Journal of Agriculture, Food Systems, and Community Development
ISSN: 2152-0801 online
https://foodsystemsjournal.org

COMMENTARY

Food recalls: An unnecessary and preventable factor in food waste

Rubén O. Morawicki *
Johnson and Wales University

Submitted September 18, 2024 / Published online January 15, 2025

Citation: Morawicki, R. O. (2025). Food recalls: An unnecessary and preventable factor in food waste [Commentary]. *Journal of Agriculture, Food Systems, and Community Development*, *14*(1), 111–114. https://doi.org/10.5304/jafscd.2025.141.026

Introduction

Food recalls are initiated by food manufacturers or mandated by regulatory agencies when a problem that can harm the public is identified. Recalls take place after the products have left the processing facility and are no longer under the processor's control, and their primary goal is to minimize harm by retrieving as much product as possible from the market. Not all recalls have the same gravity. In the U.S., food recalls are classified by the U.S. Department of Agriculture (USDA) and the U.S. Food and Drug Administration (FDA) into three classes based on the severity of health risks, with Class I being the most severe; a Class I recall is for defective products that can cause severe health effects or death (FDA, 2024, p. 7-1; USDA Food Safety and Inspection Service [USDA FSIS], 2024-b).

Recalls can be partial or total, depending on how efficient a processor is in codifying and tracing different lots of products. Depending on the issue, if the lot sizes are relatively small, recalls can be contained to just the affected lots. However, if there is no clear separation between lots or their size is significantly large, more expansive recalls are required. When lots are not clearly identified, a total recall of all products in the market may be necessary. An example of this was the multistate recall by the Peanut Corporation of America in 2009 due to its peanut butter being contaminated with *Salmonella typhimurium* (CDC, 2009). In this recall, more than 3,900 different types of products were retrieved from the market from 46 U.S. states (Flynn, 2009).

Once the recalled product is in the processor's hands, the next step is determining what to do with it. This may involve rework, utilization for other uses, or disposal, the latter being, in most cases, the safer and most cost-effective choice. When disposal is chosen, landfilling and incineration are options for solid products, while liquids are generally dumped into a drain. Regardless of the discarding method, the once-edible product becomes food waste.

Despite not being the primary source of all food waste, recalls contribute significantly to the

* Rubén O. Morawicki, Associate Professor and Director of the Ecolab Center for Culinary Science, College of Food Innovation & Technology, Johnson and Wales University; 321 Harborside Boulevard; Providence, Rhode Island 02905 USA; ruben.morawicki@jwu.edu; https://orcid.org/0000-0001-5927-9796

issue, impacting the circular food system where the goal is to minimize waste and reuse resources. Nevertheless, food recalls produce one of the most significant impacts because of the embedded resources, such as energy, water, fertilizers, and materials to grow or raise, process, pack, and transport the product, with the corresponding impacts on resource depletion and emissions. The type of food disposed of also dictates the level of the impact, with animal products having significantly more impact than vegetables because of the conversion factor of feed into muscle. And the consequences do not end here. Once in the landfill or a wastewater treatment facility, additional carbon dioxide and methane emissions contribute even further to global warming.

Another adverse effect of recalls is that they affect consumers' perceptions. It has been observed that during some recalls, the public avoids complete food groups, even when the problem was with just one particular brand (Marsh et al., 2004). The consequence of this avoidance is that products, especially perishables, are not purchased and become food waste.

The top cause of FDA-regulated recalls is undeclared allergens on labels (approximately 50%), followed by contamination by microorganisms such as *Listeria* and *Salmonella* (30%) (author's caclulations from data at FDA, n.d.). In the USDA jurisdiction, unreported allergens represent 20%, product contamination is around 30%, and lack of inspection is 13% (author's caclulations from data at USDA FSIS, n.d.). While some issues, such as Listeria contamination, can be more challenging because of the persistence of these microorganisms in processing plants, mislabeling and lack of inspection are entirely avoidable. Mislabeling, especially regarding allergens, is a severe issue, as a significant portion of the population suffers from food allergies. Avoiding allergens is the only way for those with allergies to prevent reactions, making accurate labeling crucial.

Microbial contamination that leads to recalls sometimes takes years to be discovered. Five years before the 2015 *Listeria* outbreak and recall associated with Blue Bell ice cream products, the U.S. Centers for Disease Control and Prevention (CDC) isolated the strain of listeria from patients that was then matched with strains found in Blue Bell ice cream (Ellis & Yan, 2015). FDA inspections in 2015 identified many problems that eventually led to the recall, such as poor sanitation practices, improper cleaning equipment, and deteriorating processing facilities (Siegner, 2015). As a result of the ongoing outbreak, three people died, 10 were confirmed ill, and millions of pounds of recalled ice cream resulted from the outbreak.

When this article was written in 2024, the Boar's Head recall of liverwurst and dozens of other products was ongoing. The recall was initiated in July 2024, but signs of trouble appeared at least two years before the recall, when USDA inspectors identified severe violations in the processing facility, including mold growth, holes in walls, leaks, and pest infestation. It was apparent that the violations were not wholly addressed because on July 25, 2024, after many people got sick with listeriosis after eating their products, Boar's Head initiated a recall of their liverwurst products (and at least a dozen products followed), and on July 31, the USDA withheld the federal mark of inspection because the facility "failed to maintain sanitary conditions" (USDA FSIS, 2024-a). The magnitude of the recall was in the order of several million pounds of product.

The final fate of Blue Bell ice cream or Boar's Head deli recalled products is unknown because companies are not generally forthcoming about their disposition method of recalled products. But, based on the defect—microbial contamination—it is likely that the recalled products were disposed of or, perhaps, redirected for other use, which could lessen the impact to some extent. The ingredients used in both companies' products come from animal sources, so it is worth mentioning that to produce one pound of meat under the feedlot system requires 25 pounds of grain (Smil, 2002), while one pint of milk takes approximately one pound of feed (Wolf, 2010). Therefore, disposing of these types of animal products is a considerable waste in the supply chain from raw material production to disposal.

Unfortunately, recalls continue to occur due to preventable causes. Producing safe food products is a complex endeavor, and some products, due to their nature or the origin and type of ingredients,

are more complicated than others, but it is not impossible to reduce the incidence of recalls. The key is having a food safety management system in place and a solid commitment to safety. For almost three decades, USDA-inspected plants have followed the principles of Hazard Analysis and Critical Control Points (HACCP) as a food safety management system, while the FDA has followed a similar approach, named food safety plans, which stems from the Preventive Controls for Human Food rule mandated by the Food Safety Modernization Act (FSMA; 2011) passed by Congress in 2011 (Food Safety Modernization Act, 2011). The FDA also uses HACCP in some industries, such as juices and seafood. Even when both systems are similar, they have critical differences. A HACCP plan follows a process-centered approach, while a FSMA's food safety plan focuses not only on the process but also on sanitation, allergen, and supply-chain preventive controls to address potential hazards.

HACCP and food safety plans are preventive approaches that systematically identify potential hazards in the production of food products and develop strategies to minimize the chances of occurrence. If any nonconformity occurs, a well-designed and implemented HACCP or food safety plan will contain and minimize the damage. In addition to needing to be well designed and implemented, a HACCP or food safety plan must be followed in day-to-day operations. However, a factor that often conspires against these tools is complacency. If not reminded of these principles continuously, operators will start missing steps and jeopardizing food safety. Moreover, this becomes even more detrimental when management is not entirely on board.

Based on the U.S. Environmental Protection Agency Wasted Food Scale (EPA, n.d.), food waste must be prevented from reaching the landfill, incinerator, or drain by all means. On top of the scale, there is avoiding waste generation, followed by upcycling, using as animal feed, composting, using anaerobic digestion, and disposing of the product as a last resort. Except for avoiding waste generation, all the other choices represent palliative actions to minimize something that should not have occurred in the first place. Of all the food waste generated, recall-related waste is, in most cases, completely avoidable. It is just a matter of having the right management system, trained operators, and managers committed to food safety.

References

Centers for Disease Control and Prevention [CDC]. (2009, May 11). 2008-2009 *Salmonella* outbreak linked to peanut butter. https://archive.cdc.gov/#/details?url=https://www.cdc.gov/salmonella/2009/peanut-butter-2008-2009.html

Ellis, R., & Yan, H. (2015, April 21). CDC: Blue Bell listeria outbreak dates to 2010. *CNN*. https://www.cnn.com/2015/04/20/health/blue-bell-ice-cream-recall

Environmental Protection Agency [EPA]. (n.d.) *Wasted food scale*. Retrieved September 16, 2024, from https://www.epa.gov/sustainable-management-food/wasted-food-scale

Flynn, D. (2009, September 18). PCA peanut butter Salmonella outbreak. *Food Safety News*. https://www.foodsafetynews.com/2009/09/meaningful-outbreak-5-pca-peanut-butter-salmonella-outbreak/

Food & Drug Administration [FDA]. (n.d.). *Recalls, market withdrawals, & safety alerts*. Retrieved September 10, 2024, from https://www.fda.gov/safety/recalls-market-withdrawals-safety-alerts

FDA. (2024). *Investigations operations manual 2024*. https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/inspection-references/investigations-operations-manual

Food Safety Modernization Act, Pub. L. No. 111-353, 124 Stat. 3885. (2011). https://www.gpo.gov/fdsys/pkg/PLAW-111publ353/pdf/PLAW-111publ353.pdf

Marsh, T. L., Schroeder, T. C., & Minert, J. (2004). Impacts of meat product recalls on consumer demand in the USA. *Applied Economics*, *36*(9), 897–909. https://doi.org/10.1080/0003684042000233113

Siegner, C. (2015, May 7). FDA inspectors report long list of problems at Blue Bell plants. *Food Safety News*. https://www.foodsafetynews.com/2015/05/fda-inspectors-report-long-list-of-problems-at-three-blue-bell-plants

Smil, V. (2002). Eating meat: Evolution, patterns, and consequences. *Population and Development Review, 28*(4), 599–639. https://doi.org/10.1111/j.1728-4457.2002.00599.x

U.S. Department of Agriculture Food Safety and Inspection Service [USDA FSIS]. (n.d.). *Recalls & public health alerts*. Retrieved September 10, 2024, from https://www.fsis.usda.gov/recalls

USDA FSIS. (2024-a, July 31). *Revision of the Notice of Suspension.* Retrieved from the Boar's Head website: https://boarshead.com/pdf/Boars-Head-NOS-July-2024_view.pdf

USDA FSIS. (2024-b, September 26). *Understanding FSIS food recalls.* https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/understanding-fsis-food-recalls

Wolf, C. A. (2010). Understanding the milk-to-feed price ratio as a proxy for dairy farm profitability. *Journal of Dairy Science, 93*(10), 4942–4948. https://doi.org/10.3168/jds.2009-2998