

# Food Traceability: Solving the Imperative of Compliance



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Consumers' confidence in the food they consume is eroding. The numbers quickly illustrate why: in the last few years FDA food recalls increased nearly 400%, largely due to salmonella and undeclared allergens<sup>1</sup>. Ghastly stories such as contaminated foods causing deaths across several states further diminish consumers' confidence in food—and in the retailers where they purchased the recalled produce.

Both the United States government and the produce industry have taken notice of this critical situation. Their responses have resulted in the Food Safety Modernization Act, which includes the Bioterrorism Act and Country-of-Origin Labeling requirements of 2002, as well as the Produce Traceability Initiative. In addition, large influential retailers are placing increased emphasis on consumer safety and mandating that all fresh produce delivered to their distribution centers follow the new industry standards for labels.

While the new government regulations and industry initiatives can be difficult to navigate, compliance is more important than ever. Beyond the risks of enormous financial fallout due to recalls, even the best produce is in jeopardy of being rejected by large retailers for failure to meet mandated labeling standards.

## Food Safety: A Complex Government and Industry Imperative

Food safety is imperative from the point of harvest to the point of sale—as well as the point of consumption. Today, this issue is under intense scrutiny from the government, the food industry and consumers.

Extraordinarily high profile contamination cases are drawing an intense spotlight on food safety. For example, in late 2013, the two Jensen brothers who owned a Colorado cantaloupe farm pleaded guilty to six federal misdemeanor counts of introducing and delivering adulterated food into interstate commerce. The charges stemmed from a 2011 listeria epidemic that crossed 28 states, hospitalized nearly 150 people and resulted in 33 official deaths<sup>2</sup>.

According to food safety experts, prosecutors did not charge the Jensen brothers with more serious felonies because it would have required proof that the Jensen's knew their produce was contaminated<sup>3</sup>. However, a notorious case of contaminated food in Europe did uncover serious fraud. Horsemeat was found in beef burgers from Ireland and a frozen food supplier recalled beef lasagna, followed by a British grocery store chain announcing that samples of a frozen meat contained more than 60 percent horse DNA. In addition, horsemeat could potentially contain a drug known as bute, a common anti-inflammatory painkiller for sporting horses that's banned for animals intended for human consumption<sup>4</sup>.

The horsemeat scandal has raised significant questions about food producers misleading the public. Even if the meat is technically safe, it has disturbed consumers and led them to question food labels and quality control. Criminal conspiracies have emerged as investigations describe a complex network of slaughterhouses and middlemen standing between the farm and supermarkets across Europe<sup>5</sup>.

It is cases like these—as well as less headline-grabbing food safety issues—that prompted the FDA to pass the Food Safety Modernization Act. In addition, the USDA, FDA, WTO and other agencies passed associated mandates, including the Bioterrorism Act and Country-of-Origin Labeling requirements of 2002. The produce industry has also created the Produce Traceability Initiative.

While the details of these mandates and regulations can be overwhelming regardless of the size of a farm, supplier or retailer, they cannot be ignored. Currently, some of the compliance is mandatory and some compliance is voluntary. But as instances of food safety scares and recalls increase, it is becoming vital for both the suppliers and retailers to participate and collaborate in these programs.

It is necessary for everyone involved in the food chain, from the field to fork, to comply with these regulations.

## Food Safety Modernization Act (FSMA)

Passed by Congress in January 2011, the Food Safety Modernization Act (FSMA) requires certain retailers to trace the products they buy. When the FSMA was signed into law, it signaled intent for the FDA to transition from contamination response to prevention. As the broad-reaching changes are fully implemented, they will include requirements for food facilities to proactively integrate plans for corrective action.

The Food Safety Modernization Act also expands the reach and regulatory powers of the FDA. It adds new responsibilities for food companies, new controls on imports, enhanced enforcement powers and new fees. With respect to recalls, the Act gives the FDA mandatory recall authority, which is an expansion of its power in this area.

Now, grocery stores and food retailers must actively alert its customers of the latest product recalls and take appropriate removal steps. And the FDA will have access to recall records for suppliers and retailers. **Because of this, recall plans are of the utmost importance.**

1 Texas Food Safety Conference 2011 – SAGE Food Safety presentation August 17, 2011

2 The Denver Post, October 22, 2013 [http://www.denverpost.com/breakingnews/ci\\_24362315/colorado-brothers-plead-guilty-cantaloupe-listeria-outbreak-that](http://www.denverpost.com/breakingnews/ci_24362315/colorado-brothers-plead-guilty-cantaloupe-listeria-outbreak-that)

3 Ibid.

4 Worldnews.nbcnews.com, February 11, 2013 [http://worldnews.nbcnews.com/\\_news/2013/02/11/16923956-criminal-conspiracy-blamed-for-european-horse-in-burger-scandal?lite](http://worldnews.nbcnews.com/_news/2013/02/11/16923956-criminal-conspiracy-blamed-for-european-horse-in-burger-scandal?lite)

5 Ibid.

### What does an effective recall plan look like?

- The ability to trace produce throughout the supply chain
- The ability to take action within 24 hours of a recall
- A plan – and the ability – to contact customers, retailers and consumers
- An appropriate strategy and implementation plan to remove recalled product from the market
- A process to destroy and/or manage the recalled produce according to FDA guidelines
- Accurate, accessible records of the above activities

Through the FSMA, the Food and Drug Administration (FDA) will have enforcement powers to see that those plans are adequate, including mandatory recall authority. The law empowers the FDA to block food from facilities or countries that refuse FDA inspection. This is significant in that an estimated 15 percent of the U.S. food supply is imported, including 60 percent of fresh fruits and vegetables and 80 percent of seafood<sup>6</sup>. Regulations like the Food Safety Modernization Act have increased urgency as well as legal consequences of not having great supply chain visibility at the product level, at each phase in the chain, at your fingertips.

### U.S. Bioterrorism Act of 2002

In 2002, the government determined that the nation's food supply was vulnerable to terrorist attack; therefore, it passed the U.S. Bioterrorism Act of 2002<sup>7</sup>.

As food products move through the food chain from production to consumption, they are typically transferred between multiple entities for packing, processing, storage and transportation, creating the potential for food safety issues at each point of the chain. In accordance with the Bioterrorism Act of 2002, and recognized international principles of traceability, companies must track one-step-up and one-step-down the supply chain. (In the United States, this excludes individual restaurants or individual stores). Therefore, the additional information needed to be stored and linked to each GTIN and Lot/Batch # includes information already available on the purchase order, bill of lading or invoice:

- Buyer/Receiver contact information
- Product description
- Quantity
- Unit of measure (e.g. cases, boxes, eaches, etc.)
- Transporter that brought the load to your company
- Vendor/Supplier/Sender contact information
- Date of shipment
- Ship from location (shipping information)
- Date of receipt

Every company that receives inbound product (excluding individual restaurants and individual stores) must read and store this information into its computer systems. Under the U.S. Bioterrorism Act, these records must be retained for two years. However, shippers are also responsible for being aware of requirements in other countries outside of the United States<sup>8</sup>.

### Country of Origin Labeling (COOL)

Country of Origin Labeling (COOL) regulations require certain products—among those seafood, beef, poultry, lamb, goat and some nuts as well as some fresh and frozen fruits and vegetables—to be labeled with their country of origin. Retailers and growers have deemed this set of regulations particularly burdensome<sup>9</sup>.

In addition, Canada and Mexico have both complained that COOL violates its international trade rules and harms agricultural commerce. Recently the World Trade Organization ruled in support of complaints by Canada and Mexico that COOL violates its international trade rules and harms agricultural commerce<sup>10</sup>.

As a result, the Food Marketing Institute issued a statement praising this WTO ruling<sup>11</sup>.

According to the statement:

“This year, COOL enforcement has become more burdensome than ever, making it challenging for retailers to carry imported meats, produce and seafood. Although the compliance rate for the program last year was 97%, this year, inspectors are demanding that more redundant records be maintained—at great cost to grocers.

“The COOL law will need to be repealed or rewritten in order for the U.S. to meet its obligations to global trading partners. We look forward to working with Congress and the U.S. Department of Agriculture to develop an alternative system; one that will provide useful information to consumers and put our nation in compliance with international trade agreements.”<sup>12</sup>

Even with the disputes and controversies, growers and retailers are required to comply with COOL until it is rewritten or appealed, further complicating the work required to achieve—and maintain—compliance with ever-changing and growing regulations.

### Produce Traceability Initiative (PTI)

Led by participants from every segment of the industry, the Produce Traceability Initiative (PTI) is a supply chain-wide, voluntary effort to help maximize the effectiveness of current track and trace procedures while concurrently developing a standardized industry approach to enhance the speed of traceability systems. Waiting for the Food and Drug Administration to finalize traceability regulations to implement the Food Safety Modernization Act can cost the industry time and, perhaps most importantly, consumer confidence in the safety of their produce<sup>13</sup>.

Therefore, rather than have the government mandate a solution, the produce industry voluntarily has moved forward with developing its own standard. Three associations – United Fresh Produce Association, the Canadian Produce Marketing Association and the (US) Produce Marketing Association – are sponsoring an industry-led effort to standardize industry traceability throughout the entire produce supply chain<sup>14</sup>.

6 “Greater Visibility Needed Into Food & Beverage Value Chain,” *Food & Beverage*, January/February 2011, p. 26

7 [http://www.cbp.gov/xp/cgov/trade/trade\\_programs/is\\_initiatives/bioterrorism/bioterrorism\\_act.xml](http://www.cbp.gov/xp/cgov/trade/trade_programs/is_initiatives/bioterrorism/bioterrorism_act.xml)

8 U.S. Bioterrorism Act of 2002 summary and additional information found at [http://www.cbp.gov/xp/cgov/trade/trade\\_programs/is\\_initiatives/bioterrorism/bioterrorism\\_act.xml](http://www.cbp.gov/xp/cgov/trade/trade_programs/is_initiatives/bioterrorism/bioterrorism_act.xml)

9 <http://www.fmi.org/docs/media-backgroundunder/col-backgroundunder.pdf?sfvrsn=2>

10 [http://supermarketnews.com/news/fmi\\_cool\\_1123/?cid=upd#ixzz1f7CilP8o](http://supermarketnews.com/news/fmi_cool_1123/?cid=upd#ixzz1f7CilP8o)

11 Food Marketing Institute press release. “Food Retail Industry Applauds WTO Ruling on COOL,” November 23, 2011

<http://www.fmi.org/news-room/news-archives/view/2011/11/23/food-retail-industry-applauds-wto-ruling-on-cool>

12 [http://supermarketnews.com/news/fmi\\_cool\\_1123/?cid=upd#ixzz1f7CilP8o](http://supermarketnews.com/news/fmi_cool_1123/?cid=upd#ixzz1f7CilP8o)

13 “About the PTI” flyer, September 2011 [http://www.produce-traceability.org/documents/PTI%20Flyer\\_FNL\\_v2%202011-10-20.pdf](http://www.produce-traceability.org/documents/PTI%20Flyer_FNL_v2%202011-10-20.pdf)

14 The Produce Traceability Initiative press release “PMA, CPMA, United Fresh appoint steering committee of the Produce Traceability Initiative,” November 28, 2007

<http://www.produce-traceability.org/press-contact/details/pma-cpma-united-fresh-appoint-steering-committee-of-the-produce-traceability>

With the PTI, industry leaders are building and implementing standards across the supply chain to significantly decrease the impact of potential recalls or safety issues for the nearly 6 billion cases of produce handled by the industry in the United States each year.

#### The PTI is made of up seven milestones.

1. **Obtain a company prefix.** A Company Prefix is a number obtained from the GS1 organization that uniquely identifies your company from any other company around the world.
2. **Assign GTIN numbers.** Brand owners will assign 14-digit Global Trade Item Numbers (GTINs) to every case configuration.
3. **Provide GTIN information to buyers.** Brand owners will provide their GTINs (and corresponding data) to their buyers.
4. **Show human-readable information on cases.** Packers are responsible for providing human-readable information on each case of produce.
5. **Encode information in a barcode.** Packers are responsible for encoding the 14-digit GTIN number and batch/lot number in a barcode.
6. **Read and store information on inbound cases.** Each subsequent handler of the case will have the systems and capability to read and store the GTIN and lot number from each case of produce received.
7. **Read and store information on outbound cases.**

Although it's certainly supported by government pressures and regulations, the success of these milestones is seen by many in the industry as contingent upon action from retailers. To date, the FDA and retailers such as Kroger, Wal-Mart and Safeway have applauded the produce industry's Produce Traceability Initiative (PTI)<sup>15</sup>.

### Resources

For further information about the FMSA regulations and the PTI, visit these websites:

#### Produce Traceability Initiative (PTI)

<http://producetraceability.org/>

#### FDA information on FSMA

<http://www.fda.gov/Food/FoodSafety/FSMA/ucm247546.htm>

United Fresh Produce Association [www.unitedfresh.org](http://www.unitedfresh.org)

Produce Marketing Association (PMA) [www.pma.com](http://www.pma.com)

### Consequences of Non-Compliance

Recent preliminary recall costs have ranged from \$30M to \$100M—and this does not include potential litigation costs, lost sales or impacts on stock price<sup>16</sup>. These numbers also do not include the cost of restoring business, the loss of profits and jobs or the short- and long-term damage to the brand<sup>17</sup>. And, of course, these numbers don't portray the impacts of completely losing a business.

Even without a recall, failing to comply with FSMA and PTI can have substantial financial implications. Wal-Mart notified its suppliers that all fresh commodity produce delivered to its distribution centers will be required to have standardized case labels consistent with PTI standards<sup>18</sup>. *Product out of compliance could be rejected by the retailer on the spot*<sup>19</sup>. In notifying its suppliers of this new mandate, Wal-Mart cited a heightened focus on customer confidence in the produce they are purchasing and consuming.

### Compliance Demands Food Traceability Solutions

Food traceability legislation may continue to bring more demands to the industry in the coming years and being able to track food directly from point of harvest to point of sale is absolutely crucial not only for farmers and food operators, but for the entire industry's supply chain network.

How do retailers, suppliers and growers comply with the current regulations—and keep up with changes as they occur? Implementing new food traceability technologies will not only allow companies to comply with these increasingly demanding legislations, but also offer faster, more productive operational efficiency.

The majority of the smaller growers that make up the bulk of the produce industry are multi-generational family businesses, with manual systems that have worked and made them successful over time without involving technology. However, today's relentless demands to meet complex regulations, including the ability to respond extremely quickly to recalls, makes the previous paper-based systems very complex and cumbersome.

### The Imperative of Effective Track and Trace Systems

An effective traceability system is the foundational element of many of the new regulations and requirements. Without an efficient, accurate track and trace system, the negative impact of a potential recall is multiplied. Without precise product identification, unaffected produce could have to be destroyed, which further eats away at tumbling profits—and does nothing to help public safety or customer satisfaction. In addition, slow execution and inaccurate tracking further delays the ability to determine the root cause of a food safety issue, which can also diminish customer confidence for the long-term.

<sup>15</sup> "About the PTI" flyer, September 2011 [http://www.producetraceability.org/documents/PTI%20Flyer\\_FNL\\_v2%202011-10-20.pdf](http://www.producetraceability.org/documents/PTI%20Flyer_FNL_v2%202011-10-20.pdf)

<sup>16</sup> Texas Food Safety Conference 2011 – SAGE Food Safety presentation, "Food Safety in a New Era," page 20, August 17, 2011

<sup>17</sup> Ibid

<sup>18</sup> PTI FYI Newsletter May/June 2013 <http://www.producetraceability.org/fyi/html/pti-fyi-e-news-may-june-2013>

<sup>19</sup> Wal-Mart letter to supplier partners, May 29, 2013, published on the Produce Traceability Initiative website at [http://www.producetraceability.org/documents/Wal-Mart\\_Case\\_Label\\_Standard\\_-\\_Supplier\\_Letter\\_WM\\_-\\_Sams\\_\(5\\_28\\_2013\).pdf](http://www.producetraceability.org/documents/Wal-Mart_Case_Label_Standard_-_Supplier_Letter_WM_-_Sams_(5_28_2013).pdf)

This is why track and trace technology is more important than ever for both retailers and growers. With technology, you can trace the entire path of food from point of harvest to point of sale across the entire supply chain – growers, packers, wholesalers, distribution centers and retailers. Mobility solutions are being successfully deployed to assist in this process. Growers and producers of produce, poultry, meat, seafood, etc. are using mobile computers, scanners and mobile printers to capture all relevant and required data at the point of harvest. These solutions are also being deployed in the processing plants, along each point of transport and in the distribution centers, to capture the data and update the systems in the event of a recall. This information, captured in real time, can be retrieved immediately, ensuring the safety of the consumer and resolving the problem quickly.

**Automated Track and Trace in Action**

- **Point of Harvest:** Mobile computers, including scanners, and smart printers with media labels quickly create standard labels for produce in the field.
  - Workers use a handheld scanner to print a label on an industrial printer. The printer sits on a cart, which can be moved directly to the boxes that require tags.
  - Once boxes are wrapped, a mobile printer generates a pallet tag.
  - The box and pallet labels include a barcode identifying the type of produce (e.g., type of orange), ship date, destination, farm source and even the farm lot.
  - The use of barcodes also meets compliance requirements for COOL, U.S. Bioterrorism Act and PTI throughout the supply chain.
- **Manufacturing or Processing Plant:** The same technology keeps accurate tracking – often with one simple scan.
- **Retail Food Warehouse:** Handheld computers and scanners, often the same or similar to those used in the field, plus voice-enabled inventory picking keeps the chain of produce accurate without additional paperwork or error-prone manual data entry.
- **In transit:** Mobile computers utilized by public and/or private fleets capture all information in the chain of custody throughout the transportation process.
- **Store:** Pallets and produce are scanned as the retailer receives them for fast, accurate inventory.



An additional benefit of mobile computers is their multi-purpose capabilities. For example, built-in cameras make it easy to capture product condition or other compliance-mandated information; handheld RFID readers can enhance productivity and enable asset tracking capabilities for high value and/or returnable assets. Mobile printers eliminate unnecessary foot travel to and from a fixed station to retrieve labels, further increasing the productivity gains associated with mobility solutions.

LoBue Citrus, a family-run grower and distributor of oranges, implemented an automated tracking system and improved its accuracy to nearly 99 percent. “We’ve seen our accuracy improve to between 98 and 99 percent, and drastically reduce our labor expenses by hundreds of dollars a day,” said Tom Clark, LoBue Citrus Operations Manager. The company can track and trace its nearly five million boxes of oranges produced each year within a matter of minutes. With the bar code system, the grower can tell which field a product was picked in and when the picking occurred. Every additional percentage point in accuracy helps a produce distributor stay competitive. With the automated system, physical inventories are a thing of the past, saving 2,080 to 4,160 labor hours each year, which equates to approximately \$24,960 to \$62,000 saved in labor costs per year.

**Increase Consumer Safety & Brand Protection**

When the safety of food is in question, time is critical. Consumer health – and even life – can be in jeopardy. Every second counts.

“At any given moment, if we were to have a trace-back for some reason, it’s simply a matter of getting notification from the consumer or buyer, and instantaneously we can pull up all information associated to a certain lot,” Tom Clark, LoBue Citrus Operations Manager, said of the company’s new automated traceability system.

Before implementing an automated track and trace system, LoBue Citrus said such a process could take roughly two hours. However, with most manual systems, growers could take **days** to find all of the information needed—even if the grower is small. Every hour, even every minute, saved can make a difference in the prevention of illnesses from tainted food and in the unnecessary erosion of profits from the destruction of produce that’s actually safe, but not well documented.

Communicating quickly with trade and end-customers on produce status, as well as responding promptly to inquiries, is imperative to increase customer satisfaction. The faster a grower can respond to safety inquiries, the stronger the relationship with the retailer. When consumers are concerned about the safety of their food, they aren’t going to remember the name of the farm that grew the produce; they are going to remember the name of the retail store where they bought it.

**Compliance with government regulations**

Accurately capturing and gathering information required for compliance, whether it’s standardized pallet labels for a retailer or in response to an FDA-mandated recall, is an imperative today. Managing such data and the flow of information with paper-based systems can be time-prohibitive and error-ridden. Being out of compliance with regulations, even if it’s only because of a small human data entry mistake, can be costly due to fines and business shut down, especially if there’s an

**Benefits of Automatic Track and Track Systems**

Traceability systems utilizing mobile computers, scanners and label printers offer significant advantages over pen-and-paper methods for all businesses involved in the food chain—regardless of size. Automated track and trace systems improve productivity, increase consumer safety and brand protection as well as enable compliance with government regulations.

**Improve Productivity**

Best in Class operations are deploying mobility solutions to drive greater accuracy and productivity in inbound operations. For example, pairing mobile computers with mobile printers on the receiving dock allows the workers to take the “process to the product.” Mobile computers give the receivers the ability to automatically capture all necessary data through fast and efficient scanning. This process is more cost efficient and can drive productivity increases of 20% - 30% over more labor-intensive paper processes. It is also far more accurate and eliminates data entry errors that can occur in multiple phases of a paper process.

investigation. Compliance laws required gathering and maintaining accurate information **in each step of the process** of moving produce from point of harvest to point of consumption.

Most top-tier supply chain execution systems provide software that meets regulations, helping farmers, suppliers and retailers achieve—and maintain—compliance. Pairing these systems with rugged mobility solutions that enable accurate data at each step of the process and archiving it for future use is mandatory. The use of mobile computers, scanners and barcode printers from the field to transit to the retail receiving dock helps to ensure accurate, accessible and standardized information at all points along the way.

### **What's Next: Point of Harvest to Point of Consumption**

By combining current automated track and trace software with customer relationship management software (CRM) already used by retailers, it's entirely possible to trace food from point of harvest to **point of consumption**. Intermecc by Honeywell is looking to the near future to help retailers move from a reactive stance regarding consumer safety to harnessing the ability to proactively keep the public safe.

Intermec with its partners has the ability to create tracking information and follow food through the full chain of custody. With software hosted on wireless printers, the company eliminates the need for PCs or other devices and enables remote growers to use automated track and trace with ease. Once the produce is labeled, it's handed off to trucking, then processing and finally stores. Currently, that's where tracking stops.

However, there's another step possible for retailers—one that can significantly and positively impact consumer safety.

Using the lot numbers created for outbound labeling, customers' purchases could continue being traced from the POS and CRM systems. These systems are already being used to track the type of food, such as spinach, consumers buy—and they could also be used to track the specific lot number of the spinach purchased by each customer. This is tracking from point of harvest to point of consumption.

In this case, if a store had bags of spinach from two lots and there is a recall on only one lot, the retailer could utilize their network to identify the customers who bought that specific lot of spinach and *proactively* send these customers an alert via email, phone and/or text message. Today, consumers are alerted to recalls through reactive public announcements; however, it's extremely easy for customers to never see these announcements, whether it's due to travel or not reading the news on a regular basis.

By tracking food from point of harvest to point of consumption, as Intermecc envisions, retailers can leverage consumers' preferred mode of communication and proactively protect their customers – and their brands.

### **Conclusion**

In today's complex environment of complicated, yet extraordinarily important, requirements for food safety, an effective food traceability system is imperative. With the steep increase in FDA food recalls, every second required to respond could mean the difference in consumers' health and in the loss of millions of dollars.

Technology-based traceability systems, utilizing mobile computers, scanners and label printers, provide substantial advantages over pen-and-paper methods for small and large businesses in the food chain. Automated track and trace systems improve productivity, increase consumer safety and brand protection as well as enable compliance with government regulations.

Together with our partners, Intermecc by Honeywell provides a whole product solution for food traceability. Only Intermecc offers a complete range of rugged mobile computers, Vocollect® voice solutions, printers, media, scanners and RFID products to make implementing an automated food traceability program easy and cost-effective. Intermecc and our partners' solutions make tracking easier, safer and faster for farmers and growers, food processors and packers, distributors and grocery stores, which ultimately benefit your customers and their end-consumers. Because our products are easy to use—even those without any food traceability program experience can get up to speed easily thanks to our partners—implementation is cost-effective, giving you hardware, software, and service solutions for meeting and maintaining food safety compliance.

Intermecc, now part of Honeywell Scanning and Mobility, is focused on supply chain workflow performance. We design the leading data capture and information management solutions at the interface between mobile workers, assets, and customers. For more information about Intermecc, visit [www.intermec.com](http://www.intermec.com) or call 800-934-3163.

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