

# Track & Trace

*Foodborne Illnesses Prompt New Era  
Of Consumables Accountability*

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When a food-contamination situation erupts, it's imperative that companies be well-equipped to trace the origins of that outbreak and act effectively to limit the public's exposure to pathogens.

While the government has, for decades, focused energies in this arena, new legislative efforts would up the ante, making various federal agencies even more vigilant in working to thwart foodborne illnesses. H.R. 814: Trace Act of 2009 is aimed at improving the safety of food, meat, and poultry products via enhanced traceability and would dramatically improve the ability to follow almost all products.

Another bill, which has passed the House and awaits Senate approval, represents the first major overhaul of food laws since 1938. At least four other food-safety bills are in various stages of consideration within either the House or Senate. But it's not just those on the Hill who are exerting pressure.

Consumers also are pushing hard on manufacturers to provide more descriptive information on products, not just a jumble of numbers and letters only manufacturers understand. They want to see more meaningful phrases, such as "sell by", "use before" or other easily comprehended statements.

The industry itself probably is the least of the movers: They do what they need to do so they can trace the product, but not much else. In fact, most companies consider coding a necessary evil and it's not viewed as a value-added element in the manufacturing process. Therefore, companies often make purchasing decisions regarding coding equipment based primarily on price, forgetting to understand the implications of having equipment not perform as expected.

But as was evidenced by this year's deadly nut poisoning that forced Peanut Corporation of America into bankruptcy or Hudson Foods' meat-contamination debacle a decade ago, product liability can ruin a company. In this litigious society, big companies are particularly vulnerable to lawsuits, so being able to trace foods to exact times of manufacture is extremely important to quickly remove them from the market to minimize any risk to the consumer and to counter any legal claims.

With all the recent food-contamination incidents, such as salmonella-tainted spinach and serrano peppers, it's important for manufacturers to easily and quickly be able to:

- identify the origin of the product
- identify when a product was made; and
- alert consumers when a problem occurs.

The recent peanut butter problem illustrates the need to be able to alert not only the public, but other manufacturers incorporating the product into their own goods. In fact, edibles included in other products cause the biggest risk and aren't easily understood by consumers. Therefore, it's up to manufacturers to possess good recordkeeping processes to ensure traceability of *all* ingredients.

### **Interfering factors**

One of the major traceability improvements to occur in recent years, 2D bar codes allow more information to be stored in a small, machine-readable format. However, this technology is seldom used within the food industry.

Several other technologies are available for use in the coding process. Continuous ink jet (CIJ) is the most popular for small-character product making and works on almost all surfaces and under most manufacturing conditions. CIJ technology is the preferred method used to code products for a number of reasons. Since it is non-contact, CIJ won't affect product-line speed. Also, it has extreme flexibility for message content and amount of information that can be printed in a single pass. Laser is effective in certain instances, though speed and substrate composition limit this technology. Thermal transfer overprinters are widely used on films running on vertical form/fill/seal machines, but suffer from print-area and speed limitations. In addition, a variety of large-character technologies exist for applications intended for case labeling, but not individual product marking.

Whatever method is chosen, it's critical that it works 100% of the time. Even leaving one product uncoded allows for the chance that it couldn't be traced or that a consumer won't purchase it and it simply will be wasted. Coding also must be legible: If a code is unreadable, it's useless.

Numerous factors—human and mechanical—can interfere with obtaining a legible code 100% of the time. Sometimes the equipment is complicated. Unreliable hardware can be a culprit. Failure to properly maintain equipment is perhaps the biggest reason for failed code printing. Inefficiency might also result from substitution of manufacturer-recommended supplies in the coding equipment.

Lack of knowledge of how to operate equipment or entering incorrect printing data are among some of the other human factors thwarting a 100% legibility rate. Methods exist for using barcode scanners to recall pre-programmed messages to eliminate data-input errors, but few use this method.

### **Juggling jargon**

Most food items have a code if they are packaged. Notable exceptions are loose produce, although increasingly the trend is to package these items individually. In most of the industrialized world, individual eggs carry a printed "use by" date. This is expected to occur in the United States and Canada soon.

Consumers on the whole appear to be more educated about foodborne illnesses and are indeed more cautious when purchasing products. However, it would prove beneficial if the industry could create a standardized and enforceable language. The typical grocery-store customer probably is not aware of the distinction between such statements as "sell by" versus "best by..." or the concept of refrigerating for best taste versus for safety.

Including country-of-origin labeling isn't just a legal mandate, but a good idea as well. The original law, enacted in 2002, covers mainly beef, pork, and lamb. In 2008, it was expanded to cover fresh fruit, nuts, and vegetables. Some believe that, given a choice, an American consumer would purchase a made-in-the-U.S.A. product rather than its foreign counterpart. Whether or not that is true, such information will help with traceability in situations such as the Mexican serrano pepper problem last year or the Chinese food-additive issue.

Still, nothing beats good manufacturing practices in preventing a foodborne-illness outbreak from occurring in the first place. Many food-processing plants still are not cleaned properly. Also, false assumptions still pervade the industry; for example,

prepared food must be safe for consumption. What if the product was not cooked or sealed properly? These are things to monitor in solving the safety equation. But should they fail, the coding system cannot.

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