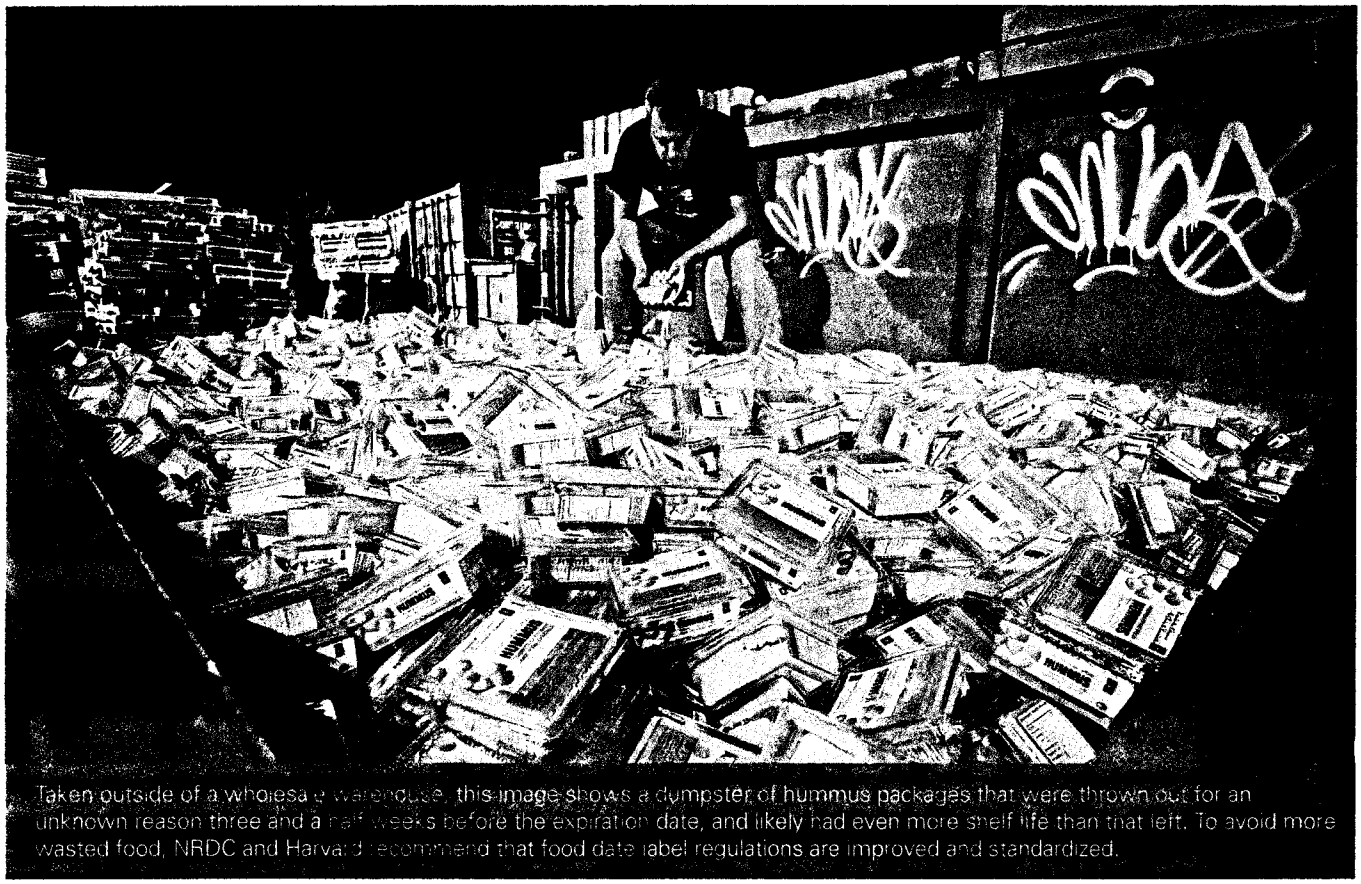
EXHIBIT 5
DATE 2-11-15
HB 388

The Dating Game:
How Confusing Labels Land Billions of Pounds of Food in the Trash



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Taken outside of a wholesale warehouse, this image shows a dumpster of hummus packages that were thrown out for an unknown reason three and a half weeks before the expiration date, and likely had even more shelf life than that left. To avoid more wasted food, NRDC and Harvard recommend that food date label regulations are improved and standardized.

THE EXPIRATION DATE MYTH

Here's a superbly-kept secret: All those dates on food products—sell by, use by, best before—almost none of those dates indicate the safety of food, and generally speaking, they're not regulated in the way many people believe. The current system of expiration dates misleads consumers to believe they must discard food in order to protect their own safety. In fact, the dates are only suggestions by the manufacturer for when the food is at its peak quality, not when it is unsafe to eat.

NRDC
THE EARTH'S BEST DEFENSE

Harvard
Food Law and Policy Clinic
A Division of the Center for Health Law and Policy Innovation

This brief is a summary of a joint report of NRDC and the Harvard Food Law and Policy Clinic.

20 PERCENT OF FOOD WASTED IN BRITISH HOUSEHOLDS IS DUE TO MISINTERPRETATION OF DATE LABELS. IF THE SAME WERE TRUE FOR THE U.S., IT WOULD MEAN THE AVERAGE HOUSEHOLD IS DISCARDING $275-455 PER YEAR OF GOOD FOOD BECAUSE OF CONFUSION OVER DATE LABELS.

Faced with a range of phrases and dates stamped on food products, few of which are defined or regulated, consumers misinterpret date labels. Erring on the side of caution and hoping to avoid spoiled or unsafe food, many Americans wind up tossing food out when it is often still good to eat. One industry survey showed that 91 percent of consumers had thrown away food out of concern for its safety when the date they referred to was actually intended to communicate to the store that the product did still have shelf life left.[1]

This misinterpretation of dates costs money. Americans spend between $1365 to $2275 per household of four on food that is ultimately thrown out.[2] While there is no research to indicate how much of that is due to expiration date confusion here in the U.S., a British study estimated that 20 percent of food wasted in British households is due to misinterpretation of date labels.[3] If this same estimate were true for the U.S., it would mean that the average household is discarding $275 to $455 per year of good food because of confusion over date labels.

Businesses are paying as well. An industry report concluded that about $900 million worth of expired product is removed from the supply chain annually.[4] While not all of this was due to confusion, a casual survey of grocery store workers found that even some employees themselves do not distinguish between different kinds of dates.[5]

In addition to the financial costs, all of the resources required to grow food are wasted along with the food itself. In total, about 40 percent of food is never eaten in the United States.[6] Producing that uneaten food accounts for an estimated 25 percent of the water and 4 percent of oil consumed in the U.S.,[7] and putting it in the garbage makes food the number one product filling up our landfills today, where it produces the powerful greenhouse gas methane.[8] All this while one in six Americans is unable to provide a secure supply of food to the table year round.[9]

A more standardized, less confusing date labeling system across the U.S. would help consumers maximize the value of their food budgets while eliminating waste of food and resources.

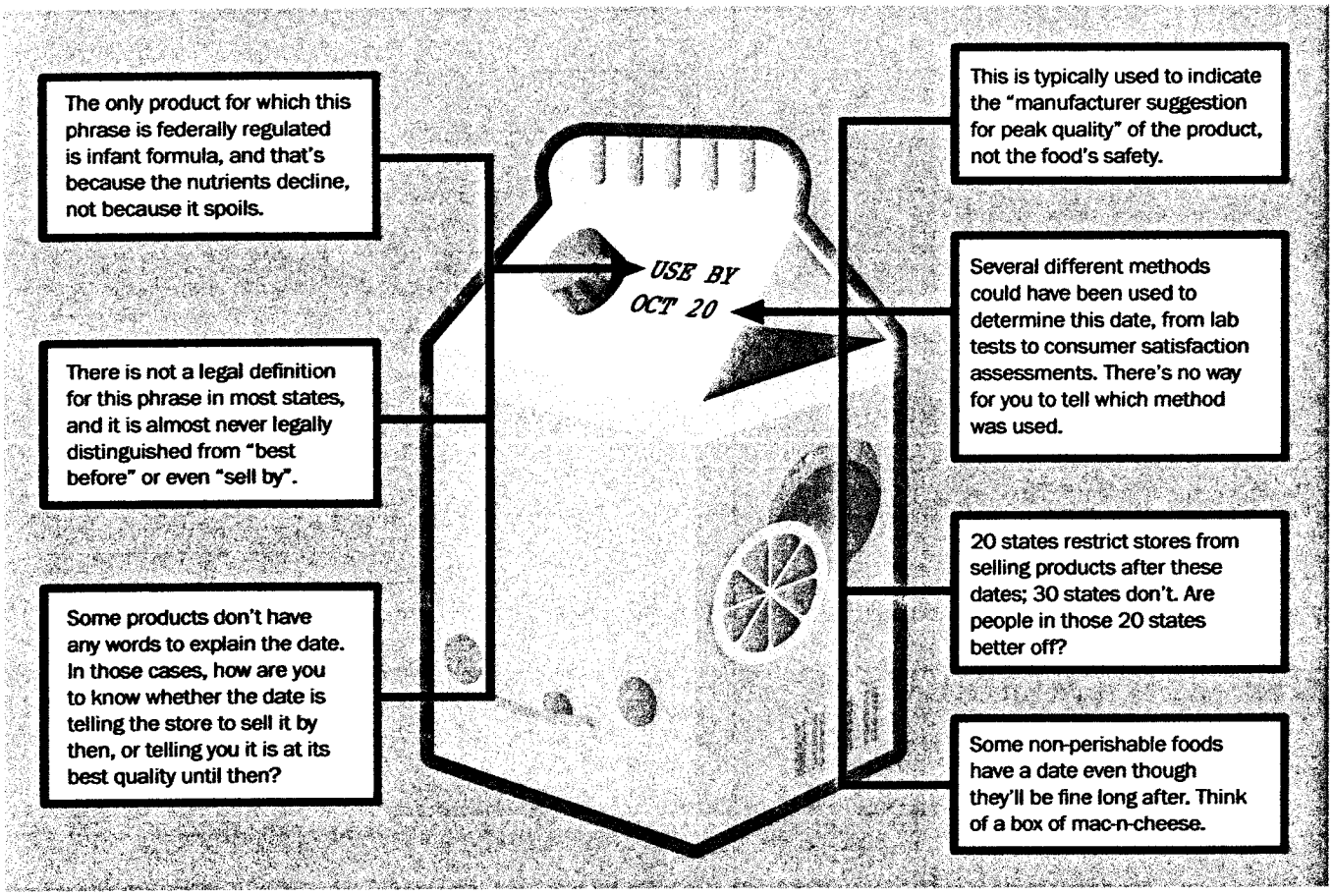
THE HISTORY

Expiration dates on food arose out of a concern for the food's freshness, not its safety. As Americans moved off farms over the 20th century and grew more distant from their source of food, they began losing the ability to tell how fresh their food was. This was partly because they were purchasing it in a store and didn't know its history, and partly because the knowledge of how to store and handle fresh food was progressively lost as processed foods became prevalent. Forced to trust manufacturers and grocery stores to supply them with fresh food, consumers began demanding verification of its freshness.

Consumer unease grew, and by 1975, a nationwide survey of shoppers showed 95 percent of respondents considered open dating—the use of date labels in a format consumers would understand—to be the most useful consumer service for addressing product freshness concerns.[10] However, even government supporters of open dating at that time recognized that assuring the microbiological safety of food was not a goal that could be meaningfully advanced using date labels. Indeed, the Congressional Office of Technological Assessment flatly stated that "there is little or no benefit derived from open dating in terms of improved microbiological safety."[11]

The widespread concern over freshness led to the introduction of over 10 Congressional bills between 1973-1975 alone to establish requirements for food dating. In 1975, the General Accounting Office (later the Government Accountability Office or GAO) issued a report to Congress focusing on "problems with stale or spoiled foods" and advocating for a uniform date labeling system to address consumer concerns.[12] The report warned that failure to implement a national system would "add to confusion, because as open dating is used on more products, it would continue letting each manufacturer, retailer, or State choose its own dating system."[13]

Indeed, this is precisely what happened. None of the legislative efforts at the federal level gained enough momentum to pass into law and create a uniform, nationwide system.[14] Instead, the 1970s saw the uneven and piecemeal creation of an American date labeling regime with state governments and industry actors responding to consumer interest in fresh, unspoiled food in a range of ways, but with no unifying strategy.[15]



WHO REGULATES DATES?

Congress has never mandated a national date labeling regime; however, it has delegated general authority to both the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA) to ensure food safety and protect consumers from deceptive or misleading food package information. Under that authority, both FDA and USDA have the power to regulate food labeling for the foods that fall under their respective purviews—meat, poultry, and certain egg products under USDA, all other foods under FDA. In practice though, neither agency exercises its authority with regard to date labels. In fact, the only product for which a date label is federally regulated is infant formula (and that is because the nutrients decline over time, not because of concern over foodborne illness). The USDA also limits the wording that is allowed to be used for their products (if a date is voluntarily used, or used in compliance with a state law) to certain phrases such as "packing" date, "sell by" date, or "use before" date. However, they never actually define those terms, and therefore their meanings can vary across manufacturers and products.

Without federal mandates, states have vast discretion to regulate date labels in almost any way they see fit. For example, New York does not require date labels to be applied to any products, while six of its neighboring states—New Jersey, Pennsylvania, Connecticut, Massachusetts, Vermont, and Rhode Island—have such requirements. Twenty states plus the District of Columbia have regulations addressing sale of past-dated food products, while 30 states have no such restrictions. In most states, regulations are applied to specific food products, like shellfish, milk or eggs, although a handful of states regulate perishable foods more generally.[16]

Even when a product is regulated, the specific rules vary across states. Take milk, for instance. Here's how the rules for milk vary across several states:

- In Florida, all milk and milk products "shall be legibly labeled with their shelf-life date," but shelf life date is never defined.
- In California, milk is required to have a date that the processor decides is the date "to insure quality, such product is normally removed from the shelf" but sale after that date is not restricted.
- In Montana, milk must have a "sell by" date within 12 days of pasteurization, while Pennsylvania requires it within 17 days.
- In New Hampshire, a "sell by date" is required for cream but not milk.
- New York, Texas, and Wisconsin, among many other states, have no requirements for date labels on milk or dairy.

MANY PEOPLE DON'T REALIZE THAT THE AMOUNT OF TIME FOOD SPENDS IN THE TEMPERATURE DANGER ZONE (40° TO 120° DEGREES FAHRENHEIT) IS THE MAIN CRITERION THEY SHOULD USE TO EVALUATE FOOD SAFETY, RATHER THAN TOTAL STORAGE TIME.

WHAT DO THE DATES ACTUALLY MEAN?

Because there is no uniformity with date labeling, it's impossible to guarantee the meaning of dates. Generally speaking, there are two main categories of dates: those that are designed to communicate among businesses in the supply chain, and those that intend to provide information directly to the consumer. Loose interpretations are below, but it is important to note that the meaning of these terms may vary from product to product and between manufacturers of the same products.

Dates meant for **businesses** to communicate with each other include phrases such as "pack date" and "sell by" date. These are loosely used to mean:

- **"production" or "pack" date:** the date on which the food product was manufactured or placed in its final packaging.
- **"sell by" date:** the manufacturer's suggestion for when the grocery store should no longer sell the product. This information helps stores with their stock rotation. The "sell by" date is often misinterpreted to mean a product is unsafe to eat, but in fact, "sell by" dates are typically designed as a way for the manufacturer to ensure the grocery store that if a product is sold by that date, it will still be of good quality for a reasonable amount of time after it's purchased.

The second category encompasses those dates that are meant to communicate directly with the **consumer**. These are "use by," "best by," "best if used before," "guaranteed fresh until," etc.... As explained by the FDA, these dates are typically "manufacturer suggestions for peak quality." These are loosely used to mean:

- **"best if used by" or "best by" date:** the manufacturer's estimate of a date after which food will no longer be at its highest quality;
- **"use by" date:** also typically a manufacturer's estimate of the last date recommended for the use of the product while at peak quality;
- **"freeze by" date:** a guide for consumers to know by when to freeze a product. Often used in conjunction with another date, in case the consumer chooses not to freeze the product.

For the vast majority of products, manufacturers use their own methods to determine the length of shelf life and the dates to list. Some use lab tests, others use literature values, and yet others use product turnover rates or consumer taste testing.[17] A key motivation behind this decision is protecting the product's reputation.[18] In consumer testing, some manufacturers will allow for a level of change in quality over time before setting a date limit, whereas others set them more conservatively. As described by one food scientist and former food industry official:

> *If the product was designed, let's say, to be a 7 when it was fresh, you may choose that at 6.2, it's gotten to the point where [you] don't want it to be on the market anymore.... If it's 6.0, would most people still find it reasonably good? Absolutely.... But companies want people to taste their products as best they can at the optimum, because that's how they maintain their business and their market shares.*[19]

Thus, while open dating appears on the surface to be an objective exercise, consumer preferences and brand protection impact the way most of these dates are determined. In most cases, consumers have no way of knowing how a "sell by" or "use by" date has been defined or calculated, and the method of calculation may vary widely "by product type, manufacturer, and geography."[20]

DATE LABELS ON FOOD ARE NOT KEEPING YOU SAFE

The mistaken belief that past-date foods are unsafe leads directly to food waste, yet a false confidence in date labels may actually be a risk to consumer health and safety. Indeed, one study found that more than half of all American adults think the "use by" date is an indicator of micro-biological safety.[21]

Undue faith in date labels may be encouraging consumers to ignore the more relevant risk factors affecting food safety, including the importance of time and temperature control along the distribution chain. Many people don't realize that the amount of time food spends in the temperature "danger zone" (40° to 120° degrees Fahrenheit) is the main criterion they should use to evaluate food safety, rather than total storage time.[22] For instance, if someone leaves a product that requires refrigeration in a hot car for too long, it could actually be unsafe to eat even *before* the stated date on the package. When temperature abuse occurs or food is otherwise compromised, an open date becomes essentially meaningless, but consumers are likely to trust the label date and use the product anyway.[23]

Food safety experts agree that absent temperature abuse, many food products will be safe past their date labels, although there are exceptions for certain classes of "ready-to-eat" perishable foods and foods to be consumed by certain susceptible populations.[24]

Likewise, quality-based label dates are not considered relevant food safety indicators because a food will generally "deteriorate in quality to the point that it would not be palatable to eat before there [is] an increase in the level of food safety risk."[25] Quality-based label dates are generally set far before this spoilage point, meaning that there is a significant amount of time past the label date during which the food is still safe to eat and of good quality.

There is one area of food safety concern that does implicate date labeling as a potential solution to increase food safety: the risk of *Listeria monocytogenes* in ready-to-eat-foods, such as packaged sandwiches. Different from most foodborne pathogens, *Listeria* can grow and multiply even while under refrigeration.[26] For this reason, the federal government identified *Listeria* as a pathogen for which a safety-based date labels could be a useful preventive tool.[27] Still, these foods would have to be contaminated with *Listeria* to begin with and, because *Listeria* is destroyed upon cooking, this risk is generally limited to ready-to-eat foods that are not heated.[28] Finally, it should be noted that serious illness from Listeria occurs almost exclusively in susceptible populations like the elderly, those with compromised immune systems, and babies in utero.[29]

Given the confusion around current date labeling practices across the American food system, this concern only underscores need for a clearer dating system that incorporates both unambiguous language to explain the meaning of the date used and other important handling information.

WASTE NOT: RECOMMENDATIONS FOR CLEARER LABELS

It is due time for a well-intended but wildly ineffective system to go by the wayside. The new system should have reliable, coherent, uniform language that clearly communicates to consumers the meaning of dates as well as other safety and handling information. It should be the same throughout the U.S., and to the extent logical, across all types of foods. The following recommendations are broken into two sections. The first proposes key changes to the date labeling system, and the second identifies actions stakeholders should take to address the issue.

Standardize and Clarify the Food Date Labeling System Across the U.S.

1. Make "sell by" dates invisible to the consumer:

"Sell by" dates are business-to-business communications. They generate confusion and offer consumers no useful guidance once they have brought their purchases home. "Sell by" and other business-to-business date labels should be made invisible to consumers through coding or other methods, leaving only display dates that are intended to communicate with the consumer.

2. Establish a reliable, coherent, and uniform consumer-facing dating system:

A less confusing and more standardized system of date labels meant for consumers should be established, incorporating the following five recommendations

- **Establish standard, clear language for both quality-based and safety-based date labels:** The language used before dates on food products should be clarified and standardized to better inform consumers of the meaning of different dates. This means the words used 1) are uniform for a particular meaning across the country and across products; 2) are unambiguous in the information they convey; and 3) clearly delineate between safety-based and quality-based dates.

- **Include "freeze by" dates and freezing information where applicable:** Promote the use of "freeze by" or "use or freeze by" dates on perishable food products to help raise consumer awareness of the benefits of freezing foods and the abundance of food products that can be successfully frozen.
- **Remove or replace quality-based dates on non-perishable, shelf-stable products:** Removing "best before" or other quality dates from shelf-stable, non-perishable foods for which safety is not a concern would reduce waste of these products and increase the weight given to labels placed on products that do have safety concerns. Some type of date may still be useful, such as an indication of shelf life after opening (e.g. "Best within XX days of opening") or the date on which the product was packed (e.g., "Maximum quality XX months/years after pack date").
- **Ensure date labels are clearly and predictably located on packages:** Consumers should be able to easily locate and understand date labeling information on packages.
- **Employ more transparent methods of selecting dates:** Create a set of best practices that manufacturers and retailers can use to determine date labels for products, and consumers can learn about if interested.

3. Increase the use of safe handling instructions and "how to use" information:

Provide clear, pertinent food safety information alongside date labels. This could include additional phrases, QR codes that allow consumers to scan for more information, or "smart labels" like time/temperature indicators.

IT IS ABOUT TIME FOR A WELL-INTENDED BUT WILDLY INEFFECTIVE SYSTEM TO GO BY THE WAYSIDE.

The Role of Industry, Government and Consumers

Collaboration amongst different stakeholders and entities is necessary to achieve the changes described above. Each stakeholder has a role to play to improve the system. Three groups of stakeholders have been identified; solutions targeted at each group include:

Food Industry Actors: Industry actors can take meaningful steps to reduce date label confusion, reduce food waste, and improve consumer safety by:

- Converting to a system which adopts the recommended changes above: making "sell by" information invisible to consumers; establishing a standardized, easily understandable consumer-facing dating system; and providing more safe handling information;
- Selling or donating near-expiry or expired products;
- Educating consumers on the meaning of expiration dates and on safe food handling.

Government: Congress, federal administrative agencies, state legislatures, and state agencies should work towards a system of date labeling that is more standardized, more easily understood by consumers, and less arbitrary. The federal Food and Drug Administration and U.S. Department of Agriculture have existing authority to regulate misleading labels, and should use this authority to reduce confusion around date labeling. Otherwise, Congress can act to create over-arching federal legislation. Regardless of whether a federal law is passed, existing federal voluntary guidance should be strengthened and streamlined so that states following such guidance will begin to implement more similar state laws and regulations.

Consumers and Consumer-Facing Organizations: Increased consumer education—covering everything from the meaning of label dates, to the importance of proper refrigeration temperature, to strategies on how to determine whether food is safe and wholesome to eat—will be crucial regardless of whether policymakers decide to implement changes to the current date labeling regime or to maintain the status quo. Consumers can act now by beginning to educate themselves on date labels, food safety, and food waste.

With so many Americans in need of food, and the rest of us watching the incremental rise in our grocery bill, there is no sense in tossing out perfectly good food in the mistaken name of food safety. Commonsense labeling, consumer education and redistribution can move a maddeningly wasteful food system towards a "Waste not, Want not" model, one that serves our health, pocket books, and the environment all at the same time.

Endnotes

1 Food Mktg. Inst. RESEARCH, U.S. Grocery Shopper Trends 144 (2011). This survey found 91 percent of consumers reported discarding food on its "sell by" date out of concern for safety. However, the "sell by" date is actually designed to tell the store the product does still have shelf life left. An older study found that sixteen percent of consumers typically throw out milk on its "sell by" date. Theodore P. Labuza & Lynn M. Szybist, Open Dating of Foods 7 (2001).

2 Jonathan Bloom, American Wasteland xi (Da Capo Lifelong Books, 2011). Page 187

3 Brook Lyndhurst, WRAP, Consumer Insight: Date Labels and Storage Guidance (2011), *available at* http://www.wrap.org.uk/sites/files/wrap/Technical_report_dates.pdf.

4 Raftery Res. Network, Inc., Expired Product Project, Developed for the Joint Industry Unsaleables Steering Comm. of Grocery Mfrs. of Am. & Food Mktg. Inst. 2 (July 2003), *available at* http://www.gmaonline.org/downloads/research-and-reports/expiredproducts.pdf.

5 NRDC visited several grocery stores and asked employees who were stocking about their policy for removing products from shelves. During these conversations, several respondents indicated no distinction was drawn between business facing "sell by" dates and consumer-facing "use by" or "best by" dates.

6 Kevin D. Hall et al., *The Progressive Increase of Food Waste in America and Its Environmental Impact*, 4 PLoS ONE 1, 2 (2009), *available at* http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0007940.

7 Id.

8 Wastes: Reducing Food Waste for Businesses, U.S. Envtl. Prot. Agency, http://www.epa.gov/wastes/conserve/foodwaste/ (last visited Sept. 16, 2013).

9 Alisha Coleman-Jensen, Mark Nord, Margaret Andrews, and Steven Carlson, U.S. Dep't of Agric. Econ. Research Serv., Household Food Security in the United States in 2010 (September 2011), *available at* http://www.ers.usda.gov/publications/err-economic-research-report/err125.aspx#.UjdUx9Ksim4.

10 U.S. Gov't Accountability Office, MWD-75-19, Food Labeling: Goals, Shortcomings, and Proposed Changes 44 (1975), *available at* http://www.gao.gov/assets/120/115505.pdf.

11 Office of Tech. Assessment, Open Shelf-Life Dating of Food 1 (1979), *available at* www.princeton.edu/~ota/disk3/1979/7911/7911.pdf.

12 Gov't Accountability Office, *supra* note 10, at 43.

13 Id. at 49.

14 One bill did eventually pass the Senate. See Office of Tech. Assessment, *supra* note 11, at 3.

15 Gov't Accountability Off., *supra* note 10, at 44, 47; Inst. of Food Technologists, *Open Shelf-life Dating of Food*, 35 Food Tech. 89-95 (1981).

16 Massachusetts has adopted one of the more extreme approaches in this regard, requiring a "sell by" or "best if used by" date for the sale of all perishable and semi-perishable foods. 105 Mass. Code Regs. § 520.119(D) (2013).

17 Eastern Research Grp., Inc., Current State of Food Product Open Dates In The U.S. 3-11 (2003), *available at* http://foodrisk.org/default/assets/File/Food_Open_Dating.pdf.

18 Id. at 3-2.

19 Dan Charles, *Don't Fear that Expired Food*, NPR (Dec. 26, 2012), http://www.npr.org/blogs/thesalt/2012/12/26/167819082/dont-fear-thatexpired-food.

20 Eastern Research Grp., Inc., supra note 17, at 3.1.

21 Katherine M. Kosa et al., *Consumer Knowledge and Use of Open Dates: Results of a Web-Based Survey*, 70 J. of Food Prot. 1213, 1218 (2007).

22 Shirley J. Van Garde & Margy J. Woodburn, *Food Discard Practices of Householders*, 87 J. of The Am. Dietetic Ass'n 322, 329 (1987).

23 Theodore P. Labuza & Lynn M. Szybist, *Current Practices and Regulations Regarding Open Dating of Food Products* 20 (The Retail Food Indus. Ctr., Working Paper No. 01, 1999).

24 Telephone Interview with Dr. Theodore P. Labuza, Professor of Food Science, Univ. of Minn. (Oct. 10, 2012); Telephone Interview with Dr. Elliot Ryser, Professor of Food Science & Human Nutrition, Mich. State Univ. (Nov. 1, 2012).

25 Bus. Reference Panel, Better Regulation of 'Use by' Date Labelled Foods: A Business Review 19 (2011).

26 Gerri Ransom, Nat'l Advisory Comm. on Microbiological Criteria for Foods, *Consideration for Establishing Safety-Based Consume-By Date Labels for Refrigerated Ready-to-Eat Foods*, 68 J. of Food Prot. 1761-66 (2005).

27 Id.at 176-63.

28 Interview with Dr. Theodore P. Labuza, supra note 24. The National Advisory Committee on Microbiological Criteria for Foods (NACMCF) has defined Ready-to-Eat (RTE) products as "food that is in edible form without additional preparation to achieve food safety (such as heating) but may receive additional preparation for palatability or aesthetic, epicurean, gastronomic, or culinary purposes." Ransom, *supra* note 26, at 1763.

29 Ctr. for Food Safety & Applied Nutrition, Food & Drug Admin. & Food Safety & Inspection Serv., U.S. Dep't of Agric., Quantitative Assessment of Relative Risk to Public Health from Foodborne Listeria monocytogenes Among Selected Categories of Ready-to-Eat Foods viii (2003).