year or October 31st

Thus 28304 is October 31st, 1998

HEALTHY CHOICE

First character is a number, second is a letter with the remaining characters being a lot ID. The number is the year it was packed with the letter being the month, October = A, November = B, December = C, January = D, and so on through the year. The recommended shelf life is 2 years.

HORMEL PRODUCTS

Their packing code is a letter followed by five numbers. The letter is their plant location and the numbers are the dating code in a MM-DD-Y format.

Example: A code of G07048 decodes to mean:

G = plant location
07 = July
04 = The fourth day of the month
8 = 1998

The can was packed July 4, 1998 at plant location G.

JELL-O BRAND PUDDINGS & GELATINS

The first four digits are the date coding. The first digit is the year and the following three digits is the day of the year.

Example: A packing code of 804522 10:38 deciphersas:

8 = 1998
045 = the 45th day of the year or February 14th
22 = discard the last two digits.
10:38 = the time it was packed.

Thus 804522 10:38 means that box of pudding mix was packed on February 14th, 1998 at 10:38 a.m.

McCORMICK HERBS & SPICES

There should be a four digit number of the bottom of the spice package or extract bottle. On foil packages, it will be around the outside edge. This code is more complicated than other manufacturers so read closely.

Example: Using a number 3604 as the packing code:

To derive the year, take the first number and add 5 (3 + 5 = 8) so 1998 is the year of manufacture.

To derive the month and day, divide the last three digits by 50 (604 ÷ 50 = 6 with 4 remaining). The six indicates the last whole or complete month before the month of production, January, February, March, April, May, and then June. The next month, July, is the production month. The 4 remaining is the day it was produced.

Therefore a packing code of 3604 means that product was packed July 4, 1998.

While not as precise, you can save considerable time by just finding the year. The last three digits representing the day and month will increase as the year grows.

MOUNTAIN HOUSE

(From the Mountain House web site)
Manufacture Date
The product manufacturing code appears on the back of Mountain House® pouches and on the bottom of Mountain House® cans. The date in the code represents the date on which the product was packaged. For pouches starting January of 2001 we are now printing BEST IF USED BY dates on the back of each pouch.

1989 and after:

EXAMPLE: 99028 CIA 99 = Year
028 = Julian Date (example = 28th day of the year = January 28)
CIA = Production Operator's Initials

Prior to 1989:
EXAMPLE: T20394D T = Year (example "T" = 1987; see below*)
203 = Julian Date (example = 203rd day of the year = July 22)
94D = Internal tracking system code number

*The year code can be understood as follows:
A 1970 F 1975 K 1980 R 1985
B 1971 G 1976 L 1981 S 1986
C 1972 H 1977 M 1982 T 1987
D 1973 I 1978 N 1983 U 1988
E 1974 J 1979 P 1984

WORNICK MIL-SPEC CIVLIAN MREs

Long Life Food Depot (The Wornick Company's civilian sales agent)
From
http://www7.mailordercentral.com/longlifefood/Faq.asp#heaterpouches
How long do MRE products last - what is their Shelf Life

We guarantee our MRE products to last 5 years from the date of sale, in a room temperature environment (70 deg. F), no matter what the production date.

Of course, the production date is visible on all our entrees and on most side dishes, desserts, and other components.

The production date is a four digit number (date code) on each item, example "2156." In this example the 2 represents the year 2002 (a "3" would represent 2003, etc.), the 156 represents the 156th day of the year. See the top of the individual box or look on pouch for the Date Code.

At this time nearly all of our MRE products were manufactured between 2002 and 2003 and have always been kept in a climate-controlled warehouse to ensure freshness.

PROGRESSO FOODS

Canned soups, beans, etc.

Two lines of code on top of the can. The top line, the first two characters are the date portion. The first character is a letter indicating the month and the second character is a digit indicating the year.

Example: A packing code of L7N18 1211 (this is the first line) would be:

L = 12th month or December
7 = 1997
N18 = ignored
1211 = ignored.

Thus a packing code of L7N18 1211 indicates the can was packed in December of 1997.

C. SHELF LIVES OF SOME COMMON STORAGE FOODS.

The chart given below has been adapted from a number of different shelf-life charts published by the cooperative extension services of several states. It presupposes no special packaging other than the way the food comes from the store. The general assumption is that when a given foods' taste, appearance or texture begin to take on noticeable changes it has reached the end of its best marketable shelf life and should be rotated out. This is not to say the food is no longer edible, but the nutritional content is declining at the same time so no good purpose is served by keeping the food for longer than is necessary to replace with fresher stock. For what it's worth, I'm not fully in agreement with this chart myself, but it's a good working hypothesis and in my home I modify it by my personal experience which may vary from yours. With dry foods only dry utensils should be used to remove them from their containers. The less light, moisture, heat and oxygen that comes into contact with your food, the longer the food will keep.

All of the below are for new, unopened packages as they come from the grocery.

RECOMMENDED FOOD STORAGE TIMES		
FOOD	**At 70° F. Keep the product:**	**STORAGE TIPS**
Baking powder	Till can date	Sealed & bone dry
Baking soda	2 years	Sealed & dry
Biscuit, brownie, muffin mix	9 months	Sealed, cool, dry, weevil proofed
Bouillon, cubes or granules	2 years	Sealed, cool and dry
Cake mixes, regular angel food	9 months 1 year	Sealed, cool, dry, weevil proofed Sealed, cool, dry, weevil proofed
Canned food: metal can, non-acidic metal can, acidic	2 years 12-18 months 2-3 years	Cool & dry Cool & dry Dark , cool & dry

glass jars		
Chocolate, semi-sweet or unsweetened, bars or chips	18 months	Cool and dark
Chocolate syrup	2 years	Cool & tightly sealed
Cocoa, powder or mixes	8 months	Sealed and cool
Coffee, regular instant	2 years 1-2 years	Cool, dry and sealed
Coffee creamers, powdered	9 months	Sealed and cool
Cornmeal	1 year	Keep dry & weevil proofed
Cornstarch	18 months	Keep dry
Crackers	3 months	Keep dry & weevil proofed
Flour, refined white whole wheat	8-12 months 4-6 weeks	Dry & weevil proofed Keep dry, refrigerate or freeze for longer shelf life
Frostings, canned mix	3 months 8 months	Cool Dry and cool
Fruits, dried	6-12 months	Cool, sealed, weevil proofed
Gelatin, all types	18 months	Protect from moisture
Grains, whole	2 years	Dry and weevil proofed
Hominy, hominy grits, masa harina	1 year	Dry and weevil proofed
Honey	2 years	Cool, tightly sealed, dark
Jellies, jams, preserves	2 years	Dark, cool, tightly sealed.
Molasses & syrups	2 years	Tightly sealed
Mayonnaise	6 months	Cool & dark
Milk, condensed or evaporated non-fat dry	1 year 6 months	Turn over every 2 months Bone dry and cool
Nuts, vacuum canned other packaging in shell	1 year 3 months 4 months	Cool and dark Cool and dark – better refrigerated or frozen Cool, dry and dark – better refrigerated or frozen
Pancake mix	6-9 months	Dry and weevil proofed
Pastas (macaroni, noodles, etc)	2 years	Dry and weevil proofed
Peanut butter	6-9 months	Sealed, cool, dark

Peas and beans, dry (not soybeans)	2 years	Dry and weevil proofed
Potatoes, instant	6-12 months	Dry and weevil proofed
Pudding mixes	1 year	Cool and very dry
Rice, white brown flavored or herb	2+ years 3-6 months 6 months	Dry and weevil proofed Dry and weevil proofed, better refrigerated or frozen Sealed, dry and weevil proofed
Salad dressings	10-12 months	Sealed, dark, cool. Better refrigerated
Salad oils	6 months	Sealed, dark, cool. Better refrigerated
Sauce and gravy mixes	6-12 months	Cool and dry
Shortening, solid	1 year	Cool, dark, tightly sealed.
Soup mixes	1 year	Cool, dry, and weevil proofed
Sugar, brown confectioners granulated	2 years \ 18 months 2+years	Tightly sealed, dry Tightly sealed, dry Dry
Syrups (corn syrup based)	8-12 months	Sealed and cool
Tea, bags instant loose	18 months 3 years 2 years	Sealed and dry Sealed, dark, dry Sealed and dry
Vegetables, dried	1 year	Cool, dark, dry, weevil proofed
Vinegar	2+ years	Sealed
Yeast (dry)	Pkg expiration date	Cool, sealed, dry. Better frozen