

Alternative Open-Dating Techniques

Converting codes to open dates offers many possibilities. The date could be any of four possible dates, or a combination of dates, and there is a variety of ways the date could be presented.

Basically, the types of open dates are:

1. date of pack or manufacture,
2. pull date or sell-by date,
3. best-if-used-by date,
4. expiration date or use-by date, or
5. combination of two of the above.

The meaning of these dates is not necessarily obvious. The pack date refers to the day, month, and year the food product was processed or packed for retail sale. The pull or sell-by date refers to the last date the food product should be sold in order to allow the consumer a reasonable length of time in which to use it. The best-if-used-by date is the date after which the food is no longer at its most acceptable level of quality. The use-by date is the date after which the food is no longer at an acceptable level of quality.* The terms “pack,” “sell by,” and “best-if-used-by” will designate these alternative open dates, respectively.

METHOD OF OPEN DATING

This section is a general discussion of open-dating methods. Appendix A offers a detailed discussion by major food category of the advantages and disadvantages of each method.

*Food scientists make this distinction between use-by and best-if-used-by dates. Consumers do not necessarily see the difference. Many think either of these dates indicate the date at which food is no longer at an acceptable level of quality.

Pack Date

A pack date is the only date that could be put into effect in the near future if an open date were mandated for all food products. Compared with the other dates, it is also the least expensive because it requires only historic data—i.e., the time of the event is known without research or estimation. However, it may not be the best date for all food products.

The pack date, as defined above, has three problems:

1. the condition and length of time the product was held before being packaged is not considered,
2. some products such as fresh meat can be reconditioned and repackaged for sale, and
3. ages of separate components in a multi-component food such as a dried soup mix could vary.

In regard to the first point, some consumers feel that manufacturers store food in bulk for an unreasonably long time before putting it in the final package. Manufacturers, on the other hand, feel they should be allowed to hold commodities for as long as is economically expedient if they use ideal conditions of storage that minimize possible quality loss. Examples of kinds of foods that would fall in this category are foods frozen in bulk before being packaged, such as concentrated orange juice, some vegetables, concentrated milk to be used in ice cream, and flour.

For most perishable foods, a pack date would be of minimal value to the consumer if used by itself. For example, with milk and dairy products, it would only indicate the date the milk was processed or packaged. It would not give the consumer any information as to quality or how long the products should remain at a level of acceptable quality. For precut/prepackaged meats, poultry, and fish, the use of a pack date would give the consumer some information as to general product quality but may also give a false sense of quality assurance if the product is repackaged under different conditions to lengthen shelf life or if held in frozen storage for some period of time before being offered for retail sale.

For shelf-stable engineered or multicomponent foods, the shelf life is determined by the age and quality of the various components—which could vary widely. A pack date alone would give too little information for the consumer to make any estimate of quality or shelf life. Examples of these multicomponent

foods include dried soup mixes, cake mixes, canned mixed fruits and vegetables, helper-type meals, and meat substitutes.

Foods for which a pack date seems reasonable are prepackaged fresh fruits and vegetables. These food products are not processed to lengthen shelf life and cannot be frozen for any part of their storage life without serious alteration of product quality. Thus, the use of an open pack date would actually convey to consumers freshness information (assuming immediate packing after harvest).

The use of a sell-by or best-if-used-by date for prepackaged fresh fruits and vegetables would require the retailer to estimate when the product would reach its peak of ripeness or begin to exhibit significant and detectable loss of quality. Because fruits and vegetables of different varieties, and even within the same variety, may mature at different rates depending on the size, storage conditions, and other factors, such a date could not be established with a reasonable degree of accuracy.

Sell-by and Best-if-Used-by Dates

Information for scientifically determining these dates does not always exist, as for the pack date, so processors and manufacturers must frequently estimate or create a date. In order to set a valid sell-by or best-if-used-by date, the following information must be obtained:

1. a measure of some initial relevant quality factor that can be used to estimate a decrease in consumer acceptance,
2. a reliable method to measure that quality factor on a statistically sound basis,
3. the distribution system times and conditions,
4. the average time the product is held in the consumer's home before use, and
5. the amount of quality loss allowed before the product is considered unacceptable for sale at full price or for use.

A sell-by date could be set if the average time the product is in the distribution system

is known, but it must also assume some knowledge of how long it will take the average consumer to handle, store, and use the food in the home under conditions that will retain good quality. Thus, storage and distribution information is necessary to establish any date other than a pack date. If this knowledge is not available, the date is not meaningful and might be misleading.

There are regional problems involved with use of open dates for products such as dried snack foods, pasta, and breakfast cereals that are distributed nationwide and are subject to extremes in temperature and humidity conditions. For example, for any food where gain or loss of moisture is related to quality (e.g., loss of crispness in potato chips), a date for reaching the critical moisture content could be established for any given distribution area, but it could be costly to do.

If, on the other hand, the end destination is unknown, the date could be set for the worst possible conditions. The problem with this approach would be that a large percentage of the food going to areas of the country with moderate conditions would still be good when marked out of date. For example, if the open date must be set to allow for moisture gain in a high humidity area such as Mississippi, national distributors would either have to protect all packages against extreme conditions and charge consumers for such steps, or suffer product losses. These considerations could result in some companies withdrawing from national distribution.

The sell-by date is usually used in conjunction with foods that have a short shelf life after the date of sale, if properly handled. Milk and dairy products, such as yogurt, are labeled in this way, and, in fact, some packages may give further information as to days of shelf life beyond the selling date.

The sell-by date is the single most useful date for wholesalers and retailers. Its advantage is that it is unambiguous relative to the best-if-used-by date. Both wholesalers and retailers know the normal amount of time any given product requires to move through their

segment of the marketing system. This knowledge in combination with a recommended sell-by date gives the wholesalers and retailers the means to assure freshness through inventory control.

OTA's consumer survey found that the sell-by date is not the open date that consumers prefer for food products, however. In both the perishable, semiperishable, and long shelf-life food categories, consumers preferred the best-if-used-by date to the sell-by date or pack date. Except for prepackaged fresh meat, the sell-by date says little or nothing about when foods should be used or when the quality may be detectably worse.

A best-if-used-by date, on the other hand, does not permit wholesalers and retailers the same ease or potential accuracy in inventory management that a sell-by date allows. These dates require wholesalers and retailers to individually and subjectively determine allowance for home storage time on each individual product in order to calculate a sell-by date—i.e., the date they need for management purposes.

For processors, a best-if-used-by date is more useful than a sell-by or use-by date. They feel it is the most informative to the consumer and, with the exception of the pack date, the least arbitrary and restrictive. To the processors, the sell-by and use-by dates imply that at some moment in time a dramatic change will take place in the quality and suitability of the product. That is, before a given date, the product is acceptable; afterward, it is not and must be discarded. This, of course, is not true, but processors fear that consumers might interpret it this way. Therefore, they prefer the best-if-used-by date, feeling it carries the connotation that there is a slow but continuous loss of quality, and for the greatest satisfaction to the consumer, the food should be consumed by that date.

The best-if-used-by date is being examined by Codex Alimentarius, the international organization for food labeling standards. These standards say that for all products the first date that should be looked at is the date of

minimum durability, which translates to a best-if-used-by date.

A modification of the best-if-used-by date is the best-if-used-within date. In this instance, phraseology such as “best if used within 30 days of June 1” becomes a compromise between what retailers and consumers desire from an open date. For example, the best-if-used-by date indicates that the product should be used on or before the date specified. “Best-if-used-within” indicates the product should be used within 30 days of June 1. The difference between the **two** dates is that the former gives only a use-by date. The latter gives both a sell-by date and use-by date. In this example, the sell-by date is June 1. The use-by date is 30 days after, or July 1. These phrases offer an unambiguous sell-by date for the retailer, while at the same time giving consumers a use-by date.

To Remain in Grade Use- (Sell-) by Date

An alternative to a use- (sell-) by date or, more specifically, instead of “best-if-used-by” may be a term that would indicate how long a food may be held and yet remain at a quality level practically indistinguishable from that quality inherent in the original pack date. This may be accomplished by using a term such as “to remain in grade, use (sell) by.” For example, if a product is found to be of top quality and is graded and labeled “grade A,” “prime,” or “fancy,” the open date would indicate how long it may be expected to remain at top quality. If it is labeled “grade B” or “choice,” the open date would indicate how long the unit is expected to remain at the declared second quality level, etc.

Although such terminology would be limited to products that have precisely defined and generally recognized and accepted quality grades and standards, for those commodities where it could be used, it would have the advantage of specifying the quality levels expected to be retained—not just a vague “best,” or “acceptable.” A corollary benefit

would be that if the date should be exceeded before use (or sale), there need not be the implication that it is unsafe and should not be used.

Integrating open dating with grade labeling has the potential of simultaneously strengthening and appreciably reducing costs of implementing both. It may even be argued that grade labeling must include open dating, since “nothing is forever.” This may be the solution to the difficult problem of limiting the life of a grade after it is posted on a label. For example, a carton of eggs labeled “grade A” could be assumed to remain “grade A” forever unless the grade declaration would include an open date. This benefit need not be limited to perishables. In-grade life of relatively stable foods, such as canned vegetables, can vary substantially not only among commodities but even within commodities.

A disadvantage of an integrated system is that it would work only for those products where the grade is equated with freshness-quality attributes. Products such as beef, pork, lamb, and poultry would therefore be excluded, since the grade is based more on compositional/conformation characteristics.

Another disadvantage is that many consumers have little knowledge of what grades mean. So, equating an open date with a grade would result in consumer confusion.

Combination Dates

As reported in chapter II, the OTA consumer survey found that the most preferred dates were combination dates. Specifically, the combination of sell-by and use-by dates was most preferred, followed by a pack and use-by combination. Obviously, combination dates supply the most information to consumers.

Such a system is visualized as “retailer sell by” and “consumer use by” on the same product—similar to the best-if-used-within date, which is in itself a combination date. On some products, a combination date could give

the optimum information to both the wholesaler/retailer and the consumer. From a cost standpoint, combination dates would be more costly than a single date. In addition, multiple dates would take more label space, which from industry's viewpoint could be used for other information.

A key issue in using combination dates is whether they will result in consumer confusion or education. For example, it can be argued that if only one type of open date were used on all products, potential consumer understanding could be at a maximum. Conversely, if consumers were confronted with several different types of open dates, confusion could result.

If one accepts this "inverse" relationship, one could argue from a consumer viewpoint that a single type of open date should be used on all products, regardless of other factors, such as product deterioration. The alter-

native viewpoint is that even if this "inverse" relationship does exist, efforts could be made to educate consumers on the use of different types of dates.

Results from the OTA consumer survey lend support to the latter viewpoint in that they tend to refute such an inverse relationship. The results suggest that a majority of consumers think that combination dates would be beneficial on at least some products. Presumably, if the consumers thought different kinds of dates for different products would be confusing, they would not feel that combination dates would be useful.

The benefit of adopting a standardized open date for all products is simplicity. Wholesalers, retailers, and consumers would know or eventually learn how to use and deal with that standardized date. However, a standardized date may not be the optimum one for certain products.

IMPLEMENTATION

Storage Instructions

Based on the OTA survey and other surveys, it is apparent that consumers feel that as much information as possible should be included on the food package, including storage instructions as well as an open date.

As discussed earlier, the shelf life of food is based on some definite conditions of storage. If these differ significantly from those anticipated, the shelf life of the food will vary, being shorter if the actual conditions turn out to be more unfavorable, and being longer if they should be more ideal. Thus storage instructions, if observed, would enhance the usefulness of open dates, but they raise the increasingly critical problem of space on the label.

Processors in the OTA working group feel that the presently used instructions found on some food products such as "keep refrigerated," "keep in a cool, dry place," and "keep frozen until used" are adequate. In addition,

available space on the package is not adequate for elaborate storage instructions, and too many other regulations relating to required information and size of print used would be affected. There is little doubt that consumer education about proper storage instructions is an important—and necessary—part of open dating. Such education might be accomplished through use of television, pamphlets, or posters, however, rather than the package label.

Type of Date Marking

With respect to the actual date itself, consumers surveyed and consumer representatives on the OTA working group wanted the month, day, and year.¹ The most preferred

¹*Food Dating: Shoppers Reactions and The Impact on Retail Food Stores*, Market Research Report No. 984 (Washington, D. C.: U.S. Department of Agriculture, 1973).

form was "8 May 78" rather than "May 8, '78," "5/8/78," or "8/5/78" because of "possible confusion." (Such a form also takes up less space than "May 8, '78.")

Preliminary results from the 1978 consumer hearings held by the Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), and the Federal Trade Commission (FTC) support these findings. In fact, indications are that the vast majority prefer an alphanumeric date—"8 May 78" or "May 8, '78"—to a date in all numerals—"5/8/78" or "8/5/78."

Processors, wholesalers, and retailers have no significant problems with these preferences. However, the possible exclusion of the year could be made for highly perishable products such as fresh meat and bakery products, and omission of day of the month for long shelf-life foods. This is a common feature found in many countries that open date their food products.

As far as actual implementation goes, a three-letter designation could be used for the month: JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC. However, the fact that these designations require a combination of 20 letters, in addition to numbers, complicates high-speed printing operations. Still, too much confusion could result from using numbers alone. For instance, for the first 12 days of any month, the day of the month could also be the number of the month itself.

For some food packages, there are technological problems in printing dates. Frozen

food packages—especially cardboard—present a challenge because cardboard tends to return to its initial shape when a date is embossed on it; the wax loses its effectiveness as a humidity barrier if the date is cut into it; and inks do not mark well on wax.

The type of package employed should not influence the specific information provided by the date, but it could determine the particular technique by which the date and associated information are applied on the container. For example, it may be impractical and dangerous to emboss a retortable pouch, and some type of printing or sticker label might need to be designed. Also, it is generally acknowledged that open-date printing would have to be done at the point of packaging on preprinted labels with space left for an open date. It would be difficult to make labels with the proper information ahead of time because of the logistics of processing.

Despite the technological problems, the major impact on food manufacturers of applying open dates would be that more package space would be taken away from them which must be used for the label. This could lead to a decrease in the availability of small single-serving packages that may not have the added space required.

The impact on other groups would be the increased need for education. Precision and brevity of terms and easily recognized dates are important for the consumer to understand the date itself as well as to help those involved in the distribution and marketing system.

EXEMPTIONS

There are specific food products that should be exempted from open dating. These are: a) bulk fresh fruits and vegetables—those products sold unpackaged at produce counters; b) fresh meats, poultry, and fish that are cut and prepared in the retail store, are not frozen at any time during their storage life, and are not packaged in any con-

tainer or wrapping prior to sale; c) salt; and d) crystallized refined sugar.

The principal reason for exempting bulk fresh fruits and vegetables and fresh meat, poultry, and fish from open dating is that the quality of these products is normally deter-

mined by sight, touch, and smell before purchase is made. Because these products are subject to varying rates and types of deterioration, including physical destruction as a function of consumer handling, it would not be possible to arrive at a meaningful shelf-life date for each product. There would also be problems in physically placing a date on individual items, and the cost of such a program would be prohibitive.

A date of any kind is not meaningful for

certain foods such as salt and crystallized refined sugar, which when held under proper conditions are good for 10 to 20 years. These products however, do not have an infinite shelf life because if held at high humidity, they can cake. From a practical viewpoint, though, there are very few situations in which food is actually stored 10 to 20 years. These foods could be said to have a shelf life so long that it is not a relevant factor in their purchase or use.